SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT PROTECTION AND ECOSYSTEM-BASED MANAGEMENT ADVISORY PANEL

Town and Country Inn and Suites
Charleston, South Carolina

May 16-18, 2023

Transcript

Habitat Members

Cynthia Cooksey, Chair
Stacie Crowe, Vice Chair
Thomas Jones
David Whitaker
Casey Knight
Kevin Spanik
Dr. Wilson Laney
David Webb
Sam Young
Anne Deaton
Paula Keener
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Council Members

Trish Murphey
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Kelly Klasnick
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Observers and Participants

Other observers and participants attached.

The Habitat Protection and Ecosystem-Based Management Advisory Panel of the South Atlantic Fishery Management Council convened at the Town and Country Inn, Charleston, South Carolina, on May 16, 2023, and was called to order by Chairman Cindy Cooksey.

MS. COOKSEY: Good afternoon, everyone, and welcome to the spring 2023 Habitat Advisory Panel meeting for the South Atlantic Fishery Management Council. I wanted to kind of kick-off the meeting with a round of introductions, and so, for those of you who may not know me yet, my name is Cindy Cooksey, with NOAA Fisheries Habitat Conservation Division, and I am currently serving as the chair of the Habitat Advisory Panel, and how about we go clockwise around the room, and then we will also open it up to any of our virtual AP members for introductions, and so we'll go next to Stacie.

MS. CROWE: Good afternoon. I'm Stacie Crowe, and I'm with the South Carolina Department of Natural Resources Office of Environmental Programs in Charleston. I am currently serving as Cindy's vice chair, although Cindy does 99.9 percent of the work.

MS. DEATON: Good afternoon. I'm Anne Deaton, and I'm with North Carolina Division of Marine Fisheries Habitat Enhancement Program, and I've been on the AP for a little bit, and I was the chair, and so I know it's kind of a hard job, but Cindy is doing good.

DR. LANEY: Hi. I'm Wilson Laney, and I was with the U.S. Fish and Wildlife Service for about thirty-eight years, and I retired a few years ago, and now I'm -- I think I'm at-large on the AP, representing North Carolina State University Department of Applied Ecology.

MR. JONES: Tom Jones, and I'm the Georgia recreational fishermen representative.

MR. WEBB: David Webb, currently living in Islamorada, board member of the West Palm Beach Fishing Club, and long-time recreational angler.

MR. WHITAKER: David Whitaker, and I'm retired from South Carolina DNR, after about forty years, in which I was mostly in fisheries management, and I also headed up the environmental office for a few years, and I'm glad to be here. Thanks.

MS. KNIGHT: Hello. I'm Casey Knight, and I'm with the North Carolina Division of Marine Fisheries. I used to work with Anne Deaton in the Habitat Enhancement Section, but, about eighteen months ago, I switched back to the Fisheries Management Section, and I'm Coastwide Manager there. This is my first in-person meeting, and I'm excited to be here.

MR. SPANIK: I'm Kevin Spanik, and I work with the South Carolina Department of Natural Resources, and I'm affiliated with the nearshore and offshore fisheries independent-surveys. Thanks.

MR. KAALSTAD: Hi, everyone. I'm Simen Kaalstad, and I'm with the Atlantic States Marine Fisheries Commission, and I recently took over the role of the coordinator for the Atlantic Coastal Fish Habitat Partnership, and so it's a pleasure to meet all of you in-person, finally.

MS. KEENER: Good afternoon, everyone. I'm Paula Keener, and I was with DNR, South Carolina DNR, in fisheries management, for a long time, and I have recently, three years ago,

retired from eighteen years with NOAA's Office of Ocean Exploration and Research. I'm glad to be here. Thank you.

MR. YOUNG: My name is Sam Young, and I represent, I guess, the recreational component, out of Stuart, Florida. I've been there for three years, and, prior to that, I had thirty years on the west coast, where I served on a couple of APs on the Gulf Council, and I'm a consultant on MRIP advancement. In any event, it's a pleasure to be here, and I look forward to a good couple of days. Thanks so much.

MR. PUGLIESE: I'm Roger Pugliese, Habitat and Ecosystem Scientist for the council, and I'm the staff helping to coordinate our advisory panel, as we move into the future. I appreciate everybody being here and all the work to now. For those who I think probably caught my note, this is going to be one of my last two meetings, this one and then in October, and I will be retiring this year, which is a hard thing to think about, when I'm reaching about thirty-eight years of leading the habitat charge at the council, and so I will pass it on.

MS. COOKSEY: I am having a very tough time envisioning doing this job without Roger, and he has been such a leader for so long, but I did want to open it up, if we have any online AP members that would like to introduce themselves. Currently, we have no AP members online. I quickly wanted to open it up for public comment, which we will do here at the beginning of the panel meeting, and we will do so again at the end. Other than those two periods, we will only be open to advisory panel member comments, and so I wanted to see if we have any raised hands for public commentary. No?

MR. PUGLIESE: No raised hands.

MS. COOKSEY: No raised hands, and so no public comments at this time, and, again, we will reopen for public comments at the end of the meeting. We have one note from Roger.

MR. PUGLIESE: We also don't have any online public comment, but, just for anybody, the links have been updated and re-added. There were some issues with that, and so the online links for comment are active again and are online, but, right now, we still do not have any comment, that I see.

MS. COOKSEY: Okay. Thank you. Just a quick reminder that we work by consensus, and so I would like to now seek approval, by consensus, for the agenda for this meeting this week.

AP MEMBER: Move to approve.

MS. COOKSEY: Thank you. Anne seconded, and it looks like I'm seeing nods of heads, and so we will consider that an approval of the agenda, and I would now like to seek approval, by consensus, for the November 2022 transcript of our last meeting.

MS. KEENER: So moved.

MS. COOKSEY: Thank you, Paula.

AP MEMBER: Second.

MS. COOKSEY: Thank you. It looks like we have no objection, and so we have approval of the 2022 fall AP meeting. Thank you all so much, and now I would like to ask Trish, our committee representative, to come forward and share some remarks with us.

MS. MURPHEY: Thank you, Cindy. I just want to thank everybody for being here today. It's great to see faces and names matching voices now, because this is my first in-person AP meeting. I used to be on the AP, a few years ago, during COVID, and so I only heard voices, and so it's great to see everybody in-person, but my name is Trish Murphey. I'm with the North Carolina Division of Marine Fisheries, and I also represent our director on the council, and I'm also Vice Chair, and then I'm also the Habitat Committee Chair on the council, and we've got Mel Bell over there, and he's our Vice Chair on the Habitat Committee, and so I just know -- I know this AP does a lot of work, and has a lot of work ahead of them, especially with looking at policies, different policies, and reviewing those, and, also, I guess the big project is the five-year EFH review, and so I think you guys have a lot of work ahead of you, but I think you'll be great, and, you know, on behalf of the council, we really appreciate your time and efforts in this.

Habitat is an important piece of fisheries management, and it sometimes gets left out, and so I appreciate all you all being here, and I will just turn it back over to Cindy. Also, thank you so much, Roger, for all the work and time that you've put into habitat. I mean, I have recognized your name from years ago, and, you know, I finally got to meet you in-person maybe a year or two ago, but thanks for all the work and time that you've put into habitat for the council, but thank you.

MS. COOKSEY: Thank you, Trish, and so I'm going to go ahead and have us dive into our agenda. Today's session is supposed to last until 4:00, and I will make sure that we have a break along the way, but, first off, we have our NOAA Fisheries Habitat Conservation Division EFH Consultation Update.

In the fall, Pace Wilber was able to attend our fall meeting, and he provided a very in-depth presentation for us. He was not available to attend this meeting, because of a conflict. However, he did provide me with a series of updates for me to relay to all of you, which I will do so now, and so we have, to-date, received 475 EFH consultation requests, putting us kind of on-pace for previous years, and we are looking at about 760 for the year, is what our current estimate is. Actually, it looks like Pace is saying that this is an increase, the most we've had in the last ten years, and Georgia and Florida are the ones leading that growth in our HCD consultation requests, and so that's pretty interesting.

Currently, our response rate, and so that is the rate at which the biologists actually have review and responses to the consultation requests that come in, is currently at 64 percent, which is exceeding our rate of a 50 percent target. However, northeast Florida remains the area with the lowest response rate, which is at currently 46 percent, for the Atlantic Branch.

Offshore wind projects remain the administration's, and therefore NOAA's, highest priority for EFH consultation. SERO HCD continues to assist GARFO with CVOW, the Coastal Virginia Offshore Wind Project, and that would be me, and is increasing the time spent reviewing Kitty Hawk North, Kitty Hawk South, and the Carolina Long Bay offshore wind projects, and so they are taking up the bulk of our time.

HCD has worked with BOEM to develop the habitat impact minimization alternative that BOEM will review in their EIS for Kitty Hawk North, and so their environmental impact statement, and so we have worked on crafting that with them, over a series of meetings. This alternative focuses on construction methods that will help to minimize adverse impacts.

Specifically, we're looking at burying of the cable and minimizing the amount of rocky material used for scour protection of the cables and around the bases of the wind turbine generators. This is unlike the wind parks on England and Mid-Atlantic waters, where the habitat minimization efforts have focused on moving wind turbines, and so we have not taken that tactic, and we're more focused on how can we ensure that scour protection is minimized, and what are the best management practices that we can ask the offshore wind community to utilize. Simply put, we did not find a sufficient amount of hardbottom, or sand ridges or waves, or shellfish concentrations, to warrant the movement of wind turbines, as compared to what they're seeing in the Mid-Atlantic region. The most important next steps are to identify species for the EFH assessment for the Kitty Hawk North project and to tailor new EFH assessment templates to the specifics of Kitty Hawk North.

Port Everglades remains a very high priority, and they are still working with the Army Corps of Engineers and Florida agencies to full develop a mitigation plan. This project has the largest amount of impacts to coral and hardbottom habitat ever authorized for U.S. waters, including more than 150 acres. The planned mitigation would be the most coral restoration ever attempted in the world, if this moves forward.

Fish passage and hydropower efforts are also increasing, and SERO issued a new license for the Santee Cooper hydroelectric project in January. This license reflects provisions that HCD requested, and several studies have begun to plan the details of this passage through Santee Cooper, and so those are our updates from HCD. Are there any questions or comments? Wilson.

DR. LANEY: Cindy, just to make sure I understood, in talking about the offshore wind and the move not to move any turbines, you're talking about moving the turbine locations actually to try and avoid habitat impacts, and is that what you meant by that?

MS. COOKSEY: That is correct. That has been a tactic in comments for the Mid-Atlantic, the removal or the micro-siting movement of the wind turbines and/or inter-array and export cables, but we are not suggesting that for Kitty Hawk. Paula.

MS. KEENER: Thank you, and so, if I understood correctly, you were working on the EIS with North Carolina for these three areas, or Kitty Hawk North, correct?

MS. COOKSEY: So we are developing, and we have developed, the habitat minimization alternative that they will include in their EIS, and we will soon begin working on developing the -- Or helping with the EFH assessment, and we're still working out how we are going to do that, and that will also be included in the EIS. Does that clarify?

MS. KEENER: Yes, and can you give an estimate of the timeline of when that EIS would be completed?

MS. COOKSEY: No. Okay. It does not appear that we have any other questions or comments in the room, and do we have anything online? No? Wilson.

DR. LANEY: I will jump in there and follow-up on Paula's question, and so I'm trying to remember which one it is, and so I know they changed the name, and it used to be Cape Fear East, and what is it now?

MS. COOKSEY: Wilmington East.

DR. LANEY: Wilmington East. Okay, and so that one is moving along, and it's further behind in the process than Kitty Hawk, right, and so are they even talking about NEPA compliance at this point, or are they still --

MS. COOKSEY: Well, the good news is -- The good news is that we are going to have an offshore session tomorrow, and we are going to have representatives from Carolina Long Bay, which was Wilmington East, that will be here to address many of those questions. Anything else? Stacie.

MS. CROWE: Cindy, I'm just curious, and where are they in the NEPA process with Port Everglades?

MS. COOKSEY: With Port Everglades? That is not my project, and so they are in the process of developing the mitigation for that project. Okay. It does not look like we have any questions online. Paula.

MS. KEENER: In addition to the focus on construction methods, burying the cable and minimization of the concrete, is there anything else that's happening in that area that is sort of new, or outside of the box, in terms of --

MS. COOKSEY: So, specifically for Kitty Hawk, there's nothing new that has really happened, other than the development of the habitat minimization alternative, and that was based on we did go back in and do a reanalysis, in partnership with BOEM, of the bottom survey data that they collected as part of the survey work that they did for the COP, the construction and operations plan, and so we, at NOAA, asked BOEM to go back in and reanalyze that data, because there were some issues with the quality of the video data that was collected, and there was an also an issue that they collected the benthic characterization bottom sampling at the same time that they completed the mapping component.

Consequently, we did not have many benthic characterization samples collected in the area of greatest interest, based upon the benthic mapping, and so we definitely had to go back in and do an extremely deep dive on what data we had, to try to wring out as much information as we could to reach the determination that we did not need to seek movement of any of the planned wind turbine generators. Anne.

MS. DEATON: I was just going to add, just in terms of new things going on, to address Paula, there's also that Kitty Hawk South, the newer one, right, and that's what you call South?

MS. COOKSEY: Yes, and so Kitty Hawk North and Kitty Hawk South were both leased at the same time.

MS. DEATON: Right, and it's the same wind energy area.

MS. COOKSEY: Right, and they divided it in half, and they have been proceeding with the development of North, and they have begun talking about Kitty Hawk South, but we've not seen -- We, NOAA, have not seen anything that would indicate that moving forward in the near-term, and so I have no new information.

MS. DEATON: It's coming, and they've been contacting the state agencies, and, with that one, they're starting to get the lines in, so that it can get to the North Carolina energy, because the North is going to Virginia, and it's going to be more challenging, in terms of environmental impacts, because it's going to be longer, possibly, you know, through, or under, SAV, the Outer Banks, and lots of things, and so, anyway, that's something coming up.

Another thing that I've heard is that there's more, you know, coming along, that there's been some discussion about like combining those cables, like when there's multiple units, so that there's not all these -- Each development has their own cables, but joining them somewhere, I guess, in the ocean, and then one path in, which would be good.

MS. COOKSEY: Shared cable routes is a big topic of interest, up and down the eastern seaboard, and, like I said, the good news is that we will have an entire session devoted to offshore wind tomorrow, and so please remember any and all of these questions that I was not able to answer very effectively right now, because we will totally be able to readdress them tomorrow, when we have BOEM, as well as the lessees, here, and so that should be a really exciting session. Paula.

MS. KEENER: I have a technical question, for my own understanding, and so the shared cable concept -- That is different from what they refer to as backboning?

MS. COOKSEY: (Ms. Cooksey's answer is not audible on the recording.)

MS. KEENER: Okay. All right. Thanks.

MS. COOKSEY: Roger.

MR. PUGLIESE: It's a shame, and they actually had considered this a long time ago, and the problem was that there wasn't as much movement in the Northeast, because they were going to create an entire hub system, and that's where you really could benefit, because you put a hub, and then you could have two or three farms come to that hub and then come in, and so, hopefully, as we're kind of in the beginnings of our thing, that those can be maybe realized more likely in our area, but I'm sure they're going to probably figure something out, given especially how much more offshore they're going to do than the Northeast, which is like doubling the area, and so they're going to have to do that. Otherwise, they're going to have a ridiculous amount, but it's something that was in the background, and it would have been nice to have had that in place before you started going down, but I think we're still in a good situation to make those types of things happen, and so hopefully we get those discussions tomorrow.

MS. COOKSEY: Okay. I think we are ready to move on to the NOAA Fisheries South Atlantic Climate Vulnerability Assessment. Hang on. Wilson.

DR. LANEY: Let me jump back for a second. I haven't talked to Anne about this, or you, either one, but do we have any update on the Olivine sand proposal? I know there were proposals, I guess, because they were proposing one for South Carolina, and they proposed one for off of Duck in North Carolina.

MS. COOKSEY: They were, and it looks like Anne has an update for us on it.

MS. DEATON: My update is it has gone silent.

MS. COOKSEY: That's my official update, and I actually had that in writing, that they have stepped back to reassess information, and so I think it will be a little while before we hear more about the Olivine sand.

DR. LANEY: Just to follow-up, the concern that I had, about the one off of Duck in particular, was that it was located very close to an Atlantic sturgeon hotspot that we had discovered during the cooperative winter tagging cruise, and then, just to update everybody else, especially Simen, my colleague, Roger Rulifson, is on the Spiny Dogfish AP for either the Mid-Atlantic or New England, or maybe both, and I forget, and I had a conversation with him yesterday about those data, which NMFS has, and very graciously used to produce a very nice GIS map, and some of you may remember the Lisa Wickliffe et al. report that came out in 2019 as a NOAA Technical Memorandum, and that map is on page 126, if anyone wants to see where the Atlantic sturgeon hotspots are that we discovered during the course of the cruise time series, and so he was going to remind them that they have those data, and they were meeting because they're trying to reduce bycatch, Simen, in the monkfish and spiny dogfish offshore gillnet fisheries, I think, and so I just wanted to let everybody know that.

MS. COOKSEY: Okay. Thank you. Okay. Climate Vulnerability Assessment, and I'm going to pass this over to Roger.

MR. PUGLIESE: Well, one of the things that we were trying to do is to push the issue to try to see if we could get a finalized version presented to the council, and to our advisory panel directly, and the reality is that it's still in publication review, and so we wanted to at least get the most recent updated information we had provided to the panel, and this will also go, you know, backward to the council, in terms of the report, but what I do have is the last review that Mike Burton did for the council, back in I think it was September of 2021, and the reality is that none of the real details of this have significantly changed, and so we just need to get it finalized.

Hopefully it will happen soon, because, as you've had reports before, we're working on that east coast climate scenario planning effort, and it would be nice to sure have the final version of our CVA as we move into really looking at that. What I wanted to do is at least touch on some highlights here, just very quickly, to put it into perspective, and, as we move into some of these discussions later, I think it's going to be really important to understand the scope of what this information really implies.

The vulnerability analysis is really a tool to determine the likelihood that a species productivity, abundance, or distribution would be affected by changing climate, and they were identified as a priority in NOAA's climate science strategy back in 2015, and they also are identified as a priority

under the South Atlantic Climate Science Regional Action Plan and the EBFM Implementation Plan for Ecosystem-Based Fisheries Management.

The way these were done, they were used widely in terrestrial systems in the past, and some of the examples have been used in marine systems, and they use currently-existing knowledge and expert opinion to build that, what we understand are the vulnerabilities, and the quantitative data that's available, any qualitative data -- Or the other way around. Qualitative data where real data is lacking.

I'm not going to get into the actual steps on this, but what I did want to do is get directly to this, and this is the most significant thing, and these are the potential for species distribution change by low, moderate, high, and very high, and I will get to the next one that kinds of summarizes this, but, if you begin to look in here, some of the key areas are both some of the deepwater species, like rock shrimp or golden crab, but then even some other species, like spiny lobster and then eastern oyster, which is good to know, considering the foundational habitat that is, but then you move into moderate, and you're looking at -- I think I determined about eleven, or more, species in the snapper grouper complex, and then some of the other lower-trophic-level species, like different ones that are provided in some of the shrimp, like pink and brown, as being potentially impacted.

Then, as you move into the higher one, and it's interesting that, at the higher, we're actually getting even more species, and so that's even more significant numbers of snapper grouper species and then other pelagic species, like king mackerel and bluefish, and a number of those species right there are actually ones that are probably in tougher shape too, and then dolphin is at very high, and so the reality is the key areas show that the most impacting factors are sea surface temperature, salinity, and ocean acidification. No surprise, and these are all ones that have been the foundation for a lot of the discussions that we're having on the climate vulnerability, or the climate scenario planning, that is driving some of the species we know to actually having some distribution shifts.

Twenty-two species are very high, and they include anadromous, invertebrates, and deepwater demersals. High vulnerability includes a lot of the coastal and reef fishes, and there are twenty-four species included there, and then twenty-five are in the moderate, and those can include, as I mentioned before, some of the pelagics, forage fish, coastal, and reef fishes, and that's pretty tough, when you look at that, because those are some -- That's kind of foundational components of a lot of our managed species and the prey that they depend on.

The majority have a very high or high potential for change, as you saw, and, I mean, that's the bulk, is on the other side of this, and the CVA actually is intended to be conducted iteratively, and it can be updated in future years, and I think that's going to be important, to be able to have the capabilities to monitor all these factors that are affecting it, as well as the species that are affected, so that can feed into things such as we're talking about, and how do we deal with when these species shift and move into different regions, also, and then how do we deal -- From this perspective, how do we deal with the potential of changing habitats too, and it's not just the fish, and it's the habitats, the prey, and we're seeing a lot of changes around.

If you look to one of the Northeast examples on cod, they did an amazing connection between the distribution of the benthics and associated habitats and the species themselves, and they were all moving together, and so, when you have that kind of verification, then you really understand that

you have really significant changes coming up. There's a lot more in the Northeast right now than the Mid and the South Atlantic, but we have, you know, the potential for issues that may be even more significant here, if they really are looking at current shifts, anything that's going to shift around say the Gulf Stream, or, in our case, say the Charleston Gyre, which is distributing things like gag up through the entire section, and we could see some pretty significant changes pretty rapidly with some of those different types of things.

Those are what I wanted to at least touch on, and it includes the detailed information beyond the -- It's not a 300-page presentation, and the first couple of pages are just the summary of the overall CVA, and then the other ones got into some of the species information and then which species -- You know, what some of those different parameters were that were used to make those determinations on where they fell in this spectrum, from low to very high in the area, but that's what we have.

If I didn't mention it, Mike Burton actually had a crown break, and so he was basically buried with that, and so he can't do it, but he will follow-up, to make sure that we have the experts that can provide us some input on how some of this may affect our managed species and habitats that are impacted, that crosswalk between climate change and where habitats are going to be potentially shifting, and that's basically what I wanted, unless you had any other thoughts, and I think we were hoping that everything was going to be final, so that we could have it finalized and brought forward to the council, and hopefully -- We have the Council Coordinating meeting coming up soon, and, hopefully, when they get into discussions of the climate scenario planning, they emphasize the need to wrap this up and make sure that it's available for the council to move forward.

MS. COOKSEY: All right, and so that's what I was going to follow-up on, and so, obviously, we had included this as an agenda item, because we were hoping to have a representative here and showcase a complete product, with resources that we would then be able to incorporate into our five-year EFH review, but, unfortunately, that is not what we have, and so, you know, just hopefully we can carry the message forward to the next meeting that, you know, this is really critical.

As Roger just highlighted, in reviewing an older presentation that had previously been provided to us, we know many of the federally-managed species in the Southeast are vulnerable to climate change, and we really need this information to incorporate into our essential fish habitat information, and so hopefully that will be something that we will have more info in future meetings. Yes.

MR. WEBB: Roger, I know we've been working on this for a while, but I can't remember. When we talk about distribution change, does it include only expansion of the distribution, or is it, you know, vacating certain areas where they're commonly found now, and they're not going to be found there anymore, but they're going to be found in different areas, or are they potentially losing any acceptable habitat at all? Is there differentiations made in this study, in the presentation?

MR. PUGLIESE: I think the intent was to cover kind of the breadth of those different types of changes, because it's not going to be all one way, and there's that discussion that always -- That the temperature is going up, and so all the fish are going to move north, and that isn't necessarily the case, in some aspects, and I remember, a number of years ago, when you had increased

upwelling events off the east coast of Florida, and you actually had some reversal, and I think some of the black sea bass were actually moving south, because they were getting to the colder water, and maybe currents, and so I think it has been very careful not to just say it's an expansion north, or something like that, because, also, with this information, we have to understand, and differentiate, between a climate-driven expansion and population shifts, expansion of range, compression of range, and those types of things need to be understood too and how they fall into this, and how they connect, and so, yes, I think it's really intended to kind of be able to look at the ones --

Try to identify which most likely will be because of climate shifts, but also understand how they may change, and so it really is going to be critical to understand those driving factors and then have that foundational information, so that you can know, really, if it means that you're seeing just an expansion north, or an expansion offshore. The other ones that you're doing, you're not only offshore, north and south, but east and west, into deeper waters and different things like that, and so I think the intent is to try to capture an understanding of really how the -- How they may do that as you move forward, or as you apply this, I think, into the future. They may be vulnerable because of all those aspects, but what really happens, relative to the actual population, is different.

MR. WEBB: Does the impact of management successes play into this as well? For instance, and this is anecdotal, but, in the last couple of years in the Keys, almost all the guys are complaining about the predatory sharks interfering with fishing, both for pelagic fish off of the humps, and especially for reef fish. This year, during the mutton season, which was March in the Keys, they weren't able to get a fish to the boat, through the sharks, and so you talk about population expansion, and does the impact, the potential impact, of management successes play into that at all?

MR. PUGLIESE: I think, for this specifically, I'm not sure that you could necessarily say that it's driving it, and it's really trying to capture the vulnerabilities based on the environmental factors, really on climate change, and so, if you're looking at population increases or decreases, or predation, I think those have to be considered as you apply this, and let me put it that way, and I think that's the way you have to look at it, is you might get this signal that's saying, yes, this is vulnerable, and you may have these potentials, but then, if you start actually getting into the population parameters, you know, is this just a change here, and are we seeing significant predation, at whatever stage of life you are, because I think those are other considerations.

I remember one of the -- It's so complicated, in some aspects, and I'm not sure it's as straightforward, but one of the first iterations we did on Ecopath with Ecosim is we pumped in -- That was one of the questions, was on the shark aspects, and it actually was kind of a reversed type of thing, and it actually was not showing as big of -- But that was done on a broad sense here, and I think, you know, that whole issue of localized depletions and all these things, and, you know, with learned behavior and feeding, and there's a lot going on, to understand how you weave those together to really see what population impacts you may have, and that's going to be something that, hopefully, as you go beyond the traditional stock assessments, you can begin to look at integration of environmental information, but maybe even, you know, refined information on predation on other life stages or whatever. I think we're going to have tools, as we move into the future, to begin to look at some of those, I think, but this, I think, is really focused on at least looking at the climate issues and how that drives the system right now.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Cindy, and so I was on the team, thanks to Roger recruiting me, and other people that were on the climate vulnerability assessment team, and could you flip back to the slide, Roger, that shows the columns with the species in there, and this is somewhat for Simen's benefit, although you already noted that the anadromous species, or some of them anyway, fall into the high vulnerability category, especially striped bass, and that one gives you, David, a good example of a species that has both shifted north and offshore. I'm talking about the Atlantic migratory stock of striped bass, which used to provide a substantial fishery off the coast of North Carolina, and now, Anne or Casey, correct me, but North Carolina hasn't landed a striped bass, from the ocean, since 2011.

They have commercial allocations for haul seine, gillnet, and trawl, and they haven't landed any, because the fish simply moved north, and much further offshore, which, in some respects, is good, if you're trying to protect your spawning stock, because all those big females are now hanging out in the EEZ, where fishing for striped bass is prohibited, but Jim Price, who was a charter captain from the Maryland eastern shore, and very much into striped bass food habitats and population dynamics and localized depletion of Atlantic menhaden and all that sort of thing, used to have late-night discussions with me about, okay, so is it temperature, or is it prey, and specifically Atlantic menhaden, and, unfortunately, we didn't have any Atlantic menhaden distribution data from the ocean, for the most part, and we just had striped bass distribution data, but the temperature is definitely going up.

You're getting warmer winters, and, you know, who knows? As Roger pointed out, as the models get more and more sophisticated, and ASMFC, in particular, is looking at multispecies modeling now, and they did take a hard look at weakfish, a number of years ago, and tried to plug in some environmental factors like temperature, and so who knows?

The other one that I have more recent experience with is gray triggerfish. When we did the gray triggerfish SEDAR 82 data workshop, we've looked at spatiotemporal factors, and we also looked at ecosystem factors, and I have worked with both of those ad hoc workgroups, to try and compile everything we knew about gray triggerfish, and one of the things we discovered was that there are more gray triggerfish being caught north of North Carolina.

Now, their historical range, if you go back and look at the records and everything, they have been captured as far north as Nova Scotia, you know, historically, for a very long time, and the thinking there is that the juveniles, which are associated with sargassum -- You know, once they reach the size at where they start to drop out and become benthic, they get transported north in the Gulf Stream, in all likelihood, and so it's not unusual to see those smaller fish north of North Carolina, but what's interesting is there are now targeted recreational fisheries in Virginia and New Jersey, in particular, and also in Maryland, and most of those states maintain these certification programs, you know, where, if you catch a large fish of a species, you get a certificate from the state for that, for reporting it, and so there are some considerable-sized triggerfish, which Nikolai Klibansky, who is the lead analyst for that assessment, tells me are probably in the seven-year-old range, because of how big they are, that are being caught and have certificates issued for them.

The other very interesting thing that we discovered, during the course of doing that data workshop, is that Virginia has been -- They have this angler gamefish tagging program, and they've been

tagging gray triggerfish since 2021, and have tagged almost 2,000 gray triggerfish north of North Carolina, and so, in my discussions with Erik Williams and Nikolai at the Southeast Fisheries Science Center, they say, okay, yes, if you squint real hard at the data, Wilson, you might say that they may be moving north, but we don't have a sufficiently long time series, with enough data in it, to develop any sort of an index that would enable us maybe to say, with more certainty, that that species might be moving north.

Nikolai had this hypothesis that, okay, yes, you're catching adults in Virginia waters, and in New Jersey waters, but those fish probably just move back, you know, when it gets cold in the wintertime, but, if you look at the recaps from that Virginia tagging program, there has only been two fish that were captured back in North Carolina waters, off of Oregon Inlet, and so two of them that we know were tagged in Virginia that moved back to North Carolina, and the vast majority of the fish that were recaptured have all been not too far away from where they were tagged in the first place.

So, as Roger said, it's complicated. You know, you can't just say, you know, yes, the water is getting warmer, and so all these species are moving north, but they move offshore too, as he pointed out, and so, if we knew, with certainty, what their thermal preference was, then we would be, you know, a lot more able, maybe, to predict, you know, what their distribution will be, and I know there are some people that are working on those sorts of models, and so sorry to take so long in that explanation, but I did talk to Mike, not too long ago, and the report is nearing completion, and my understanding is that we are going to publish it as a paper, like they did for the Northeast Climate Vulnerability Assessment, as well, and so, hopefully, before too long, it will come out. Needless to say, the pandemic slowed things down a bit.

MS. COOKSEY: Well, that's excellent news, about it coming out as a peer-reviewed publication, and I think the discussion highlights just how critical this information is. Paula.

MS. KEENER: As I'm thinking about the revision of the renewable energy policy, was any -- Particularly in North Carolina, is any of this information, for what was developed in North Carolina, being applied? I mean, it is so incredibly complicated, but it almost -- It seems like you can't ignore it, and so is any of the climate variability assessment being included in the analysis, or the policy, for renewable energy?

DR. LANEY: For striped bass in particular, and, again, Casey and Anne know a lot about that one, but, as far as I know, the current striped bass assessment model doesn't factor in the temperature, you know, any environmental differences, and we looked hard for gray triggerfish, when we did the spatiotemporal and ecosystem components of that. During the data workshop, we looked hard to find any variable that we could tie directly back to a change in -- To a population response in the species.

That's what is the hard part, you know, and you can't -- Ideally, for the modelers, I think they would like to have environmental variables that we could show them produce a cause and effect, and so, for striped bass, we don't have that yet. Now, striped bass is included in that multispecies model that ASMFC is working on, and I don't know whether they're putting environmental variables into that model yet or not, and it's been a while since I've looked at it, and so somebody else would have to answer that question.

MS. COOKSEY: Okay. Well, thank you, everyone, for that discussion, and, again, I think the discussion really highlighted that we are all looking forward to this report being finalized and then hopefully being able to bring in some experts associated with the report to meet with us, potentially in the fall, to help us understand what this report, and assessment, means for habitat within our area of interest, and so I am now going to have us move into the meat of this afternoon's session, for hopefully a lively discussion about the essential fish habitat five-year review, and so I am going to kick it off with just kind of bringing everyone to the same place, with a brief reminder of why we're doing this, and why this matters.

EFH regulations require the fisheries management councils describe, identify, and map EFH for all fisheries management unit species, which is one of the ten mandatory contents of the fisheries management plans, and so EFH designation is one of the mandatory contents of a fisheries management plan. It also sets forth that there is a regulatory requirement for councils and NFMS to periodically review all EFH information at least once every five years, as a part of the fisheries management plans. Councils are encouraged to outline the procedures that they will follow to review and update information, and the review should include evaluating scientific literature and reports and seek information and previously-unavailable data.

Absent this regulatory direction, there are no agency-wide procedures, or guidance, to further refine what constitutes a five-year review. Recognizing that regional fisheries priorities vary among the regions across the nations, the councils and NMFS Regional Offices have developed individual approaches to satisfy the regulatory requirement to review and update information.

Within the Southeast, the councils' use has differed, using different approaches to review and update their EFH information, which are typically transmitted to the Habitat Conservation Division, which in turn provide written comments and recommendations back to the councils specific to each of the mandatory contents of the fisheries management plan.

We are now at a period in time where the next five-year plan, or five-year review, is due in 2024, and so we're now in the spring of 2023, and so we really wanted to dig into it now, so that it can be completed by hopefully early 2024. Previous iterations of this review have included the FEP II, which was completed in 2018. Prior to that, we considered the EFH review to be the development of the EFH users guide, and so we've kind of had a couple of different iterations of what it means to conduct the EFH review, but, to-date, FEP II and the EFH users guide have constituted the bulk of what had been accomplished.

We initially had hoped to conduct a very intensive review process this year, to do something that we had not done for the Southeast for a while, of really going in and identifying species experts and conducting in-depth life history reviews that we could then incorporate into the EFH review process, but what has become apparent, in the last few months, is that we are seeing a significant shortage in resources and staffing that would allow us to complete that.

We have also just seen that we do not have the climate vulnerability assessment report finalized, which Roger and I had engaged in discussions that we were hoping to make incorporation of climate-related information and their effects on habitat and prey species, an important component of that five-year review, and so, when I talk about resources, you know, we have that kind of underlying data that has just not reached the point yet of being accessible for our use in a five-year review.

In addition, we have the happy-for-Roger and sad-for-the-rest-of-us news of his upcoming retirement, later this year, and so we're looking at being in a transitional period, and I am also currently on detail to NMFS Headquarters, where I'm serving as an analyst for them, and so my time is incredibly limited right now as well to devote, and so kind of all of these factors have come together, and I am really hoping that, instead of doing something very broad and extensive, we can refocus down onto a five-year review that is achievable, given the resources and the staffing and the time commitments that we have available, and that will still provide a great benefit to the habitats that the council identifies in their fisheries management plans.

Before I kind of get into the next steps, and go a little bit more into the user's guide and the contents of the fisheries management plan, I wanted to open it up for any thoughts or comments from folks. Wilson.

DR. LANEY: Okay. Thoughts or comments, and one thought is that, at least as far as the offshore habitat go, there's been a whole lot of mapping that has been done, and I will look to Roger to say whether or not any of that information has been compiled into a single database anywhere that we could access and update, as far as the offshore part, and I'm thinking hardbottom, and Anne can certainly speak to North Carolina has mapped their submerged aquatic vegetation. The Albemarle-Pamlico National Estuary Partnership has mapped that, and so they have that information, and that's relatively new, and North Carolina updated their coastal habitat protection plan, with a CHPP-LET, which is the smaller version, a more concise version, and so we have that for North Carolina. Then the other thing we have, or we will have, and I will put Simen on the spot a little bit, and have you talked to Toni Kerns yet about the fish habitats of concern document?

MR. KAALSTAD: Yes, and we, very recently, discussed it, and it's pretty near its completion, and I've sort of given it a few glances, since I've started, but we haven't really committed to any sort of finalization, but it is, I would say, well over 60 to 70 percent, and so that's sort of the next step for us.

DR. LANEY: Yes, I would concur, and the -- What that is, for those of you who don't know, and Dr. Wilber was instrumental in us basically changing terminology, and it uses the same definition as the National Marine Fisheries Service's definitions for habitat areas of particular concern, and we just changed it, to try and avoid confusion, and so that document is being produced for the species that are managed by the Atlantic States Marine Fisheries Commission.

It was presented to the ISFMP, the Interstate Fisheries Management Program, Policy Board at their annual meeting in New Jersey, back in November, and they had some questions, in particular about the Atlantic sturgeon portion of it, that they were supposed to provide to Toni, and then we were supposed to make sure those got answered, to the satisfaction of the commissioners who asked the questions, and those came from North Carolina, actually, and Chris Batsavage asked a question or two, and Jim Gilmore from New York, and Lynn Fegley from Maryland also asked questions, and they were -- I would consider them affirming questions, and they were questions like, hey, we've got some more recent literature that we think you could cite in the Atlantic sturgeon account, things like that, and so it's just cleanup, and I think Kate Wilke, maybe, Simen, was going to do a little bit more work on maybe American shad, and I'm not sure, and maybe Atlantic croaker too, maybe, and I'm not sure, but you're right that it's probably better than 70 percent close to completion, and so hopefully that will wrap up.

Then, once it does, I think that will be a very useful document as well, as we talk about essential fish habitat. Those species that are jointly managed by the commissions and the councils all have EFH designations, but the ASMFC ones are a little different, and so -- But that's another thing that I know that should be finished in time enough for us to use and cite it, hopefully.

MR. PUGLIESE: One thing, and, of course, the distributional information is support for the wording and definitions and refined, as we did in the past, and we have a lot of those refined through our collaboration with FWRI, as the information comes from the state, and, like you said, new mapping for SAV, and we would update those layers, once we did get those from the states.

Now, that's going to take -- Right now, we do not have any charge to do that, and that's one of the things that I'm going to touch on when we get into the tools discussion, about the council tools, because that EFH and HAPC distribution web service has not been updated in a while, and the way that it used to be is it used to just bring in everything, and so that would be something that would almost be routine to move forward and add that in, and it didn't necessarily have to be part of the overall review, but I think it's important, and I think that's where I have always highlighted how different say our system is, that we have, versus some of the other online systems, and they're not tied to necessarily where, in individual states, they're using a lot of -- In a lot of places, they're using just kind of a homogenized combination of all the distribution and putting it in standard formats, which you lose some of that really refined, detailed characteristics.

We've been really careful, as we've created those shapefiles, to put them online as a representation, and it's to use the most recent, and so you may have some differences between the states, but those are the most updated information on that, and that's one of the reasons we had, in the FEP dashboard, links to state information also, so that that detailed descriptions and distributions could also be there.

I think the reality is that we are going to be looking at updating and refining those contracts, and that can be cast as doing that, and it's not only the areas that you've discussed, and we have already seen the extensive distribution work done in the deepwater areas, and I think that also is something that is actually online and can be bridged, to make sure that we have a connection to that most updated information.

I think that will be ongoing, as part of this, and to be just highlighted as that, but I think it also is going to take maybe, you know, connections, so that we can have a reach-out to go to the states and get that information to update, from these various -- Either the individual surveys or some of the documents that are being prepared, and so I think that can be -- We can maybe have some of those, but we'll see what the timing is, relative to our contracting for what we're doing to do for that.

The other one, we're actually going to get some highlight on that more, and you've already had fairly detailed presentations by the deep-sea coral and the ocean exploration, Office of Ocean Exploration, on the deep-sea coral mapping work that's been done in the past, and moving forward on conservation, and this group has already endorsed beginning to look at it, and so there's going to be a follow-up webinar between this group and the Coral AP, to have further discussions on that, later this year, after probably, into June or July or whatever, and so that's some place that we can look at the distributional information they have and where you can access it, and so we'll make

sure that that can be added and expanded and refined and tapped-in, and so I think that's in the queue, too. I think there's some caveats with those that are going to be tied to some of the other work the council has to do.

MS. COOKSEY: Roger, can you scroll down to the Subpart J on the document there, because I think that will kind of help form this discussion, and so Subpart J of Magnuson-Stevens outlines the mandatory contents of the fisheries management plans, and, under description and identification of EFH, we see that we need an overview, habitat information by life stage, analysis of habitat information, EFH determination, and mapping requirements.

I think what Wilson was just talking about, and, you know, this new mapping are excellent ways of providing clarification and tools that are important to the consultation process under these mapping requirements, but, in essence, the EFH determinations have already declared that hardbottom habitat is EFH. SAV is EFH, and so the clarification is just providing mapping for where exactly those habitats occur, which is really important, and an incredible tool, as Roger was indicating, for this purpose.

I just kind of wanted to highlight the difference between identifying where the habitats are that we've already identified as EFH versus, one, determining what we already know, which is a lot of our EFH is determined by presence-absence data, and so looking for any information that highlights areas that are EFH because they are needed for specific stages of reproduction, or nursery habitat, and, you know, that's where we get into further refinement of EFH, beyond the presence-absence stage, which I think was one of the things that we had potentially hoped to do, by doing a deep dive into new literature.

Excluding not being able to do that right now, for the reasons I mentioned earlier, there are still places within this that we can make a significant difference and improvement, and I believe that is through the process of clarifications, under the user's guide. Now, the user's guide was a document that Pace Wilber and Roger worked on, originally in 2015, I think it was, 2015, and it's gone through a couple of different review stages, and modifications, since 2015, both in 2017 and then in 2021, and the 2021 addition of the user's guide is what is currently available online, and it is the document that myself, and my colleagues, other biologists within the Habitat Conservation Division, provide to applicants that are seeking permits throughout the Southeast all the time.

It is an incredible tool for people that are not in the regulatory world, or the fisheries management world, to be able to digest the vast amount of information that is included in the council's fisheries management plans, and so, in essence, that is what the user guide provides, and, in the review stages that have happened previously, in 2017 and 2021, there were opportunities to provide clarifications, and so what I am proposing, and we can go through the user guide in a little bit more detail, for folks to think about what this would mean, is, in discussions that I've had with other parts of management within the Habitat Conservation Division, we have identified two areas of clarifications that would be incredibly beneficial to ongoing consultations within the Southeast that we've all agreed would constitute a significant, and achievable, five-year review, so that we can, you know, have a success for the council, for them to have successfully completed the review process. Are there any questions before I kind of take us on a deep dive into the user's guide?

DR. LANEY: Just one, Madam Chairman, and that is I know you said that we don't have the capacity to do a deep dive into the full literature, you know, for all of the species that the council

has designated EFH for, but I would presume, if those of us who are on the panel are aware of pertinent literature, it would be appropriate to provide that, you know, during the review, and at least cite it, maybe, in an update, to the extent that additional information may have been uncovered, through especially peer-reviewed literature, but there is some gray literature out there too that -- Like, for example, the 2019 report that I referenced earlier that provides habitat information by life stage, and so I'm assuming that would be appropriate, right?

MS. COOKSEY: I don't necessarily want to go one way or the other, like yes or no, at this time, in that not only does it need to be provided, but we need someone to actually then ingest it in a manner into the document, and it's a process, because we need to assess is the new information changing any of the determinations that have previously been made in the fisheries management plans, and then, if that information is changing, then we need to determine how we want to go about updating the fisheries management plan, or is it just a clarification within the user's guide, and so, I mean, it was definitely like a great thing to bring forward, but it's not just bringing it forward, and then it's providing, potentially, a subcommittee to work on how we integrate that into these documents. Does that make sense?

DR. LANEY: Yes, I think so. We can talk more about it offline, maybe.

MS. COOKSEY: Absolutely.

DR. LANEY: You know, it just seems to me that, if we -- If anybody on the AP is aware of new information that would not necessarily change a previous designation, but maybe reinforce a previous designation, I think that would be something useful, and I think NMFS would certainly applaud that being included in the five-year update.

MS. COOKSEY: Anne.

MS. DEATON: One thing that I was going to add, just thinking about five years ago, I guess, when FEP II was done, and is that -- If you get new information, you want it to be balanced across the South Atlantic, because we found that participation varied, based on time restrictions and all, and so, if it was loaded up with new North Carolina information, but nothing on Florida, it gives sort of a false picture of importance and value and everything, and so what you just described, Wilson, is a big additional task. Then that information gets outdated, by the time the next one rolls around, and so I think you need to be -- Somebody should compile all that, and keep it, track it, but I think that's a whole other level for this effort, to do it right.

MS. COOKSEY: I think that Anne makes a great point, that it does need to be comprehensive for our entire area, inclusive of Florida, Georgia, South Carolina, and North Carolina, so that it's not balanced to one state or another. Go ahead.

DR. LANEY: Well, again, to that point, and I will just refer back to the fish habitat of concern document, which is much more recently produced, and it does look comprehensively across the range of all the species that are included in that document, and so, you know, to the extent we have resources like that, if we can take advantage of them, that would be great.

MS. COOKSEY: Yes, I agree, and, I mean, it's just a matter of, you know, figuring out how best to bring it in.

MR. PUGLIESE: I think, ultimately, what you're really looking at is, into the future, a full-blown update of the entire ecosystem plan, and all those individual sections, and I think that's going to be a big lift. However, the way this review could -- You could have those functional components that we're talking about, and maybe provide that additional information that will support the next generation that you do, and that was one of the reasons that we had created the dashboard before, was because one of the things that we did is we pointed to where any of those new things were done at the state or regional level, so we would have links to say that species of concern document, or we would have links to the state mapping and state descriptions also, and so I think there is some additional way to add that in, more immediately, by bringing some of that back online and then add those new, specific details at those levels, with the intent then to, when a comprehensive capability is there, to then add those all in and be able to really, you know, take it to the next level.

MS. COOKSEY: Roger, you actually bring up a great point, because the FEP II did a lot of what you are saying, Wilson, and it was a fabulous tool to have online, but it's not currently available online, and is that correct, Roger?

MR. PUGLIESE: We're getting ready to really refine that habitat and ecosystem component, so that any of these key documents are re-available, and then maybe some of these linkage things, that were highlighted in the dashboard, are back online, and so, yes some of those -- Right now, it's not, but I think it's because we were going through that iteration of trying to get the website operational, and then trying to -- We've been working it forward, as we're going on these things, but I think we do have to get as much of what we've had before, and then those links back to where some of the newer information may be available, and so it does set the stage for that bigger lift into the future on that.

I think it's also going to be critical to highlight the research that we need to do to get to some of these other levels, and we'll have some of those discussions when we get into that discussion at the end of the meeting, on, you know, needs that may help us get to the next iteration levels of beyond presence-absence and different things like that.

I think all of those are going to be important, and we may be able to get further ahead by just getting some of that back up, you know, online, and then set the stage for that in the future, and it doesn't have to happen all at one time, and maybe that's something that, as we move further into the future, you all can do incremental parts of those.

Now, when we did those lists before, it took a lot of work from the state, and from -- In the first iteration of that, from NMFS, because they really provided an amazing amount of input on those species expertise, and habitat expertise, and we had a lot closer ties with Beaufort Lab, when they were all under one umbrella for NOAA, and the separation really has, over time, created a lot of -- Kind of separation of all the habitats experts out of National Marine Fisheries Service, which created, you know, some issues, but not insurmountable, and I think that needs to be re-committed.

If there's all this commitment on climate change, and everything else from NOAA, all the way down the chain, and there needs to be that, so that we can fill that in and know the baseline, and the most recent information, and, you know, what we're going to have to understand, and it goes all the way back to we do need to know habitat is going to change too, and we need the information that's going to give us the details on how species are utilized and how they're going to change,

and so all of these kinds of things I think can factor into the process that Cindy is saying about moving forward with this strategic and linking back in more of those types of documents and iterations, so that it sets the stage for more refined information under a future iteration of the ecosystem plan.

MS. COOKSEY: Right, and so, I mean, I think what this discussion just highlighted is yet another resource that we don't currently have available to us, the FEP II, online, and that would make sense, to update a lot of that information too, and so, again, trying to focus on something that is achievable in this timeframe, given the resources that we have available to us, but that doesn't stop us from compiling information that we can add, in an iterative fashion, into this other resource, once it's back up online, I would think. Anne.

MS. DEATON: I mean, it may not be online, but it exists, and so somebody could circulate it, if they wanted to, and, I mean, it's a finished document.

MR. PUGLIESE: Yes, and we don't have to focus on the fact that it's not online, and I think that's kind of a neither here or -- I mean, it's going to be back on and available and different things, and I think it's both the FEP itself, but also I think some of those things that link back to the state and regional things, so that we can add in this other information, and then, you know, that's what I was saying, is that what we get to is those habitat descriptions that are encompassed under there, and there needs to be teams created to not only look at like species discussions that we were originally talking about here, but to get into that next generation of what those descriptions are, and I think that's going to take a full lift into the future.

MS. COOKSEY: Definitely getting the state participation in there is so critical. Wilson. Sam.

MR. YOUNG: Going back to the -- The key criteria was to make it achievable, right?

MS. COOKSEY: Yes.

MR. YOUNG: Then, secondly, I had down, you know, the habitat mapping being incomplete or complete.

MS. COOKSEY: Well, habitat mapping, I think, is an ongoing process.

MR. YOUNG: Right, and so, as more uncovers, it's gets folded in.

MS. COOKSEY: Yes.

MR. YOUNG: Over time, and so, for the sake of this five-year exercise, are we -- Which comes first, the mapping or the smaller achievable footprint?

MS. COOKSEY: Well, I don't know that they're mutually exclusive.

MR. YOUNG: So do we have enough data mapped to make it achievable on a smaller footprint?

MS. COOKSEY: In the conversations that I've had with NOAA Fisheries about what they have identified, there are two components, and one is a mapping component and one is a clarification

for the user's guide, and the mapping component is an issue that has routinely come up in consultations throughout the region, is EFH -- One of our EFH designations is tidal freshwater habitats, and where does the tidal freshwater habitat end, and where, in our coastal rivers, is that line?

This is a regular issue for projects that are seeking a permit throughout the states, and I am looking at my state partners that are present, and they are nodding their heads, yes, that this is a huge issue, and so what we have discussed is being able to work with the states, potentially forming a subcommittee, that we could work with the states and go in and identify either a bridge, or a prominent, easily-identifiable landmark, in all of our coastal rivers, that marks the extent that we consider for tidal freshwater habitat as a component of the EFH five-year review, which would be a pretty significant undertaking, but I know some of the states may already have that. Anne.

MS. DEATON: I am going to defer to Casey to tell you about -- We had a big effort on this, and it was more about jurisdiction, because we don't have a combined fresh and marine -- You know, we have two agencies, but, Casey, would you tell them about your conversations with the NOAA people?

MS. KNIGHT: Mostly, like Anne is saying, it was a lot about jurisdiction, at the time, but looking at the same question of where freshwater ends and saltwater starts, and we really went through a couple of exercises, kind of looking at different things on the map, and we looked at the physiological regions, more of the geography of the regions, the fall lines, and then it was Mo Nelson, who is retired from the geography branch at NOAA, that provided me with the head-of-tides for North Carolina, and I think it also included South Carolina and Georgia as well, but that was very useful too, and it was kind of neat to see how all three of those kind of line up together, in a lot of ways, and so, yes, we could definitely help provide those GIS layers, and using those points of head-of-tide -- I think what you're saying is identifying that marker

MS. COOKSEY: Yes, and head-of-tide is what we are most interested in.

MS. KNIGHT: Yes, and so I've got that GIS layer, somewhere, that I can re-uncover to share, and then we could use that as a starting point, to identify those easily-identifiable locations.

MS. COOKSEY: I mean, that would be an incredible service to add into these designations that I think would, you know, facilitate consultations up and down the coast, especially, you know, when I think about all the interactions that I have with the DOTs, and they're constantly looking for a quick and easy way to say do I need to have an EFH consultation here, and so, again, from the perspective of the user's guide, that would be a huge, you know, one-mapping requirement, and we're determining where the EFH extends to, as well as, you know, adding a tool to the toolbox that we have online. I had kind of heard that North Carolina had done that, and could potentially serve as an example for the other states.

MS. KNIGHT: Well, some of the people using it might not like where some of those heads-of-tides are. Especially in North Carolina, they go pretty far inland.

MS. COOKSEY: Right, and they go very far inland, farther than most people think, because they think of saltwater and not the head-of-tide, and, you know, those tidal palustrine habitats are so important for our shrimp, which is why they matter, and so, I mean, not only are we meeting the

requirements of the five-year review, but we could actually, you know, make a difference in helping to protect those habitats, by bringing them under the consultation umbrella to avoid and minimize adverse impacts. Wilson.

DR. LANEY: Thank you. Yes, I think that's a great idea, and, also, this discussion has prompted me to recall another product that the Beaufort Lab put out, which is the Southeast Habitat Assessment, and am I getting that name right, Roger? That is final, right, the one that Todd Kellison usually updates us on, and so that's another document that is mostly for the marine realm that is finalized, if I remembering correctly, and I think I have a copy of it, and so that would be another useful thing.

I am hearing, and, Cindy, correct me if I'm mistaken, but I'm sort of hearing three products that we're talking about, and one would be like an FEP II update, potentially, and another would be to update the guide, the guidance document, the EFH guidance document, and then is there a separate -- I mean, do we have to produce -- Do we, the council, have to produce a separate five-year EFH update document? Is that a separate thing, or would updating the guidance document, and the FEP II document, constitute an appropriate response to the five-year update?

MS. COOKSEY: Right, and so our conversations that we have had with Fisheries is that, again, throughout the country, different councils have done their reviews in different ways, and so each council gets to decide what is a good review, and, of course, we also have NMFS working in partnership in that process, because, you know, we're all trying to work together in this. It's completing the clarifications and updates, and then, if we can add into the FEP II, that's a great additional component, and, of course, we would need to submit everything to the committee, the Habitat Committee, and then to the council, but that would, in essence, constitute the review.

DR. LANEY: Okay, and, since Trish and Mel are both here, I will put them on the spot and ask them if they have particular expectations, as a council, or particular thoughts about what they would like to see the Habitat AP provide for the EFH five-year update. Trish, if you need some time to think about it, I will just pose it as a question for answering later, after you and Mel have had time to coordinate, or consult.

MS. COOKSEY: Yes, and reality is a big component. I did want to clarify, Wilson, and you had mentioned the FEP II review, and I would be very hesitant to formulate it in that way, as a review of FEP II, because FEP II is massive, but more open to the idea of, if there is information to be added to the FEP II, that that would definitely be a component of the five-year review, but not necessarily a full review of FEP II, but, again, trying to keep something that is achievable, given what we have available, and does that differentiation make sense?

DR. LANEY: Yes, and, I mean, adding information make sense, and, again, I think we have, you know, this suite of documents out there that are relatively new, and most of them did what we ideally would like to do, which is take a hard look at the literature and update -- You know, cite the references that they were aware of that were much more recent than the ones that we cited in FEP II, in all likelihood, and remind me, and what was the date on FEP II?

We did that -- The first habitat plan was 1998, and so then we did this one in -- It was a good many years later, and so it's not all that much out-of-date, and it's not like -- Simen left, but I was going to remind him that our diadromous source document, that we did for the ASMFC, has a 2009 date

on it, and I pointed out to Lisa Havel, in 2019, that, hey, it's ten years old, and we need to redo it, which may have helped to precipitate Lisa's departure, and I'm not sure. She was not enamored with the idea, but, okay, I'm good with adding stuff, and that is a much more reasonable lift.

MS. COOKSEY: Yes, and so really useful and important to do. Mel.

MR. BELL: (Mr. Bell's comment is not audible on the recording.)

MS. COOKSEY: Right, and so, again, keeping the focus, number one, on what is achievable that will give us the checkmark on, yes, we completed our five-year review. Anne.

MS. DEATON: I was just going to add that one thing, also, that's different is the way that information is so much more available. Like you can Google and find almost any document now, even without having a university account, and, you know, it's gotten a lot easier, and links, and so even just a list of links, with a little brief description, and that would be -- You know, that would be good, and it's like the olden days, where everything had to be really all in a printed document, I guess is what I'm saying.

MS. COOKSEY: Yes, and so providing links to documents is a good way to expand information. Roger.

MR. PUGLIESE: I think that goes back to that thing that we need to get some of those things that we had online before back up, because that's exactly what that was going to, where you had core information from our documents, but then it had linkages to other detailed information at the state and regional levels, especially when there are big deep dives, like the recent one with ASMFC on conservation areas and the terminology on that, because then you have the most recent information that you can quickly access, say maybe that specific description for SAV or whatever, and so I think that's definitely achievable.

We are looking at all those things right now, and so I think the timing to get these types of things kind of aligned is good, and, also, I wanted to make one point, and this is something that up the chain with NMS is being endorsed, which I think is an important thing, because, in the past, we've had -- Where they were like, well, you've got to do everything in the world, and there was like no reality check at all on the recommendations in the future, until we got to the point -- They did it nationally, and they got kind of pulled back on certain aspects, but I think, you know, hopefully, in the future, there's more investment, and more ability, to focus on our region, that we can get even better, but I think, to do what we're talking about now, to focus on these different areas, add in these newer connections, and move it -- I think that will all be something that we can work pretty significantly and make a lot of advancements, as we move into next October.

What I had identified, and let me scroll down here, real quickly, while I'm touching on it, would probably be the same type of thing, where you would have some webinars that would provide the capabilities to look at.

One of the other areas that I did mention, that we can throw in the mix, because I think it's going to be an easy lift on this, and I had it in here, is kind of timing going between the council's committee and the AP and then some workgroups that highlight these different ones, and this one was getting towards some species, but one of the first ones that was highlighted was the

opportunity to look at prey species, and I think we can pull that directly from our Ecopath and Ecosim, the most comprehensive prey distribution matrix that's ever been made for an Ecopath model, and so we can pull that in, as background, for virtually -- You know, whatever we have for our managed species, and so that's something that we can add to that additional list, I think, on this, fairly simply.

MS. COOKSEY: I did want to give Sam a chance. He's had his hand up for a while.

MR. YOUNG: This has been gnawing at me, because we've been talking about some of the benchmarks, starting in inshore, where we're used to brackish water and that type of thing, and, coming from Florida, and seeing what it's done there, have we looked -- Are we considering what habitat has been lost because of development in those areas, especially those rivers that flow out towards the estuaries, and I'm talking phosphorus, nitrogen, seagrass, those types of things that have affected the EFH, quite frankly, like the Indian River Lagoon, and are we just assuming that it's static, or are we assuming that there have been changes that we need to know about to incorporate into the EFH?

MS. COOKSEY: Well, so, first, for this purpose, for the five-year review, and what we were talking about is understanding where the tidal head is, where that end of the tidal fresh component is, and that's regardless of, you know, what vegetation we may see there, and that is, in and of itself, EFH, is the tidal palustrine habitat, and so identifying where it currently is provides us like the first step, and it will help with consultation and ensure that consultations occur where they should, and that we're capturing -- But, I mean, we do need to acknowledge that that tidal head can change over time, and so it may be that, every five years, you know, we may need to go back and assess it, but, first, we have to do it, and get it, and identify where that tidal head is for these rivers, and that's a physical parameter. That is not a vegetative --

MR. WEBB: One of the challenges I think that Sam is talking about, or maybe at least eliminating, is the coastal rivers in that area don't go to the ocean, and they go to an inland area, and so you've got the St. Lucie Inlet, where it has a huge tidal flow, going into the manatee pocket, but the St. Lucie River is -- I don't even know if there would be a tidal head at the St. Lucie River, and I don't know what the mechanics are of determining that, and, where there's a river, a large body of inland body, and then an inlet that goes to the ocean, and so has that -- Does anybody know if Florida is doing any research on that, or has even any interest in doing research on that?

MS. COOKSEY: Unfortunately -- Casey can tell us something.

MS. KNIGHT: I was just going to say that, usually, the head-of-tide is determined in that zero to 0.5 salinity zone, and I would imagine it still has some point of strain of a head-of-tide, even when they do empty into those bays, but then, also, to Sam's point, the head-of-tide GPS locations that I have are probably from the late 1990s, and so they're also a little outdated, and they might need a little groundtruthing to go along with them.

MR. WEBB: Do you have actually data for Florida's rivers?

MS. KNIGHT: I don't think I have Florida, and I think I just have North Carolina, South Carolina, and Georgia. I was looking for the GIS, and it's got to -- It's on my hard drive that I've got at the office.

MR. WEBB: Who does -- Is the state responsible for that?

MS. KNIGHT: No, and this was a push out of the NOAA's Geography Branch, out of Silver Spring, Maryland, back in the late 1990s, and they did a lot of salinity work in North Carolina, South Carolina, and Georgia, and I think parts of Virginia and the Chesapeake, but, yes, that's all that --

MR. WEBB: You and I will have to talk.

MS. COOKSEY: I think we've got identification of what we would like to see done, and then we need to identify the process by which those goals can be achieved, and, you know, we definitely have to have full range of, you know, state experts in, you know, those habitats that would be part of any subcommittee that formed to look at designation of tidal heads in the river systems, and so we would, obviously, have to have participation from, you know, Florida, as part of that, and, I mean, that would be critical.

What I would suggest is I've got one more item that I would like folks to see what they think for us including as a goal for the EFH review, and then maybe we can get into the process by which we go about achieving the goals. Okay.

So the other item that came up, in discussion with HCD, and a point of clarification that is Florida-specific for the user's guide, for snapper grouper -- Under the fishery management plan, shrub scrub habitat is identified as essential fish habitat, and it's traditionally treated as mangroves, and so mangroves are EFH in Florida, but we also have buttonwoods, and, functionally, buttonwoods act the same, habitat-wise, as mangroves, and so what we are potentially seeking is to clarify that in the user's guide, because, right now, it is not. When we talk about shrub scrub, it's, in parentheses, "mangroves", versus adding, in parentheses, "mangroves and buttonwoods", to clarify that, because of the function that that habitat provides, that should be -- We already treat it as EFH in our consultation processes, but it has been brought up that it is not -- That buttonwoods are not specifically listed as EFH, even though that is what they functionally provide. That was another item of clarification that would act as part of the five-year review, if folks are supportive of that.

MR. WEBB: You were saying "and"?

MS. COOKSEY: Yes.

MR. WEBB: Okay.

MS. COOKSEY: Anne.

MS. DEATON: I was just going to say that Florida has a natural heritage program, and they have all the habitat classifications, and the shrub scrub would probably be very comprehensive, and you could maybe just refer to that.

MS. COOKSEY: Right, and so, first, we're going to identify that we want to do it, and then we can identify the processes by which we achieve it, but, first, we need to -- I would like to have consensus that that --

MR. WEBB: Yes, please. Yes.

MS. COOKSEY: Wilson.

DR. LANEY: Yes, and you answered the question that I was going to ask, and then I need to jump back to the discussion we were having with Casey about Florida data, for where the head-of-tide would be, and USGS has probably got data on that, and I have colleagues, and I think we all probably do, in USGS that could probably help us out with that information for Florida. In particular, the person who just took over the technical lead for North and South Carolina happens to be a close associate of mine, and so I'm sure we can get that information, although we already have it for North Carolina, Georgia, and South Carolina, it sounds like, and so that was one point.

The other point goes even further back, to David's earlier question about species moving north, and I wanted to highlight another one, which is white shrimp, and some of you may have heard that white shrimp are now colonizing Chesapeake Bay to such an extent that Virginia now has a shrimp fishery, and so that's another good example, David, of a species that has taken advantage of, you know, warming temperatures and has been able to move north, and now Virginia is taking advantage of that, and they are very tightly controlling that fishery, from a management perspective, and they're using a different gear type. They're using small beam trawls, like a sixteen-foot beam trawl, as opposed to bottom-tending otter trawls, as well, and so that's just another example that popped into my brain after we had that discussion.

I support it, Cindy, and I think it's a great idea, and I think, you know, the only question I would ask is, okay, we've got two things that we know we need to address, and is there anything else lurking out there that we might want to try and tackle too, realizing that we need to keep it feasible and manageable and lean and mean?

MS. COOKSEY: Lean and mean is a perfect description of it, and so I have presented what we have discussed, you know, to-date, and have identified as something that, you know, the NMFS Southeast Region would be very accepting of, as part of, you know, constituting a five-year review, but I am certainly willing to open it up to discussion, if we can identify something else that someone may wish to put forward that is lean and mean and achievable, given our resources, but so, if there is anyone else that wants to put anything forward, and is anyone online raising hands? I may be a little bit of a curmudgeon, in that I'm going to say that, after this discussion ends, we're not necessarily going to add in any more things to the five-year review, at this time, and so --

DR. LANEY: I protest, Madam Chair. We can always add stuff, right?

MS. COOKSEY: Again, lean and mean, and so we're going to stay focused. Are there any other points that folks would like to bring up for our lean-and-mean EFH discussion, because I will then move us into the processes component of the discussion, if not. Paula.

MS. KEENER: I am not familiar with the freshwater habitat that you were saying was included as a large part of the mangroves, and what is again?

MS. COOKSEY: Buttonwoods.

MS. KEENER: Buttonwoods, and what species is that?

MS. COOKSEY: Buttonwoods. I'm not a plant person, and I'm a fish person. Simen looks like he knows.

MR. KAALSTAD: I happen to have done a thesis on mangroves.

MS. COOKSEY: Okay. We know who is on that committee.

MR. KAALSTAD: So buttonwood is very functionally similar to mangrove, and it kind of doesn't really look like, and so it doesn't stand out as a mangrove, and it's not a true mangrove, by one of the four definition, but, again, functionally, it's the same, but it's just not as recognizable, and so I think, also, it does make sense to add that clarification, because people would look at it and think that it's not a mangrove, because of the typical sort of morphology of mangroves.

MS. KEENER: Is the distribution the same, the range?

MR. KAALSTAD: I don't know too much about buttonwood in that regard, but I know it coexists with a lot of tropical mangrove species, and so you see it a lot in the Caribbean, and probably a lot in the Keys, along Florida, but, yes, it sort of occupies the same coastal region of your intertidal zones.

MS. KEENER: Okay. Thank you for that clarification. My reason for asking is, again, thinking about this renewable energy policy, and it very explicitly defines the types of habitats that are -- That fall under the policy, and would that need to be added as a separate habitat?

MR. PUGLIESE: I think, basically, if it gets clarified in the user guide, the terminology that's used can be carried over into there, because I think the intent is that, when you're talking about the overall habitat that it covers now, instead of just mangroves, because I'm sure it's the same way in the policy right now, and it's probably has a parentheses and "mangroves", or something like that, or it specifically calls out mangroves, and we could add in a clarification, in parentheses, "mangroves and buttonwoods", or something like that, and so, I think, yes, it needs to be carried over into that, but I think it's more that it's connected directly to how it comes out of the user guide, and then we can link it back in there, and so yes. The short answer is yes.

MS. COOKSEY: Okay, and so I think I'm going to move the discussion on to -- Roger.

MR. PUGLIESE: (Mr. Pugliese's comment is not audible on the recording.)

MS. COOKSEY: Roger has a good point, and now would be a great time to take a breath, before we move into discussing how we're going to do these five-year reviews, and so it is 2:55, and let's come back together at 3:10. Thank you.

(Whereupon, a recess was taken.)

MS. COOKSEY: Thank you, everyone, for coming back to finish up our first day of our spring 2023 meeting, and so let's talk process, and so we've identified, for the five-year review, looking at identifying the extent of tidal influence, tidal head, for southeastern river systems, inclusive of Florida, as well as Georgia, South Carolina, and North Carolina, and we've looked at adding in a clarification as to buttonwoods as part of the scrub shrub habitat as EFH, and then, also, adding in updated references into FEP II, have all that identified as part of the five-year EFH review, and so let's -- Yes, Roger.

MR. PUGLIESE: I would just add one more check-off with the prey, because the prey matrix is readily available, so that we can actually integrate it.

MS. COOKSEY: So would that be added into FEP II?

MR. PUGLIESE: We can add it -- Yes, we basically can add it online, as connected, and it could be connected as an appendix for the review letter or whatever, that we completed it.

MS. COOKSEY: I would say maybe make that part of the updating the FEP II, with the prey matrix.

MR. PUGLIESE: Yes, and that would be fine. I mean, we're going to reconstitute portions of that dashboard, and we can just have the entire prey matrix, and my point is that we'll get it, be able to see it, and then it can be acknowledged in the completion of the review, because that is a check-off point in there, and it makes sense to me.

MS. COOKSEY: Okay.

MR. PUGLIESE: Because it's available.

MS. COOKSEY: So let's do the buttonwoods first. Now, unfortunately, we do not have a Florida representative, but we do have Simen, and so my initial thought, and, please, and this is just my initial thought, and I am welcome to other ideas and suggestions and modifications on this, was forming a subcommittee for, you know, each of these three areas, with a lead for each subcommittee that can, you know, provide a point of contact, but they will not be the only one responsible for addressing this, and there would be a group of folks associated with it, and the buttonwoods is primarily a Florida issue, and so Rene is not here, but I think we would want to have Rene, at a bare minimum, assigned to work with you, Simen, if you are agreeable to serving as the chair of that subcommittee to provide clarification on buttonwoods as part of the scrub shrub EFH habitat for the snapper grouper complex.

MR. KAALSTAD: Sure. I would be glad to help with that.

MS. COOKSEY: Thank you so much, and so, you know, Rene as well, and is there anyone else who is interested? David. Anyone else? I mean, I think that, you know, Rene may identify other folks that should be part of the group, but I think that's a great way to start out. Okay. It seems like we have consensus, and I see lots of shaking heads, and thank you, David and Simen, for volunteering.

AP MEMBER: What about Sam?

MS. COOKSEY: Well, Sam didn't put his hand up to volunteer. That's okay. We're going to get him on the tidal river, and don't you wait. Okay, and so the next one would be the updating references and the prey matrix into the FEP II. Is there anyone that would like to step forward to serve as a subcommittee chair? Wilson. Thank you. Is there anybody else that would like to serve on that subcommittee? Kevin. Thank you. Do we have anybody else, or there is anyone who is not here that we think that we should volunteer to be part of that that would have something that we know that they would be able to add in?

MR. PUGLIESE: Laurent.

MS. COOKSEY: Laurent. Yes, he would be perfect for that. Okay.

DR. LANEY: Just a point of clarification, Madam Chairman, and so, again, we've got this list that we articulated of all these other documents that we know have been completed, and so one of the first things that I would suggest is that we just look at the lit cited in others and steal from those, or borrow from those, documents, and I think that will save us a lot of work, in terms of doing literature searches. Then, if AP members have particular topics that they suggest there would be good new literature for, please send those to me and Laurent and Kevin.

MS. COOKSEY: Roger, were you going to add something? No? Okay. Anne.

MS. DEATON: Just a question, and so are you going to limit that? What kind of new information? Is it just limited to new information on fish use of habitat, or is it going to be new potential threats, like wind, or, you know, I think you better focus it down.

MS. COOKSEY: That's a good point. That's a very good point, and so this is part of the EFH five-year review, and so it should be reflective of, you know, the fisheries management plans, and so it should be information that is directly related to federally-managed species and their prey, items in the habitat they utilize, and, again, I would recommend referring to Subpart J that is in the meeting blue book for a great kind of here are the mandatory contents, and here's where we should be focused on, to help that, and, again, keeping in mind lean, mean, and achievable. Yes.

DR. LANEY: Yes, I get it, but, again, I mean, looking at Subpart J, wouldn't we at least like have to have like a very short memorandum that says here's what we were obligated to do, and here are these headings, and here's what we did, that address each one of those headings in Subpart J, because I know we are talking about some very specific clarifications.

MS. COOKSEY: No, and I will -- Magnuson-Stevens does not prescribe how the review is conducted, and so each council, across the country, has chosen different approaches, and definitely they've done different approaches during different time periods, and so there is no prescription that it must be done in a particular fashion. What we're trying to do is something that is beneficial to what the council and NOAA Fisheries is doing, but in a form that is achievable, given our resources and timeframe. Are there any other questions about the FEP II lean-and-mean update subcommittee? Yes.

DR. LANEY: Well, only to the extent, Madam Chair, since we have quite a few people that are not here, are you going to -- I presume there will be some sort of a follow-up by you, as the

chairperson, that says, okay, here's what we did, in terms of laying out the process, and here's who volunteered for these subcommittees, and, if you weren't there, but you want to volunteer for a subcommittee, we would be more than happy to take you on.

MS. COOKSEY: Right, and we can -- Roger and I can work on preparing an email, at the end of this meeting, that would be to the entire AP that would -- You know, these are the three areas of clarification that we have identified, and we're not taking any more, and these are the subcommittees that were formed, and these are the current members, and opening it up to anyone else would like to volunteer. Roger, was there anything you wanted to add?

MR. PUGLIESE: Mainly that that's how we proceeded last time, when we were working on the last policy statement, and, basically, we reached back out, if there was other members that would like to -- I think that's critical. I was just going out to type out the things, so people can see the names, real quickly.

MS. COOKSEY: Okay. Now, lastly, and I saved this for last, because I think it's potentially the most technically challenging, and will require the most resources of these three items, is the identification of the tidal -- The freshwater extent to the tidal head for southeastern rivers, and do we have anyone who has experience with this who might be interested in volunteering to step forward as a subcommittee chair?

MS. KNIGHT: I am hesitant, because I don't even think that I'm treading water at work right now, and I think I'm just like bouncing off the bottom and gasping for air at the top.

MS. COOKSEY: That is reasonable. Like if it is not something that, based upon your existing workload -- If it's completely outside of --

MS. KNIGHT: I mean, I don't mind contributing, but I don't think I --

MS. COOKSEY: You don't want to be the chair?

MS. KNIGHT: Yes, but I definitely don't mind contributing the information that we already have collected.

MS. COOKSEY: So you would be a member of the committee?

MS. KNIGHT: Yes.

MS. COOKSEY: Who are you pointing at, David? Wilson.

DR. LANEY: (Dr. Laney's comment is not audible on the recording.)

MS. COOKSEY: I mean, you would be amazing at it.

DR. LANEY: (Dr. Laney's comment is not audible on the recording.)

MS. COOKSEY: So we have Casey and Wilson as members.

MS. DEATON: Both of those people are from North Carolina.

MS. COOKSEY: That is true. I would definitely want, and need, Rene to be part of this, because it's critical that we have Florida in it, and, Paul, I am putting him on the list as well, and Stacie, all on the list of members. Is there someone who is not here, but we think would have the skillset, and potentially the time?

MS. KNIGHT: If I have that big of a committee, that is all going to help me, and be very attentive to helping, then I could potentially take it on.

MS. KNIGHT: Are you sure?

MS. COOKSEY: Yes.

MS. KNIGHT: Yes, I will do it. It shouldn't -- I mean, really, if Florida comes to the table, and most of it -- Like I should be -- You know, the first brushstroke should be pretty easy.

MS. COOKSEY: Right. Sam, would you be interested in serving on this tidal committee as well, as one of our -- I would like to have multiple Florida representatives on it. It doesn't need to be purely just a GIS, and that was something that we were speaking about to the side, and I don't want it to get under that umbrella of GIS. I mean, what we're talking about is like the USGS data on tidal extent, but it is also identifying, potentially, the bridges that we would use as landmarks, or, you know, other like islands, or well-known bends.

MR. YOUNG: (Mr. Young's comment is not audible on the recording.)

MS. COOKSEY: Right, and we're just saying as part of the subcommittee membership, to be part, but we will, obviously, need to reach out to Rene and Paul as well, and either they will be able to provide that information or they will be able to identify -- I added you on the list. I think this needs the most people, because we need people from every area to help, you know, be part of it, because, you know, as you were pointing out, like what we might use in North Carolina, or South Carolina, may not work in Florida, for what we're initially looking at, and so, you know, having as much information from representatives of the different areas I think is critical. So Casey has agreed to be chair. Thank you, Casey.

MS. KNIGHT: Under duress, might I add.

MS. COOKSEY: Under duress. It's recognized. The chair recognizes the duress, and we also have, as members of the committee, Wilson, Paul, Stacie, Rene, and Sam, and, again, maybe shapefiles is the output, but maybe it is a table that lists bridges, transmission lines, major landmarks, that we add as an appendix to the user guide, or it can be a combination thereof. Again, it needs to be achievable with the best currently-available information, and it can likely be something that we improve upon in the future, but, first, we have to get something. Yes, Wilson.

DR. LANEY: Just for the benefit of those on the head-of-tidal, or tidal freshwater boundaries, subcommittee, and I will, again, defer to Casey, since she -- And Anne, Casey and Anne, since they've done so much work on this already, but what are we defining as the tidal freshwater boundary? Now, Casey, earlier, mentioned zero to 0.5 salinity.

MS. COOKSEY: Salinity is not part of it.

DR. LANEY: Salinity is not part of it?

MS. KNIGHT: We talked about that a little bit at the break too, and I think there's a couple of definitions, and one of the main ones, especially for head-of-tide, is the extent of tidal -- The extent of the reach of tidal influence, but then some of the definitions caveat that with usually zero to 5 percent salinity, or 0.5 percent salinity, and so --

MS. COOKSEY: Part of it is to bring it back to -- I would recommend the Shrimp Fisheries Management Plan, the EFH designation within the Shrimp Fishery Management Plan, is how we get that as an EFH designation, is the extent of tidal influence, and so that's what we're looking for, because, again, this is under the umbrella of the EFH five-year review, and so everything should be tracked back to EFH determinations that are in our fisheries management plans. Roger.

MR. PUGLIESE: As the user guide is laid out, it does identify like the general boundary of each of the FMPs, and it talks about the inland boundaries just being tidal, and so this would add clarification to that specifically, under most of them.

MS. COOKSEY: Yes, and this is how I would recommend thinking of it, is this is a clarification process for the user's guide, because, right now, a lot of folks have lots of questions about where this occurs. Anne and then Wilson.

MS. DEATON: Well, I was going to say that it might be that these areas exist, and it might not be -- I'm hoping that, if you wanted to do head-of-tide, that it exists, and it could serve for the immediate purpose, but I can provide information, but Casey also has the same information, but I can send out information, papers and things, for different approaches and help, if needed. I will be a substitute.

MS. COOKSEY: Wilson.

DR. LANEY: So I don't want to get into the weeds on it, because I figure the subcommittee will do that, but I did have one other question, and that is, and maybe Casey or Anne or you can shed some light on it, but how do you deal with the dynamic nature of it, because, obviously, it shifts, depending on things like hurricanes and navigational dredging and deepening of navigational channels and so forth and so on, but I am picking up on a comment that you made earlier about the scrub shrub habitat and the fact that we have a data layer for that for Florida, and it occurs to me that the head-of-tide, for tidal freshwater, is often demarcated by vegetation, and so would it be a useful thing for us, in trying to look for heads-of-tide, in addition to the salinity data, and would it also be useful for us to look for signatures of --

MS. COOKSEY: I don't recommend salinity, and I would recommend vegetation with great hesitancy, in that there are areas where there have been enough adverse modifications to habitat that there may not be currently vegetation present, where there is still a tidal influence, and so physical, you know, tidal flow data may be critical, and this is up to the subcommittee, and, I mean, you guys are going to figure this out, but I will say, in consultations that we engage in, where this question arises is does there need to be an EFH consultation, because is this tidal freshwater habitat,

and what we say is, even if it's only tidally influenced one time a year, during a king tide in the spring, that is tidal influence.

At the same time, you know, we need something that is, you know, representative of the shrimp essential fish habitat demarcation, because we're tying everything back to the fisheries management plans and, again, something that is achievable.

Ideally, if we want to meet the 2024 deadlines, we should have something here for review in the spring of 2024, so that we can then pass it up to the Habitat Committee for their review, and they can then determine whether or not to pass it up to the council, and so a year from now would be the timeline that I would recommend to achieve this. Thoughts or comments? Yes, Wilson.

DR. LANEY: Well, a question for Simen, since he did his master's work down there in Texas, and so they've looked at this quite a bit in coastal Texas estuaries, if I'm recalling correctly, and your work was done pretty recently, and so you would be familiar with that literature, to the extent that it might be useful for us in looking at the same question over here on the east coast, right? Is my perception anywhere close to reality?

MR. KAALSTAD: Yes, and so I have a lot of pretty recent literature that I can contribute, in regard to mangrove habitats, a lot of which kind of also addresses the climate variability and sort of projection models, on where these mangroves are expanding to, which, I mean, that's obviously something to consider too, in terms of population distributions of, you know, fauna that are reliant on these mangroves, but what we've seen in Texas, for example, is a large encroachment of black mangroves, which are your most cold tolerant, and that's why they're able to make it all the way up to Louisiana, but, further south in Texas, we're slowly seeing mangrove crabs now sort of start populating those mangroves as well, which is sort of how a foundation species works. In terms of that encroachment and things, I have a lot of literature, and I can share.

MS. COOKSEY: Paula.

MS. KEENER: Thank you. I know that NOAA's Center for Oceanographic Products and Services has stations in coastal areas all over the country, but I don't know the specific locations of them, off the top of my head, and have you all ever looked at getting in touch with them, to see if they might have some of this information, based on their stations?

MS. COOKSEY: I personally have not, but that might be another resource for the subcommittee to tap into, and so thank you. Yes, Wilson.

DR. LANEY: Paula, would you repeat that, because I missed who you said had the information.

MS. KEENER: Yes, and it's referred to as NOAA Co-ops, and it's in the National Ocean Service, and it's the Center for Oceanographic Products and Services. It's Operational Oceanographic Products and Services.

MS. COOKSEY: Casey.

MS. KNIGHT: Just to circle back to head-of-tides real quick, I was able to access that layer, and I do have it for actually the entire U.S.

MS. COOKSEY: So maybe the subcommittee's job just got easier, and it might just be able to review that information.

MS. KNIGHT: I am hoping so, and so I think what I would probably do is just take this and then make some static maps for the subcommittee to review and then go from there.

MS. COOKSEY: Okay, and, like I said, if folks get this done before spring, I mean, we could bring it back to the table for the fall, and get ahead, and I just kind of was giving folks like the last deadline, but we can definitely bring it back sooner, if it is easier than what we anticipated. That makes me happy. Thank you.

MS. KNIGHT: I also heard Anne comment earlier, saying that she was going to be co-chair for the subcommittee.

MS. DEATON: Actually, now that you found all the head-of-tide marks, I'll be on the committee.

MS. COOKSEY: So I feel like this was super productive, and I definitely thank all of the AP panel members, and all of the volunteers, for making this productive, and I'm really excited about the plan that we have right now, moving forward, and I think we're going to end up with a really great five-year review, and something that is achievable.

MR. PUGLIESE: (Mr. Pugliese's comment is not audible on the recording.)

MS. COOKSEY: You can reiterate it, Roger. The buttonwood clarification committee.

MR. PUGLIESE: Is that the --

MS. COOKSEY: Yes, that is the full list for the buttonwoods, which hopefully will be a very straightforward --

MR. PUGLIESE: The more we could actually get to bring to -- October is going to be a big meeting, and so we can prep a lot, and, if needed, if we need to have -- If you're going to do separate ones, if you need to do webinars, I can help you coordinate that separately. If you want to do other things, like Google Docs, et cetera, you can do that also, but, yes, the resources are there to do that, because we had scheduled -- The schedule I had before was going to be tailored to this specifically, and so I had the prey FEP II reference update, and there's got to be a better name than that, and it's Wilson, Kevin, and Laurent. Does that sound right? What about the name?

MS. COOKSEY: Yes, the name is wrong. How about Limited FEP II Update, and then, in parentheses, "prey and references"?

DR. LANEY: I think that almost constitutes a personal attack, Madam Chair, because I know who it's directed at, probably as a result of my recent gray triggerfish composition.

MS. COOKSEY: I just want a focus. That is my goal, and are a lean, mean, focused machine. That looks perfect. Okay. Then the Tidal Freshwater Boundary Subcommittee, and Casey, Anne, Stacie, Rene, Wilson, Paul, and Sam.

MR. PUGLIESE: One quick note on that subcommittee, and I may reach out to the Southeast Area Connectivity and Adaptation Strategy Group, because there's a lot of water foundation information, river flow and regimes and all that, and so they may have some of that information also, and so -- It's SECUS. I remember, in the foundational work for the Landscape Conservation Cooperation, which carried into SECUS, that whole work on the river flows, and all that stuff, was some foundational information, and so they may have access, and so contacting their science director, and I can't remember his name, would be a highlight, to be able to -- If there's additional information that they might be able to tap in, and they might have other things beyond that. Wilson, who is the science director for SECUS now?

DR. LANEY: I was just telling Anne that it's Todd Ewing, who came from the North Carolina Wildlife Resources Commission. He's the overall coordinator for SARP, and not SECAS.

MR. PUGLIESE: That's SARP, and I was talking SECUS.

DR. LANEY: Yes, but SARP is very much engaged in SECUS.

MR. PUGLIESE: Yes, and we have a couple of different --

DR. LANEY: We have three fish habitat partnerships, and that brings to mind too that, in addition to the prey matrix, we could also take a look at the species habitat matrix that was published in *Bioscience* by the Atlantic Coastal Fish Habitat Partnership, Simen, also, and so we can pull from that document as well.

MR. PUGLIESE: I remembered, and it's Rua Mordecai, and he can definitely provide additional input into this, and maybe even pull him in.

DR. LANEY: Yes, for sure, and, for those of you who don't know Rua, he's at Fish and Wildlife Service, and he is co-located in Raleigh, with the North Carolina Wildlife Resources Commission still, and so the whole staff is still there, and they have tremendous expertise, and Amy Keister is their GIS person, and Hillary Morris and -- Anyway, they're great, and they would probably be very interested in this exercise, because they would probably benefit from, you know, whatever we wind up producing.

MR. PUGLIESE: Yes, and we had really extensive connections to the Landscape Conservation Cooperative, and we lost those with, you know, the SECUS moving forward, but it's still the foundational information that came directly from us when they -- Because they go all the way to the bound of the EEZ, and so I think reengaging -- That's going to be something, in the future, that may be well worth it, because of all of our work on climate, and, if they have more information on maybe changes in river systems, on habitats inshore and all that, that they're working on, it's probably a nice, good cross-section, and so I was going to try to see if we could get them in for this meeting, but, with just everything else going on --

That may be something really useful for the October meeting, just because of all these crosswalks with our climate vulnerability coming forward, with our climate scenario planning, all these other things, and then that whole desire to have even more linkages from the estuarine to here, and there

is probably things that will be useful now, and even into the future, especially with some of the GIS and other things, because, yes, they've got a lot of that right there, just FYI.

MS. COOKSEY: This was all great, but I believe that we are ready to wrap-up today's session, and I want to again thank everyone for all of your input today, and for all of your volunteering, and I really appreciate that, and we are meeting again tomorrow, starting at 9:00, 9:00 to 4:30, and we have a very busy session, focused on revisting our beach renourishment and large-scale coastal engineering policy, yay, and then we will have a very informative offshore wind session, and we will finish it up with going into the policy statement on energy, which is one of our next big initiatives, in addition to the EFH five-year review. Otherwise, that is it for today. Thank you, all.

(Whereupon, the meeting recessed on May 16, 2023.)

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MAY 17, 2023

WEDNESDAY MORNING SESSION

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The Habitat Protection and Ecosystem-Based Management Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, on May 17, 2023, and was called to order by Chairman Cindy Cooksey.

MS. COOKSEY: Good morning, everyone, and welcome to day two of the spring 2023 meeting of the Habitat Advisory Panel. We have a very interesting day ahead of us, and we're going to be starting out focusing on our policy statement on beach dredging, and we are going to have an interesting session on offshore wind activities, and then we will dive into our EFH policy statement on energy. To kick it off though, Wilson asked to clarify a statement on the record.

DR. LANEY: Thank you, ma'am. What I need to clarify is I had referred to -- When we were talking about all of the reports yesterday that have come out in fairly recent years, that may have additional information that we can add, on a limited basis, to the FEP II, I referred to a South Atlantic habitat assessment, and there is no such document. There is a Northeast one, but what I meant to say was South Atlantic ecosystem status report, and so, if you want that document, you can Google it, and it's downloadable from the NMFS website, and it's a very useful document, and I think it's got a lot of useful information in it, and so please make that correction.

MS. COOKSEY: Thank you for that, Wilson. I am going to kick off our discussion, and revisitation, of the beach dredging and filling policy, and so this is a policy that we have been working on, as the AP, for approximately two years. We sent a draft policy up to the spring Habitat Committee, and, at that meeting, they did receive some public comments that led to the committee asking us, as a panel, to revisit the policy, and they specifically asked that we reach out to all of the state partners, to see if we could verify comments and input from the broader community, and so we had at least one person that was with the FDEP that was specifically identified. We reached out to that person, and sent them a copy of the policy, and we also resent the policy to all of our state members and asked them for comments.

At this point, we have received no comments from our Florida partners, nor from the Florida DEP, and we did reach out multiple times to those folks, and we have received comment from North Carolina, and thank you, Anne, and we have incorporated Anne's comments into the draft, and then we also received generally supportive, but no real changes or comments, from South Carolina and Georgia as well, and so the policy that has been posted as part of the blue book, and what we have up here, was revised this month, and it was reflective of the changes that were suggested that we went over, and now we just kind of want to go over that with the AP panel as a whole, to make sure that we incorporate any additional comments, edits, questions, or concerns before we resend this back to the Habitat Committee for their further evaluation.

One of the major concerns in the public comments seemed to revolved around the use of our word "retreat" in the findings, which can you scroll down to that? It was right at the top of our council -- It was the first part of our findings, the second page, the top of page two.

We originally used, as part of our findings, in establishing a general approach of, you know, avoidance and minimization, as, you know, part of an overall policy, and we recommended to consider "retreat" when evaluating how best to address the widespread beach renourishment concerns and projects occurring in the Southeast.

We have now changed "retreat", in every place that it occurs within the policy, to "targeted buyouts and relocation", and so it's a little bit greater specificity, and I wanted to clarify that this is not something that we are recommending, and we're just saying that it should be considered as part of all of the considerations that we would recommend for communities that are addressing. Yes, David.

MR. WEBB: I don't mean to interrupt, but I wanted to ask a question about your initial statement. The fact that Florida DEP has not responded, after numerous requests, does that give them the opportunity -- I am asking an administrative question here, and does that give them an opportunity, after this is finished and finalized, to come back and demand that they get input to it, or what's the process?

MR. PUGLIESE: Well, the request, and identification of the individual and the organizational response was provided, and they can always submit something directly to the council, or to the state, and so, I mean, this will come out as the recommendation from the advisory panel, based on all the input, and the requested input, and I know, at the FWC -- Since Rene wasn't here, and there was an indication that they may have some additional comments, but it was clarified that, you know, we were requesting that FDEP provide separate comments, so that we would -- You know, it's one thing to get those from the state, and another from what was the organization that's more closely involved, and so, you know, as I said, the council can take it as-is, or if something comes up -- That is going to be the prerogative of the committee and the council, as they finalize the document.

If there are other critical points, or something like that, they still could come in and talk about that, but I think the opportunity -- This is the direction from the council, and that can be clarified by our members here, if I'm misstating, but we had been given the directive to solicit that type of input, you know, the opportunity to review and provide any additional, you know, critical revisions or something that we're missing on here, and this is where we're at right now, and then that was sent

back, about us meeting here, and then if there's additional things, and so, yes, that's where we are right now, which hopefully means that they're good with it, and there's not significant issues here, because, I mean, this is a recommendation document, and it's not -- As Cindy already identified, we're not requiring any of these, and we don't have the power to require some of these, and we're just trying to meet the mandates of Magnuson to address the non-fishing considerations, and, you know, this is the recommendations from this group, and then the committee and council can deal with any of the other kind of issues that may come up on that.

MS. COOKSEY: Again, I want to highlight that this policy dates back to 1998, when there was originally a beach renourishment policy as part of the habitat comprehensive plan, and it was revised in 2015, and we were just seeking to revise it, you know, again, to bring it up-to-date and add relevant citations to the document, and so it's not anything new, per se, but we did receive -- The council did receive public comment, and it seemed that a lot of that concern was around the word "retreat", and so we just sought to clarify that, and I continue to highlight that this is not a new regulation that is being proposed, that this is purely a policy statement. Yes, Roger.

MR. PUGLIESE: I was just going to make a note, and we did receive one public comment, and it's loaded on the end of the recent documents online, and it was from Ken Lindeman, who provided, you know, some of the informational information in the past, and so most of it had to do with some updating, and those also were some -- Updating some of the background information and support for actions we had taken in the past, and so I think those are included online there, and, if you all want to look at it, I do have it loaded here, if we want to walk through it, but it's specific to really getting to some of those questions about maybe some updated information, mostly.

MS. COOKSEY: Do you want to bring them up? We can bring them up, and Ken sent them in, and he was very supportive of the policy, but he did, you know, try to add some references that may just expand the references that are specific to Florida, which would be beneficial. Yes, Wilson.

DR. LANEY: Thank you, Madam Chairman. While Roger is looking those up, I will point out that the timing is pretty good. There's a coastal review, and the North Carolina folks all know what coastal review is, which is something that the North Carolina Coastal Federation puts out on a daily basis, and this article just came out two days ago, and it is entitled, "Buying out Threatened Oceanfront Homes is not a Crazy Idea".

I think everybody on the panel might find it interesting to read that, but my take of the bottom line, and this was based, in part, on an analysis, I think, by Dr. Rob Young, who some of you know is an associate, a colleague, of Orin Pelkey, and Rob did a study that compared the cost of a possibly buyout of eighty highly-exposed properties in Rodanthe, which is on the Outer Banks, for those of you who are not familiar with Rodanthe, to the cost of beach nourishment, and he said that beach nourishment would be triple the cost of buying out these eighty threatened properties, over the course of a fifteen-year period, and so I will send the link to that around to everybody, and I think you would find it interesting reading.

MS. COOKSEY: Definitely. Thank you very much for sharing that.

DR. LANEY: You're welcome.

MS. COOKSEY: Anne.

MS. DEATON: I was just going to add that I looked at the comments from Ken Lindeman, and I think the draft does address hardbottom, but I would support his comments, and it's actually more than just Florida, because, now, as sand gets harder to find -- For example, we've got beaches that didn't used to do the long-term storm reduction projects that are applying for it, in areas there is no sand, and there's lots of -- We have a lot of very flat, patchy hardbottom, where there is lots of evidence -- There's lots of fish on that, even though it may not be as structured and high-relief, and so, anyway, I feel like that's very pertinent to have in here.

MS. COOKSEY: Yes, absolutely, and I'm familiar with that type of habitat, and we consider it sparsely colonized live bottom, and that is incredibly common up in the North Carolina area, and, you know, communities up and down the eastern seaboard are dealing with the fact that they are running out of readily-available sand, and so we hope that this policy can help them consider the full range of alternatives, and, as Roger mentioned, Magnuson-Stevens, where there is an action that has a potential adverse impact to essential fish habitat -- Our first step is to avoid, and then, if we can't avoid, we seek to minimize, and this finding in the policy statement follows what is set forward under Magnuson, that process to first avoid and then minimize. You know, when I went through Ken's comments, my feeling was that we did, like you just said, already address that, but we could potentially incorporate the Florida references, that that would be something that would strengthen the policy.

MS. DEATON: If I could also add, and I will just say that I think one concern that I heard, when talking to other people in North Carolina about this, is like how is this used, and so I think there's -- You know, people understand like, you know, how binding it is, like you just went over, and so it is a nice tool to leverage and push an applicant towards the right thing, and, in my role, it's nice to have these policies, even though we may have our own state policies, but it reinforces whatever position you're taking when you're like reviewing a proposal, a project, and so it's good to have, and I appreciate it.

MS. COOKSEY: In my job, I also use the council policies as part of, you know, a starting point of communication and discussion, because they are not binding, in essence, but it can help bring the applicant and the federal action agency, as well as those of us that are, you know, consulting to points of discussion that can help facilitate that avoidance and minimization process. Yes, Wilson.

DR. LANEY: Just a question, Madam Chairman, mostly to you and Anne, I think, and so, given the type of hardbottom habitats that you just mentioned, and the fact that there's a certain amount of dynamism to those, because sometimes they get covered up by sand, during storms and things like that, but do you all think that we have covered, in the policy, the need for -- I don't want to use the word "frequent", but periodic surveys, just to try and address that dynamic nature of those habitats?

I mean, I know we're -- Like we're going to talk about offshore wind, and I know those areas are being surveyed, and BOEM is requiring that, and that's a good thing, but do we have anything in our policy, or in place, that notes the fact that some of those important habitats do tend to be dynamic in nature and that, you know, if you do a survey in year-one, and then somebody proposes

to do something in year-two, you know, the same habitat map might not accurately reflect what's there, if a hurricane occurred in the meantime and something got covered up, and I don't know, and that may be getting down into the weeds too far.

It may be something that we don't need to worry about, and maybe we could just, you know, articulate it on the record, and say, hey, this is something that you need to think about when you're looking at an area that has those kind of habitats in it, is to -- Who has the most recent survey, and what is the most recent storm that could have reconfigured everything.

MS. COOKSEY: Just kind of the nature of the beast for sand borrow areas is they are required to conduct extensive surveys, in order to have inshore sediment matching, and that is discussed extensively in the document, and that's critical for success, and they have to ensure that the depth of material exists for the borrow area, and so, to-date, none of the pavement habitats would have material that is deep enough to even qualify as a borrow area, but it is something to be aware of. Yes, Anne.

MS. DEATON: But just an example, and, in our Topsail Beach, Surf City, because of that, that it's patchy, they're looking at smaller borrow areas in between the patches, and so I do see that we have lots about surveys, and they do have to do surveys, but maybe -- I don't know if we address buffers, or distance, from it, but that could be addressed in the actual process too, and it doesn't have to be in here.

MS. COOKSEY: Right. Yes, Roger.

MR. PUGLIESE: I think you get to something for the future, especially with looking at climate change and different things, and that's kind of the nature of the beast in our region, the fact that most of our hardbottom is ephemeral habitat, and I think, as we get further down the road in applying some of this technology, what we really need to do is get the geologists a lot more involved. That way, what you end up with is having what we know is the hardbottom distribution, but then come up with something where you really can have something that kind of partitions and identifies that, if you have this much type of coverage level, that, within fifty years, that's probably going to be hardbottom habitat, or you're going to have shifting enough, and so you get a bound enough to capture that kind of moving behavior.

You know, one of the places that it's seen, probably the biggest, was at Gray's Reef, where they had large areas starting to get covered, and so, I mean, it can happen, but I think that gets to that issue of trying to expand that consideration of what hardbottom distribution really is, the functional hardbottom, and maybe that can be captured, where it's like grazing zones, or something like that, that maybe can kind of, you know, do both, but it's an issue that I think we're going to see more as we see the climate change and the temperatures, and the current shifting too, and that probably will have one of the most significant changes for some of these kind of things, but just some thoughts that are bigger-picture things that need to be addressed, but it's underlying, very specifically, that concern.

MS. COOKSEY: Right, and so I would note that, under our best management practices, we do state that, during the construction and monitoring plan, as deemed necessary for specific projects, and so it may be that, if you have a project in an area that they are trying to do that micro-siting of

material, that is where that particular BMP would come into play, and so we do have wording that would address that.

MR. PUGLIESE: Just quickly, on the core of kind of the frontend, basically, Ken is identifying a number of different references to add to here, and some clarification in the sections that could be added, and so I think that's a consideration for just potentially some updates that can occur, and then some -- There's already been this issue here of the retreat has already been addressed by changing it all together, beyond that retreat component.

Then most are really getting at some clarification of wording, and so, you know, these are the applications for those specific references, and so I don't know if you wanted to go through each of these, but I think we just take it into consideration.

MS. COOKSEY: Right.

MR. PUGLIESE: I mean, the issue is -- The bottom line is adding updated, or new, and then some justification for those, and so that's going to be a fine-tuning of what is already included.

MS. COOKSEY: Right, and so, I mean, Roger and I can go back in and add in any appropriate references from Ken's, and I do want to ask the panel -- I mean, I have highlighted that we have some wordsmithing changes that really didn't change the content in here, and the big content change is going from "retreat" to "targeted buy-outs and relocation", changing that phrasing, but I wanted to open it up to the panel, and do you want us to go through a complete read-through again, as we did in the fall, or have folks had enough of a chance to look at the material provided in the blue book and that they are okay with reaching a decision of do we pass this back up, after potentially incorporating additional references, to the Habitat Committee. Can we go ahead and make that decision without a read-through? Stacie.

MS. CROWE: I am just going to say that I feel like we fully vetted this in the fall, and I think we went over it in great detail, and we had some good discussion about things that anyone had concerns about in the document, and I say we just move forward. I think it's a very comprehensive list of best management practices for people to follow.

MS. COOKSEY: Okay, and so, looking at the document that we have in the blue book, knowing that we may add a few references that were provided to us via public comment, is the panel, and, again, we'll go with consensus, prepared to send this back up to the Habitat Committee for review? I am seeing lots of --

AP MEMBER: Do you need a motion or just consent?

MS. COOKSEY: Let's go ahead and -- I would like to have a motion, to make sure that it's clear that the panel is supportive of this.

AP MEMBER: **Move to proceed.**

MS. COOKSEY: Do we have a second? Thank you, Paula, and so it looks like we will go ahead and send this back up to the Habitat Committee. We can do a vote.

MR. PUGLIESE: Can you restate the motion?

MS. COOKSEY: Okay. **The motion is to send the policy back to the Habitat Committee for their review and approval.** Wilson.

DR. LANEY: **Just a suggested -- What my ASMFC colleagues frequently refer to as a friendly amendment, but shouldn't we say "send the revised policy", because we revised it.**

MS. COOKSEY: **That is a perfect friendly amendment.** Thank you.

DR. LANEY: I presume, asking the maker of the motion, that includes what Roger already stated, is that you and he will go over Ken's comments and revise the literature cited, as necessary.

MS. COOKSEY: Yes, and we'll add in the literature cited, as necessary. Okay. That's one aye, and do we have -- **How many ayes? I see all the hands up. Do we have any nays? There are no nays, and do we have anyone online?**

MR. PUGLIESE: We have Jeff Hartzler and Paul Medders are online. We have a yes from Paul and a yes from Jeff.

MS. COOKSEY: **Okay, and so we have a unanimous vote to send the revised policy to the Habitat Committee.** Thank you, all, for that, and I greatly appreciate it. We moved through that rather quickly, and let's take a quick ten or fifteen-minute, so that we can get organized for the next agenda item, our offshore wind. Thank you, all.

(Whereupon, a recess was taken.)

MS. COOKSEY: Welcome back. Before we jump into our offshore wind session, I did want to open it up to our virtual AP members, just to determine if they had any comments or questions or concerns regarding the policy that they wanted to make on the record before we move on.

MR. HARTZLER: Sorry, but what was the last part? The last part, I didn't hear. I'm on the phone, and it broke up a little bit.

MS. COOKSEY: Hi, Jeff. I just wanted to make sure that -- I had not offered our virtual AP members a chance to comment earlier, during the discussion of the policy, and you voted, but I also wanted to make sure that I offered you a chance to speak, if you wanted it.

MR. HARTZLER: I appreciate that, but I am good. Thank you.

MS. COOKSEY: Okay. Great. Thank you. Okay. Well, thank you, both, and now we will move on and welcome Ursula from BOEM, to kick off our offshore wind activities in the South Atlantic region discussion.

DR. HOWSON: Hi, everyone. I'm Ursula Howson, and I am a fisheries biologist in the Office of Renewable Energy Programs in BOEM, and I work with Brian Hooker, who I know you all know, and so I will try to fill his shoes today. Today, I'm going to give an overview of the activity going on in the South Atlantic, and I'm also going to touch a little bit on the central Atlantic as

well. As we go along, if I'm not sure quite if you can stop and ask questions, or hold questions until the end, and which do you prefer?

MR. PUGLIESE: I mean, I think maybe run through it, because what I'll do is I will open up a PDF afterwards, and then you can answer and go back to specific ones. Otherwise, there might be issues with the --

DR. HOWSON: Okay. Sounds good. I did speak to several of the project coordinators before I came down for the meeting, and so hopefully I'll be able to give you more information than what's on this slide, and I also have a couple of notes, and so I'll be looking at my other presentation, to add a couple of notes as I speak, just because of some additional information that I received after I sent this to Roger.

Anyway, the first thing I want to do is go over just kind of a high-level overview of what BOEM is doing right now, and so a lot of activity is going on in the Atlantic and the Pacific, Hawaii, Gulf of Mexico, and we have completed eleven competitive lease sales, and twenty-seven leases have been issued, a couple of research leases and site assessment plans, which is the first stage in the development of a lease area, and fifteen of those have been approved.

We have eighteen construction and operation plans, and I'll be calling those COPs for the rest of the presentation, and we have eighteen COPs that have been submitted to BOEM. Two of those have been approved since 2021, and one is Vineyard Wind and one is South Fork Wind, both in the Northeast, and we have ten COPs under review, and, by under review, in this case, I mean environmental review, and so they're going through the EIS process.

If you need more information on that process, and the dates, due dates, and things like that for those, you can easily find those just by looking online under "FAST-41", and that's the federal project dashboard. You put the name of the project in FAST-41, and it should come up with the project dashboard for that project, and you can find all of the relevant due dates on there, you know, for the EIS, consultation documents, things like that. Those are the ten that are currently under review, and we also have six that have been submitted that are still internal to BOEM, undergoing sufficiency reviews, and then we have leasing, four different areas of leasing, under consideration right now.

I will touch on the central Atlantic draft wind energy area first, and the originally call area has been culled down quite a bit, to develop the draft wind energy area, or WEA, and the draft WEAs were published last November. At that time, there were several stakeholder meetings that were conducted, virtual stakeholder meetings, and those presentations can be viewed on our website, and it should say "and sixty-seven comments", and not "at". Sorry about that. About sixty-seven comments have been received on the draft WEAs.

The final WEAs are scheduled for publication very soon, possibly as early as June of this year, and then the next step in the development process is the environmental assessment for the wind energy areas, and the lease sale for the draft wind energy areas for the central Atlantic are expected sometime in 2024, and we're not quite sure of the date yet.

For most of these slides, you can see there's a QR code, as well as a URL, since I know you can't really access the URL from sitting there, but you can point your phone, the camera, at the QR code, and you should be able to open up the website for each of these.

The next one is in Virginia, moving south, and we have the Coastal Virginia Offshore Wind project, and we call it CVOW, of course, because it's the government, and we create acronyms out of everything, and the lease was issued in 2013. The current stage of the COP is under environmental review, and that's one of those ten that I mentioned a couple of slides ago, and the consultation documents, the EFH consultation, and the National Marine Fisheries Service ESA, as well as the Fish and Wildlife Service ESA documents, the BAs, are also on the website.

The next milestone for this project is the final environmental impact statement, and that is due for publication in September of 2023. For this project, the maximum number of turbine locations is 202, and the preferred alternative is 176, and then, for either of those, the 202 or the 176, we have three offshore substations that have been proposed. The project is landing in Virginia, and that's the interconnection state, and, if the project was approved, the construction and commissioning would take place from 2024 to 2026.

The next one is Kitty Hawk, and so, as you know, that's in North Carolina, and it's about twenty-seven miles offshore of Corolla, and the DEIS is scheduled for next April, and so there have been some changes to this project, and the project alternatives have been revised, and they have had to restructure the timeline, which is why you see now that the DEIS is being pushed back to April of 2024, and this is one where, literally this week, the schedule is being posted, either this week or next week, on the FAST-41 project portal, and so, if you do want updates, again, in terms of the specifics, like the consultation timeline, the environmental assessment timeline, and so on, you should look on that FAST-41 project portal. As I said, you know, it's literally being revised this week. If approved, that project construction would begin in 2027, and up to seventy foundations are proposed for this project.

For south, the COP is still under BOEM review. In this case, we mean internal review, and so it's being reviewed for sufficiency internally before it starts its environmental review, and we call it an NOI, or notice of intent, to start working on the EIS, and it hasn't hit that stage yet.

If approved for that project, construction would be in 2027 and 2028, and there may be some overlap between those two projects, and it's not clear yet what that overlap would look like, and it's all one lease area, currently, and it's still divided into two projects, but there is that center area, where there may be some overlap, and we see that with some other projects as well, depending on power purchase agreements and things like that. That is all the information that I have for Kitty Hawk.

Actually, no, and there's a little bit more, and so the NOI for South is possibly December of 2024, and alternatives are currently being developed for Kitty Hawk South, and, if you are interested in putting forward a project alternative, please contact me, and I will give you the name of the National Environmental Policy Act coordinator who is the lead on this project, and he would like you to contact him, if you can offer any suggestions for project alternatives. Additionally, he -- His name is Ian Slaten, and he is looking for any data sources that could be relevant for Kitty Hawk South, and he would welcome, you know, any information. Again, please contact me, or see me after, and I will give you his email address.

Carolina Long Bay, I will just touch on briefly, because we'll be getting that presentation from the lessees when I am done, and let's see. The leases were executed in June of 2022, and the projects are developing communication plans, fisheries communications plans, and there is a joint survey plan for site characterization of the project, both project, areas under BOEM review. There are a couple of potential research projects that are being developed in conjunction with this, from BOEM and NCOS, and I don't have a lot of information on them. They haven't been finalized, but there is a lot of interest there in potentially differentiating between say unconsolidated sand, hardbottom, and pavement, getting out and doing some field validation of that data, and, again, I don't have a lot of information about that now, but it something that BOEM is very aware of and is concerned about.

Moving on, a little bit of additional information, and a lot of people have been asking about the fisheries mitigation guidance development, and so, in late 2021, BOEM published an RFI, request for information, to inform the development of this draft fisheries mitigation guidance, to avoid, minimize, and potentially compensate for impacts from offshore wind on commercial and rec fishing, and so, in June of last year, BOEM published this draft guidance document and opened a sixty-day comment period, which concluded at the end of the summer, last summer.

We had mostly comments from organizations, seventy-nine comments from organizations, and a few from individuals, and it was determined, this summer, that consultations are required with tribal nations, and so that is going on this summer, and, at this point, we don't have a date when that final guidance will be issued. However, when it issued, BOEM is going to be having public meetings to publicize, or create a dialogue after the publication, about the final guidance with constituents, just to explain what was included and why.

Then, finally, just a reminder, and some of you may be aware of this, and some perhaps not, and so BOEM has an Environmental Studies Program. Some of the funds from the Environmental Studies Program are earmarked for the Renewable Energy Program, and BOEM publishes an annual studies development plan, and that gets posted online, at the URL I have listed, and it's called the National Studies List, and those study ideas are -- Those study ideas are developed into research projects, and those are reviewed by the Standing Committee on Offshore Science and Assessment, and it's called COSA, and that's convened under the National Academies of Science. If you want more information about that, including when those meetings occur, and those are all public meetings, you can just do an online search, and I'm sorry that I didn't put the QR code for that one, but those meetings are public, and they're held a couple of times a year.

Then, as I said, the studies are developed into research projects, and the results of those studies are then incorporated into BOEM's environmental assessments for relevant projects, and then they are taken into account during the decision-making process, and that's all I have, at least for a formal presentation, but I'm happy to entertain questions.

MS. COOKSEY: Thank you very much, Ursula. David.

MR. WEBB: Thank you, Ursula. Under the study ideas, would that be something that colleges, you know, students at colleges, would undertake, as reviewed by the assessment, just to see if it's valid or not?

DR. HOWSON: What happens with that -- One important thing that I did forget to mention is so BOEM sends out a call for ideas, essentially, and that happens at, usually, I think, November or December of every year, and, if Roger will put the presentation back up, I can put the QR code back up, and, if you go to the website, you can -- There were go.

Anyway, BOEM gathers ideas, and those ideas are then developed into study projects, or research projects, and then, at that point, we start -- We don't do the studies in-house, and so that's when we engage with partners, schools, academia, National Marine Fisheries, NCOS, and the like, and USGS and so on, and a lot of those studies, in academia, will support graduate students, and so that's how those studies come about, and then they typically take a few years at the end of that, you know, their publications, and then, once they're published and vetted, then that information then is incorporated into the environmental impact statements and so on. but please -- You know, I encourage anyone, if you have study ideas, to please go to that website, and, you know, you can submit those study ideas. It's best to get on the email list, and then you will get a notification, later in the year, when they start receiving those.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you for the presentation, Dr. Howson. That was very informative. Early on, earlier on, in the process for Kitty Hawk, Rick Robbins, who was the former chairman of the Mid-Atlantic Fishery Management Council, did their -- He was like their fisheries liaison, I believe, and Rick, I thought, did a very great study looking at the potential impact of Kitty Hawk Wind on not only the ecosystem itself, but also the fishing that was going on there, and has there been any work subsequent to Rick's work at all, and does BOEM still think he did a good job?

I mean, I have frequently sent the presentation that he gave to this panel, as well as to the council, to other people, as an example of what I thought was a very excellent analysis, and, of course, Rick had a big advantage, because, as a past council member, and a council chair, he was very familiar with all the databases and how to access and use those and do the analysis, and so I was just wondering if anything subsequent had been done and/or if his analysis was still being used as a good example of how to do that sort of analysis.

DR. HOWSON: I don't know the details, per se, but, if he submitted those analyses with the construction and operation plan, which I assume he did, then that is all incorporated into the -- Into the development of the environmental impact statement, and so the environmental impact statement is analyzing the construction and operation plan and all of the accompanying documents, and so, without knowing the details, I am, you know, quite sure that that would have been incorporated. If you need me to find out --

I think, and I just wanted to double-check my notes for one second, and I thought I had something else about Kitty Hawk -- No, and I don't think -- I thought I might have had some more notes about that, but I don't have anything specific about that, but, again, any accompanying documents that are submitted -- Typically, they're submitted as appendices to the COP, and they would be on the website also, the COP-specific website, and all those appendices are listed, and I would think that, if he submitted it, then that would be incorporated.

DR. LANEY: Okay. Thank you.

MS. COOKSEY: I had a question. Previously, Brian has reported some of the studies that have been completed, due to looking at EMF coming off of cables, and he had noted that they had found that the burial of the cables was a method of mitigating the EMF, as well as heat coming off of the cables, and so, within North Carolina, the Carolina Long Bay area, as we talked about previously, there is actually quite a lot of what we call pavement habitat, which is shallow habitat that may not allow full burial of cables, and are you aware of any research that looks at ways to mitigate EMF, or heat, coming from cables when full burial is not possible?

DR. HOWSON: The mitigation typically would be the scour -- (The rest of Dr. Howson's comment is not audible on the recording.)

MS. COOKSEY: So are there studies that have evaluated heat and EMF with the concrete mattress pads? Is that available?

DR. HOWSON: I think there are. Let me write a note to myself, and we do have an EMF white paper and some other materials that are online, and we have funded some studies about that. I can't recall if it is specific to concrete mattresses.

MS. COOKSEY: That would be wonderful, to share that, because those are some sidebar conversations, and questions, that we've had about how we can best approach dealing with that in these particular habitats, in the pavement habitats.

DR. HOWSON: That's also a concern, you know, as we move further north as well, because there are areas that are, you know, especially in rocky habitat in New England, and there are areas where, you know, you will have only scour protection over the top, and so I know we have studies, but I just can't think of them off the top of my head.

MS. COOKSEY: Okay. Great. Anne.

MS. DEATON: I just had a question, and I'm like picturing a mattress, and is it -- A concrete mattress, and how big are these mattresses, and how long do they -- Do they just put several together, if it's an extensive area of hardbottom, or what -- I am just trying to picture it.

DR. HOWSON: I can't recall the dimensions offhand, and maybe, you know, ten-by-twenty feet, something like that, and they're articulated, the ones that I've seen, so that they -- You know, there are joints, and they're, you know, pieces of concrete block that are held together, but there's a whole variety of types that are used, and so, you know, there are concrete mattresses, and I'm trying to think of some of the other alternatives, or options, that developers propose, and there is, you know, of course, the rock, engineered rock, and there's a push now, with the engineered rock, to go over the top and then more of a nature-inclusive design over the top of that, because the engineered rock is necessary for engineering purposes, to really ensure that the scour protection holds, but, you know, it doesn't quite offer as many nooks and crannies as more of a nature-inclusive design would be, and so there is that, you know, kind of push now to try to look at that, for the over-the-top sour design. There are also some other -- I want to say something like with webbing and fronds, but I can't recall the details, and so we'll just stick with mattresses for now, and rocks.

MS. COOKSEY: Paula and then Wilson.

MS. KEENER: Thank you, Ursula. It's nice to meet you, and I don't know if you saw the email, and I don't know if Brian forwarded you the email that we were having a working group meeting for our group that is charged with updating the energy renewable policy for the council, and so I hope you can stick around and join us for that.

The other thing that I wanted to mention, or just find out from you, is, as we look at updating this policy, do you have any high-level recommendations for us, specifically as it relates to wind? We want to be creative, forward-thinking, and I'm speaking on behalf of the committee now, but creative and forward-thinking and opportunistic, as we look towards updating the policy, and do you have any high-level recommendations? Thank you.

DR. HOWSON: I would say engage early and often, and so I think it's very important to engage with the lessees, or the developers, to start those conversations early, to engage with BOEM early, and I would say, you know, getting involved at the taskforce stage, which is, you know, very early in the process, in terms of developing lease areas, and then, you know, there are often taskforce meetings as that progresses, as the call area becomes developed into a wind energy area and to lease areas and so on, and so staying engaged at that process, as much as possible, I think is my biggest recommendation.

MS. KEENER: Okay. Thank you for that, and I know I said high-level, and we're looking at trying to have an update on the policy by fall, early fall, on the latest, or around early fall, and do you -- So the opportunity to get engaged in those items that you mentioned I don't think is there for us right now, in terms of -- I mean, maybe some of them are engaging with BOEM. However, immediately, do you have any immediate recommendations, as we look at drafting the revision? I know that's a tough question.

DR. HOWSON: I will be here this afternoon, if that's something that we can --

MS. KEENER: Yes, for sure, if we can talk about that during the meeting, and that would be great.

DR. HOWSON: (Part of Dr. Howson's comment is not audible on the recording.) -- kind of what you're looking for, in terms of high-level, but not that high-level.

MS. KEENER: Thank you.

DR. HOWSON: Sure.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Madam Chair, and so, picking up on Anne's question about the concrete mattresses, it causes me to ask if BOEM is taking a look, and/or the engineers who are designing these things, at the fact that, you know, if you can't bury the cable, and you have to put scour protection on top of it, if you're using a material that would be conducive to colonization by, you know, organisms that would be normally using that pavement-type habitat.

That brings to mind some possible questions about whether or not there are certain materials that are more desirable than other materials, and there's a huge literature about artificial reefs that might be very useful to BOEM, and to us as an AP, when we start looking at the possibility for that type of scour protection, and the other concern may be, depending on what type of material you use, are there things that leach out of that material that would be bad, as far as the health of the attached epifauna goes, things like that, and so is that part of the ongoing discussion, with respect to scour protection for cables that can't be buried?

DR. HOWSON: You've raised some excellent points, and, yes, those are very much part of the discussion. BOEM is currently funding, and it's actually just about to get started, a study on looking at different types of resources for nature-inclusive design, different types of material, and I believe that's supposed to be -- Those materials are supposed to be put in place this summer, at the CVOW project, or the CVOW research project, and not the full project, but the two-turbine project, and so we're funding that.

There are concerns about material leaching from the concrete, and there are materials that can be used that actually promote growth, and we've seen the development of that, in terms of the use of that with some of our projects, that the developers are promoting that, and we also have a conservation recommendation, or a condition of COP approval, that we have been developing, in conjunction with GARFO, that encourages -- Essentially, it requires, but there's always the technical feasibility issue, or economic feasibility, if the materials are actually available, but we have developed a condition of COP approval that will require at least, for a scour and cable protection plan, that the developer actually has to address it and tell us why they can't do that, and the default should be that they should do that.

DR. LANEY: Madam Chair, a follow-up on that, and I know this subject has come up in the past, but that's also, in terms of looking at the material type and lease shapes and all that sort of stuff, but the decommissioning, down the road, and I would hope that would be something that would be given some consideration too as well, and one of the reasons that I mentioned that is because of the discussion about how you recycle turbine blades, for example, and I know that's been a big issue, because, in the past at least, the materials that they were constructed from were not really readily recyclable, and, in some cases, the only way to get rid of a turbine blade that had used up its lifespan was to bury it in a landfill somewhere.

Now, I know that's a topic, again, that BOEM, I think, has been interested in, and the manufacturers are trying to address and make the blades out of things that can be more easily recycled, and so the mattress pads might fall into that same category, and I don't know, and, you know, obviously, it just depends on the life of the material that's used and so forth and so on, and so just something that I will throw out there again, that when we think about -- This applies to us as an AP too, and we need to think long-term, and not just short-term, and think about decommissioning and what happens in the future, when the turbines have outlived their design life.

DR. HOWSON: That's excellent points. Addressing the first one, the first comment that you had first, regarding the scour protection, something to consider -- It is a good idea to kind of keep your eye on that decommissioning, and it is thirty years down the road, but it's something important to consider. The consultations, the EFH consultation, the EA, and so on, will need to be reinitiated for the decommissioning. At that time -- Currently, the default is to remove everything, and so

that's something that needs to be considered then in the future, if that habitat has been developed, such that it would be more detrimental to remove the mattresses, when they have a lot of fauna, flora and fauna, on them already, and that's something to consider, but, currently, the default is removal.

To speak to the second half of your comment, regarding the blades, I'm not sure -- I'm not aware that BOEM is involved in that at all, and I could be mistaken, but I don't believe we are, but, from at least my understanding, as offshore wind develops further, there is -- It becomes more economical, the more turbines are there, and then the decommissioning becomes more economical to recycle them, and so I think, moving towards the future, I think that is a goal, but I can't speak to what the developers are planning.

MS. COOKSEY: I've got David, Paula, and then David.

MR. WHITAKER: Staying with the blankets, I didn't quite understand exactly where they would be placed, and is this nearshore, shallow sand-bottom areas, that you're thinking about?

DR. HOWSON: I'm sorry, but for the scour protection?

MR. WHITAKER: The sand -- Excuse me. The concrete blankets, and where would they be, exactly, in deep water or shallow water?

DR. HOWSON: They're typically where the cable can't be buried, because there has to be protection, and it has to be a low-relief protection, so fishermen can trawl over it and it won't create any hang-ups. We don't want just bare cable. The developer is not allowed to have bare cable right on the bottom, and so, wherever that cable can't be buried the appropriate depth.

MR. WHITAKER: Okay. Well, that was my question, and it's about trawling, fish trawling and shrimp trawling, that it would be designed such that they could jump those, perhaps with tapered edge on them or something like that, but I would also think some rugosity, such that colonizing animals are going to be more quickly fouling, so to speak, if it's got some texture, rather than a slick piece of concrete, and so I presume they probably know that, but I bring it up.

DR. HOWSON: It's a great point, a valid point, and so, to speak to the first item, which is about making sure that they're fishing friendly, that has been a concern in the Northeast, and we have developed a condition of COP approval, and I've mentioned a condition -- Let me step aside for a second, and the conditions of COP approval, and the COP approval letter, is essentially our permit, BOEM's permit.

With that permit, there are a series of conditions, much like the Army Corps. You know, when they issue a permit, there are a series of special conditions, and these conditions that I mentioned are these conditions of COP approval, where the developer is required to follow these. Otherwise, you know, there are penalties for lack of compliance and so on. One of the conditions of COP approval that we are developing is the -- To ensure that cable protection is of low relief, so that it is trawlable. You know, whether it's a cable -- Excuse me. Whether it's a concrete mattress or if it's, you know, rock scour protection, it has to be of low relief.

Then, to speak to the second, in terms of rugosity, yes, I had mentioned that earlier, but I should have used that term as well, because that is the appropriate term, and that nature-inclusive design study that we're looking at, as well as the condition of COP approval that we have developed, really requires the developer to at least look at and provide us with an analysis, if they can't do this, of creating the scour protection that is of a nature-inclusive design, with that increased rugosity.

MS. COOKSEY: Roger is going to jump in, real quick, and then we're going to get to Paula and then David.

MR. PUGLIESE: Just following up on that, one thing that I was curious of is has there been also -- You said the default is to have to trawlable, and we don't have, you know, a lot of trawl fisheries, and, basically, we have a shrimp fishery, and it only goes out a certain distance, and is there consideration to maybe vary that, larger boulders, larger structure, in areas where you may not have shrimp trawling or other -- You know, that's really the only one that would be affected in most of these areas, unless David knows of something.

DR. HOWSON: One thing I didn't mention, and I should have, is the measure, or condition, that we're developing does require the developer to look at the fishing history, back five years, of that area, to see if that's appropriate, and so it wouldn't be all over, you know, and it would only be in areas that show a history of fishing would be that low-relief type of structure or scour protection.

MS. COOKSEY: Paula.

MS. KEENER: Thank you. Can you give us an idea of the depth range of these structures? I am just trying to get a handle on how far offshore they're going to be, and what is the shallowest depth at which they would be constructed?

DR. HOWSON: For the turbines?

MS. KEENER: Yes.

MR. PUGLIESE: For Kitty Hawk.

DR. HOWSON: I don't know the depths offhand, and I'm sorry, because it's not one of my specific projects that I work on. In the Northeast at least, and the Mid-Atlantic, depths are anywhere from seventy to a hundred feet, about, but I'm sorry that I don't know Kitty Hawk, and I can get it to you by this afternoon though, and I can look that up.

MS. COOKSEY: David.

MR. WEBB: Modern technologies and for-profit corporations being what they are, thinking about these cables, and the decommissioning issues, what about when there's a flaw in the insulation around the cable, and it causes a deterioration, such that it has to be fixed, and it has to be repaired, and, along with that, in the decommissioning, whether the cable is buried or whether there is above-surface scour protection, and you mentioned this already, that removal might be more detrimental to the environment than just leaving it in place, but the cable itself, whether it's buried under sand or under these mattresses, but, at some point, they're going to fail, and so what analysis has been

done, if any, and is it even feasible, to look at what the cable is actually comprised of, and I'm guessing it's some kind of metallic materials, but, when those cables ultimately deteriorate, whether they're left buried or left under those mattresses, the impact that that has, and is that something that has been figured in, or looked at?

DR. HOWSON: Good question, and it's not something, in particular, that we have examined within the environmental impact statements, because the developers are out there doing cable inspections, frequently, and I don't know the frequency, and that's something I could find out from our engineering branch, but they are required, and that is a condition of COP approval, that they are required to do inspections. Plus, for them, it's good business. I mean, they need that electricity flowing, and so I think any -- You know, anything that would affect the electricity flowing, they would want to correct anyway, but I think the assumption, at this point, is that it would be corrected quickly, because of those site inspections, or the cable inspections.

MR. WEBB: But, more importantly, if the distribution cables are going to be left in place, if the structure is taken down, and the blades are recycled, but it's determined, especially if it's buried, or under this habitat that now we've created an artificial reef -- If the cable is going to be left in place in perpetuity, it will deteriorate at some point, and so maybe it would be worth looking at what actually the composition of the cables are, so that, when that does happen, fifty or sixty or seventy years down the road, because it's been abandoned, we know what's going to be coming into the water and whether it's something that can be mitigated, or dealt with.

DR. HOWSON: (Dr. Howson's comment is not audible on the recording.)

MS. COOKSEY: That's actually really intriguing to think about, and, obviously, it's not something that is being discussed at this time, and so it might be interesting, at a future meeting, to get more information about what are the materials that are used in the cabling, and what are the materials being used in the bases of the turbines, so that, if we can begin thinking about what it would mean to leave in place underneath all of these structures that are being created. David.

MR. WEBB: My editorial comment is this could potentially end up being one of those things where they do everything that we think is important, especially if it's the mattresses, and we create artificial reefs from the windmill turbines, all the way up to the beach, and it's a wonderful thing, and we've got a lot of fauna, and it's good, and then they're going to decommission that cable, and it turns out that it would be detrimental, at some point, because of the materials, and they say, yes, but do you want us to tear up all the artificial reef, just to get that bad wire out of there, and so you picked -- I would just offer that, if we could put a little foresight into it, and I know it's not part of the legal structure that the lessee has to go through, but that might be something that we want to at least start asking questions about.

MS. COOKSEY: Right. Something as us, as the Habitat AP, can begin asking those questions. Wilson.

DR. HOWSON: Could I --

MS. COOKSEY: Please.

DR. HOWSON: All of that information is available, and I can get it for you, Cindy, or for the committee, and it's all -- All of the information regarding the construction, or the materials that are in those, would be in the construction and operations plan, and so they should be readily available.

MS. COOKSEY: Thank you. Wilson.

DR. LANEY: David has raised a very interesting point, and I think a similar sort of discussion is occurring in the Gulf of Mexico, with regard to oil platforms who, you know, have lived their useful life, and whether they should be retained as artificial reefs and so forth and so on, and so this is a question for Roger, I guess, and so, if memory serves me correctly, the South Atlantic Council does consider artificial reefs as EFH, and so the point David makes is a good one.

If the hard structures that are associated with the turbines, as well as the cable and the concrete mattresses for scour protection and so forth and so on, are heavily colonized by epifauna, and then become essentially de facto artificial reefs, then would they be considered EFH at that point, and that raises the whole question about liability, I guess would be the right term here, for the developers themselves, and I can give you an example, from a totally different arena, of the consternation that that might create at some point in time.

The example I will give you is from North Carolina, and I think Anne and Casey are probably well familiar with this one, and that is, in the past, in North Carolina, we had all these dams that were constructed, and many of them have -- The smaller, low-head dams have outlived their usefulness, and so are being removed, but the Corps of Engineers, who has jurisdiction over wetlands, has come in and said, well, because you put this dam here fifty years ago, or sixty years ago, and I'm thinking Milburnie, then you raised the water level, of course, and the pool of the dam, and that creates, or establishes, wetlands in some of the tributaries, because the water level was raised, and then the Corps said, well, under Section 404, you have to mitigate the loss of those wetlands, even though you're restoring the habitat back to what it was historically, and originally, before the dam was put there, and then current practice is to address the mitigation for those wetlands.

I'm just saying that it seems to me that this situation, with the possibility of mini artificial reef development at turbine sites, is similar to that, in that, you know, you are possibly creating a habitat that would benefit fauna that the AP would like to see benefitted, but, at the same time, you create a situation where, in the future decommissioning timeframe, then the council may look at it and say, and NMFS may look at it and say, well, it's EFH, and so you're going to have a negative impact if, right now, the default is removal.

Again, that's a design consideration that we ought to be thinking about, as an AP, for the long run, you know, and it will be hard to make a call now, because we just don't have examples. We don't have projects that have been in the water long enough to give us any insight into, you know, what to do, and so the question is, and that David has raised, is a good one. You know, is it better to try and design something that could be left in place as an artificial reef, or is it better just to design it so that it can be easily recycled and removed?

MS. COOKSEY: David.

MR. WHITAKER: Well, to follow-up on that line of thinking, if they become EFH, then the trawlers can't go over them, because they're EFH, and so we're creating another problem, and maybe we need a slick concrete, so they don't collect anything, if you want to protect them from -- But, then again, we may not have trawlers twenty years from now, unless they're electric maybe, but --

DR. LANEY: To follow-up on David's point, I can speak from almost first-hand personal experience. In working with Roger Rulifson at East Carolina, to try and design deployment hardware for acoustic receivers off Cape Hatteras, it is really hard to design something that is slick and non-trawlable, and I agree with you, and, I mean, that would become the ideal. If it's going to become EFH, and we say, okay, you can't trawl over it, I mean, what do we do?

He came up, they came up, with what they thought were some relatively trawl-proof deployment hardware at East Carolina, and, you know, even if the trawlers didn't catch it, Mother Nature creates problems out there, again because of the dynamic nature of those sand fields off of Cape Hatteras, and the fact that the sand moves around and buries things, and/or relocates things, and so, yes, that's a challenge, but I would really be thinking about all of this now, as opposed to thinking it about thirty or forty years from now, because I won't be here thirty or forty years from now, and so a number of us around this table will not be here, and so let's try and be very insightful in our thinking.

MS. COOKSEY: Paula.

MS. KEENER: I agree, and another issue that we've talked about, or not issue, but opportunity that we have talked about, is how some of these platforms can be used for exploration and the dimension of time, and so data is typically very expensive to collect, and so, once you start collecting a time series of data, if it's decommissioned, there goes your time series, and so that's another consideration, moving forward. Thank you.

MS. COOKSEY: Casey.

MS. KNIGHT: I know decommissioning is a huge topic, and I agree with Wilson about having the foresight on that, but I kind of want to peel it back a couple of years and just ask about general maintenance and how that is kind of planned to be executed, and I know there's oil involved, and bearings involved, and that maintenance has to be kept up, and, obviously, sometimes accidents happen, and, you know, I've seen one first, and I've seen, you know, some pictures of things going on that, obviously, we don't want to happen, but what are kind of the foresight on the plans for maintenance and avoiding these environmental issues?

DR. HOWSON: That's a good question, and so, because maintenance, operations and maintenance, is a stage in the windfarm process, development process, operations and maintenance are considered components of the construction and operation plan, and so, because of that, they are evaluated under NEPA, and so EPA is involved, and there are EPA permits that need to be procured for air and water.

There are, you know, full analyses, in terms of anticipated quantities of releases, and, you know, it's the whole section in the EIS that would address that. There are also sections in the EIS for potential accidental releases as well, and so I can't -- Unfortunately, I can't speak to the details,

since I'm the fisheries biologist, and I don't -- You know, I don't really address those in detail, but all of that is typically analyzed in the EIS, and so, if you want to get a sense, like I said, of what to anticipate for some of these projects, for instance, CVOW, you know, already has their DEIS on the website. You can take a look at how CVOW encourages it, because, as I said, their DEIS is already on our website, and they are developing the FEIS, but, in the DEIS, you would be able to find the approaches that are taken, under NEPA, to evaluate those.

MS. COOKSEY: Anne.

MS. DEATON: I just had a question, and so, if you decommission a turbine, because the blades get dull, or something, over time, but the lease holder still has the lease, wouldn't they want to like decommission, as equipment gets old and faulty, and put in new equipment, in the same location?

DR. HOWSON: It's actually a different term, and so, if something becomes faulty, or dull, or whatever happens that they have to replace it, that's part of the operations and maintenance component that's occurring within that thirty-year leasehold, and so they only have thirty years that they can, you know, have that windfarm in existence, and so they can replace it, if they so choose, within that thirty years, and, again, that's just considered part of maintenance.

MS. DEATON: Or renew the lease after thirty years.

DR. HOWSON: After thirty -- Sorry.

MS. DEATON: Because they have a big investment, I would think they would want to renew the lease.

DR. HOWSON: I don't know all the details, and maybe, if Seth is still on the call, he may be able to speak to that better, but they -- I believe they need to decommission completely, and I don't know if they have access to that lease afterwards or if they -- If they were going to develop another project, they would have to go through the whole NEPA process again, you know, and so, again, I don't know all of those details. As I mentioned before, you know, the default is everything needs to be removed, unless it's determined otherwise, as with this discussion. You know, if the foundation should be left in place, that's a discussion during decommissioning and not just a discussion, but a full analysis, and, as I said, the consultations need to occur again, and so on, and so that would be held at that time.

MS. COOKSEY: Tom.

MR. JONES: At the end of the thirty years, do they have to remove -- When they decommission, do they have to remove all of that equipment?

DR. HOWSON: (Dr. Howson's comment is not audible on the recording.)

MR. JONES: Great. Thank you very much.

MS. COOKSEY: I am going to jump in here, real quick, because this has been an absolutely wonderful conversation, and one of the key questions that I now have, that may be a question that we wish to push up to the Habitat Committee and the council, which is how will we treat the EFH

that is created by these hardbottom habitats that are going to be created with scour protection, and, as we are in the process, as we discussed yesterday, of providing clarification to our EFH designations, through our five-year review, that may be a question that the council needs to give a great deal of thought to, and get ahead of, on the clarification purposes, of will we treat it as EFH, or will it be excluded from the EFH designation, and I don't know, but I feel like that is a question that we may have to delve into in the very near future.

DR. HOWSON: Cindy, could I add some information that might be helpful, since you're already thinking about considering that? Just a few more details, to familiarize yourselves with the potential of different foundation types, and so we talked about scour protection, right, which is, you know, the concrete mattresses, or engineered rock, with, you know, with a potential nature-inclusive design over the top and so on, but, at each foundation -- You have the foundation, and then there's also scour protection around the foundation as well, which is creating more habitat, and there is, again, that kind of understanding that we want to move towards a nature-inclusive design, at least on top.

You know, the developers are constrained by serious engineering concerns that need to, you know -- They are required to have certain types of rock against the foundation base, and it's more on top of it, kind of the veneer on top, or, you know, the layer on top that would create the rugosity over the top of the required scour protection, but there's also different foundation types, and so there is a jacketed foundation, which are the jacketed piles, kind of like oil rigs would be, which are, you know, with the different legs, and there's a monopile, which is just one large foundation going in, but now we're seeing suction buckets and gravity-based foundations as well, and suction buckets is pretty much as you would imagine.

If you took a bucket, and you put it on the sand, and then you withdrew the water between the sand and the top of that bucket, it would pull the bucket down into the sand, and so that's an additional foundation type, and you have to think about the water withdrawal that would be in that bucket, essentially, and so that's one foundation type, and then the gravity-based, which is essentially just a large foundation that's just sunk into soft mud, and I think you guys don't have to worry about floating wind at this point, and you're shallow enough that that doesn't need to be considered, or you don't need to be concerned about that.

MS. COOKSEY: My understanding is each of those different types has a different amount of scour protection.

DR. HOWSON: Yes.

MS. COOKSEY: That may be required, and, just for everyone's awareness, for Kitty Hawk at least, the habitat minimization alternative that we've been putting forward would seek to ensure that the wind turbine generations we're recommending -- That they use a pile that has the least amount of scour protection that would be required to go along with that, because that is one thing to consider, that, in essence, in these areas, scour protection is a habitat conversion, and, as we deal with all of these questions arising, like what are we going to do once it's converted, a minimization technique that can be utilized from the very beginning is to minimize the amount of habitat conversion that occurs in the first place, and so that is something that Fisheries and BOEM and the lessees are already in discussions with.

DR. HOWSON: If I could correct one of my statements, and I said you don't have to worry about floating wind, but you actually do, and that is another concern, because of the central Atlantic, and so I don't know how far up, you know, you're looking, or how far up SERO is involved, in terms of projects, but, you know, floating wind is being considered, or not is being considered, but could be on the table for those deepwater lease areas in the central Atlantic wind energy areas.

MS. COOKSEY: Wilson.

DR. LANEY: Just one more little thought, and I will defer to my Florida colleagues on this one, but, going back to our discussion about material types and David's point about rugosity and slickness, in terms of colonization, we might be able to gain some insight, although I think the variety of materials used is probably very limited, from the live rock industry.

Going way back when, Roger, when we were talking about, you know, the coral amendment, and live rock, and propagation of live rock for the aquarium trade, I know we talked about materials, and I think, at that time probably, they decided that -- They being the live rock harvesters, but they decided that the types of materials that you could use, that would be readily colonized, and provide the kind of epifaunal aggregation that you would want for an aquarium, were very limited, and so, you know, maybe yes, and maybe no, and there may be some useful information there in the literature that we could look to that would give us some insight into what type of material would be more readily colonized.

Then I like what you said, Cindy, about, you know, trying to minimize the amount of scour material, which is good, and that might also, in the long run, help to resolve the EFH question too, because, if you minimize the habitat change, by keeping the scour material to a minimum, then that would also, theoretically anyway, you know, kind of limit the potential for -- At least limit the amount of EFH that might develop around each structure, and so it might help to resolve that issue, in the long run.

MS. COOKSEY: David.

MR. WEBB: Real quickly, it might even be forward-thinking to consider a different definition for that type of EFH, as something that's created consequential to something like a project like this, that wasn't there before, and it still needs to be managed, but maybe managed in a slightly different way than we would other EFH.

MS. COOKSEY: There's a lot of complicated questions that I think we're going to need to soon consider, as these projects get closer and closer to construction. Before we move on to the update on Carolina Long Bay, I wanted to see if we had any questions or comments online. Okay. Well, Ursula, thank you, again, so much for your participation here, and hopefully -- It sounded like you were going to be able to remain through the afternoon, for the energy policy discussion.

DR. HOWSON: Yes. I'm here all day.

MS. COOKSEY: Excellent. Good news. Let's take a ten-minute break, which will take us to 11:00, and we can get ready for our colleagues with Carolina Long Bay, Total and Duke. Thank you.

(Whereupon, a recess was taken.)

MS. COOKSEY: Welcome back, everyone. I do want to turn it over to Paula, very quickly, and she has an announcement for the offshore energy subcommittee members.

MS. KEENER: Thank you, Cindy. As most of you, or I hope all of you, know, we are having a working lunch meeting today, and we will be in the restaurant here, and I have asked them to reserve a table. I have some menus, so that we won't have to waste time, and we can be very efficient in our work, by circling what you would like on this menu. Just raise your hand, and I will pass the menu to you, and then I will come around and collect it and give it to them prior to lunch. That way, it can be ready. Thank you. Thanks, Cindy.

MS. COOKSEY: That sounds wonderful, and, just to kind of go over how the rest of this morning and this afternoon will work, we are being joined by our representative from Duke Energy and TotalEnergies, and then, once we have finished up the offshore wind energy section, we will break for lunch, and lunch will be a long break, an hour-and-a-half break, in order to allow time for the energy policy working group to have their working lunch, and then we will come back and jump into the policy statement on energy. Okay? I want to extend my welcome to Nathan and Jen. Thank you, both, so much for joining us again and being able to share updates on Carolina Long Bay.

MR. CRAIG: Thank you, and thank you for inviting us back. You know, we came here in November, and we had a lot of good insights there, and we've been meeting with agencies, and we've been getting a lot of good input on different aspects of how we need to go about developing the site, and so these meetings have been really beneficial to us as we move through this development phase, and it's really early for us, and so it's good to get this information in here, and we can put it into our workplan, put it into our design activities, and really start considering these things early in the process, and so thanks for having us on the agenda, and it's been a lot of help for us.

Again, just as an introduction, I'm Nathan Craig, and I represent Duke Energy Renewables Wind, and my role on this project is really looking at the project from the environmental issues, the environmental standpoint, looking at it from environmental permitting, you know, making sure that we're collecting the right information, and the necessary information, for BOEM and all the regulatory agencies, so that they can do their regulatory obligations in reviewing the project when we get to kind of the COP phase of the effort.

Online, we have Katherine McGlade, and she's our fisheries liaison for Duke Energy Renewables Wind, and she's out of Hatteras Village, and, Katherine, I don't know if you want to do a quick introduction.

MS. MCGLADE: Good morning. Thanks for having us this morning. I'm Katherine McGlade, and I am, by trade, an oyster farmer out of Hatteras, North Carolina, and I'm a graduate of the Duke University Marine Lab, and so I have other small amounts of dangerous skills, and I'm very pleased to be part of this project. We remain in the early stages of our outreach efforts, focusing mostly on the prospective of our upcoming survey work, and, with respect to the partnership with Total, we've been focusing on coordinating our messaging, so that we don't put anything

confusing out there to the stakeholders, and so Bill Habich is representing Total, and he and I are working very closely together and moving forward on this project and stakeholder outreach.

MR. CRAIG: Thanks, Katherine. Jen, do you want to introduce yourself?

MS. BANKS: Sure. Hi, everyone. I'm Jen Banks, the Permitting and Developing Director with TotalEnergies for the Carolina Long Bay project, and I just wanted to say thank you, and I will second Nathan, in terms of thank you for having us back, and we're happy to be here and sharing some more updates on what we're planning to do this year, and hopefully get some feedback from you all on those activities as well. We also have our fisheries liaison on the online system, and his name is Bill Habich, and I know he's a bit under the weather, but can we -- I know Bill is under the weather, but, if you want to say hi and introduce yourself, briefly, that would be great.

MR. HABICH: Hello, everyone. My name is William Habich, and I go by Bill, and I'm the fisheries liaison for the Carolina Long Bay for TotalEnergies Renewables. I think Katherine said it best, and they are working closely, and we are still very early in the planning stages, but just thank you guys so much for having all of us here, and so thank you.

MS. BANKS: Thanks, Bill, and so, just really quickly, I handle our permitting and environmental -- I'm sort of -- Nathan and I are sort of the similar roles in our respective companies, and I also oversee some of our stakeholder engagement efforts for the project, and so thanks. Thanks for having us.

MR. CRAIG: Just real quick, we'll go over the lease descriptions at the beginning, and we'll talk about what we've done from the communications side, and then we'll really focus on where we're focused this year, and that's really approval and deployment of met buoys, and then we'll talk about the survey activities that we're looking to conduct this fall, and then we'll go into some of the geophysical desktop study that we conducted as part of our -- Kind of what we're calling a constraint analysis on the buoys, and then we'll talk about next steps, and we'll get into that.

Just a real quick reminder, you know, these are two separate leases, two separate development activities. TotalEnergies has, you know, 0545, and Duke Energy holds the lease for 0546, but, as Bill and Katherine and Jen have already stated, we're doing a lot of work jointly and collaboratively. One, it's to reduce the burden on the others, the stakeholders, as well as the regulatory agencies, but also to seek some efficiencies within the development process, and so you'll hear today that we're doing a lot of things jointly, and we're working really close together on messaging, as well as, you know, plan submissions and future development activities, but, at the end of the day, we're still two separate developers moving forward in this process.

What we've done thus far is we've submitted our communications plans, and the lease requires us to have three different communications plans, and one is the agency communications plan, and this is where we engage with all the regulatory agencies, both North and South Carolina and the federal agencies, to seek feedback early, as well as, you know, seek insight on what information needs to be collected, how that information needs to be collected, and to keep agencies apprised of our timeline, so they can plan for when their reviews and actions need to occur.

We've had our interagency meetings, kind of dealing what we're doing this year, and we finalized those plans, and those plans are available to the public, and we plan to post those plans as soon as

BOEM finishes their guidance, and we'll revise them and make sure it adheres to the guidance, but then we'll post it on the project website at that time.

We've also got a fisheries communications plan, which really details how to engage with the fishing community, and that's what we're in the process of implementing now, and, again, this is two different plans for each developer, and those, again, will be posted and are available to the public at request. We've also started to engage with Native American tribes, and we had our meeting with the federally-recognized tribes in April, and we are also engaging with the North and South Carolina state-recognized tribes, and we're having our meeting with them next week, and so we're trying to really engage with these different communities, fisheries and Native American agencies, early in the process and try to seek that feedback as we go through the development phase.

We do have our semi-annual progress report, and this is another requirement for the lease. For the first half of the lease, and that covered June to December of last year, and that's posted on BOEM's website, and our next report will be due at the end of this month, and then, after BOEM finishes their review, we address any comments, and I suspect they will post that one as well on BOEM's website. With that, I will turn it over to Jen to talk about our 2023 focus.

MS. BANKS: We are planning to put out buoys to collect data in the lease areas, and we will have a buoy within each lease area, centrally located, that will have a floating LiDaR, and then we're also looking to have a met ocean buoy, or environmental buoy, that would have -- Really, I think, mostly, it's an opportunity for us to have a third PAM monitor, and so those two floating LiDaR buoys will have PAM, and so will the additional one, so that we're able to triangulate.

We also, based on our lease, are required to have a MOTUS wildlife tracker on the buoy, and I'm not sure if we're going to have a third one of those, and I think that's something that's up for discussion, if it is something that is helpful, and I'm not terribly familiar with that technology, but these are -- A lot of these are things that we're hoping to get some feedback from you guys on, and so, if anyone has familiarity with that, it would be great to hear your thoughts.

Where we are right now, in terms of the timeline for this, we have to do our surveys this year would then feed into our site assessment plan, and the site assessment plan would give us the approval from BOEM to put the buoys out, and so we have submitted that survey plan to BOEM, and we have a call out, and we've received proposals to do that survey work, and we're hoping to be able to start those surveys in July or August of this year, and those survey activities are pretty minimal, in terms of timeframe, since we're only looking at those three locations.

We would add additional locations if we determined that the preliminary locations are not suitable, but, if all goes well, and I believe that Nathan will talk, a little bit later, about our desktop study, and so we've done a lot of pre-work, to make sure that we have sites that we believe will be suitable.

Just sort of going through the rest of this timeline here, once we've done those survey activities, and gathered that data, we're able to put that into our site assessment plan, and BOEM reviews that, and then, once we have approval, we would be ready to deploy the buoys, and, ideally -- Ideally, we'll get the approval before, or around, the first quarter of next year. In terms of the

exact deployment date, that will depend on a lot of factors, but we are hoping to deploy them as quickly as possible, so we can, again, be collecting data.

As I mentioned before, we're looking to do this survey specific for the anchor areas for the buoys, and we're looking at 300-meter-by-300-meter-square plots, collecting high-resolution geophysical on thirty-meter line spacing, within that area, and we say here five or more, and our survey plan needs to cover all eventualities, and so this gives us some leeway, in case we need to survey some additional areas.

We are planning to have some real-time data review. Because it's such a short campaign, we would be able to ensure, in real-time, that we're getting the data that we need to be able to clear these areas, so that, if we do need to add areas, then we know that before the vessel demobilizes and comes back to shore. I think I covered most of this, and so, yes, we'll also have benthic grabs that we'll take at each site, and we'll do some video transects, to characterize the benthic resources, and the main purpose of that HRG that would be done is to ensure that we can clear these areas from an archeological perspective.

I won't get into a lot of this, unless there's questions, but these are the proposed equipment that we're looking to use, in terms of the multibeam, side scan, magnetometer, gradiometer, is the likely situation that we would use, and then the benthic grab samples, and we're looking to use the Van Veen grab, and the video transect to get data in the area, and I think that was something that was of interest, and we had some comments on that previously, in terms of the value of that data, if it is usable, and so that's another item that we'll try and QA/QC while we are offshore, and make sure that we're getting usable data, and, if not, maybe try again, if the conditions are not suitable, one day or the other.

MS. COOKSEY: Wilson.

DR. LANEY: I think, on the previous slide, there was a mention of a third buoy for biological monitoring, and I was wondering what detection capabilities that buoy would have, and, specifically, I am thinking, you know, northern right whale, or other marine mammal vocalizations, but also bats, is one that I know has been used on some other buoys, and then, from a bird standpoint, is there going to be any proposed avian monitoring as well?

MS. BANKS: We will have PAMs, passive acoustic monitors, on all three of the buoys for marine mammal vocalizations. We will have the MOTUS wildlife tracker on at least two of the buoys, and we are considering all other options, and I will say that, and so we're considering, you know, the potential to have bat detectors on the buoys, and we've gotten feedback, previously, regarding some fish sounders, and I don't know exactly what they are, but listening for fish tags, and we're open to others, to any other suggestions.

We are trying to outfit with these as much as we can, to provide data that's useful to us and to others, within reason, obviously, but we're happy to hear from you guys, if there's suggestions, or even thoughts on specific equipment that we should consider.

One other thing that I will mention that we're considering for these buoys is the potential to have cell repeaters, and that's something that I've heard previously from fishing interests, that it would be great to have that, so that you have some cellphone coverage offshore. Additionally, the

potential to have very basic data, or weather data, available, in somewhat real-time, and, obviously, it's not our weather data at hub height, or anything of that nature, that we would be sharing, but sharing some data on weather conditions in real-time on a website that people could access, and that's also something that I have heard would be helpful, or beneficial, and so anything of that nature that you have feedback on, or suggestions, we're happy to take the suggestion and go back and determine if it's something that we would be able to consider.

MS. COOKSEY: Paula.

MS. KEENER: Thank you for that presentation, and it was very informative. Who have you reached out to, in terms of agencies or organizations, to inform sensor positioning on the platforms thus far?

MS. BANKS: We've had two separate multiagency meetings, where we had state and federal agencies engaged, and we've also had some more specific one-on-one meetings with some of the state resource agencies, and so I can -- If you're looking for a complete list, we can provide that afterwards. If there's a specific agency that you're concerned that we might not have reached, if you want to ask about that, I'm happy to let you know.

MS. KEENER: Thank you for that. Have you done any work with SECOORA, the regional observing system for the Southeast?

MS. BANKS: I am not sure that we have spoken with them specifically, and I have worked with the ocean observing groups previously, and so I will make sure that we reach out to them specifically.

MS. KEENER: Okay, and can you describe how, if and how, Duke University is involved in your work?

MS. BANKS: So we're coordinating with them, and I know that Duke Energy Renewables is on the advisory board of the Wildlife and Offshore Wind, and TotalEnergies is considering becoming more involved in that group as well, and so we're -- I mean, we're coordinating with some of the professors there as well, and trying to make contacts at all of the marine labs along the coast, and I will turn it over to Nathan, if there's anything else, because I'm not sure that I know everything that Duke Energy Renewables is doing.

MR. CRAIG: We're on, like Jen said, the advisory board for Project WOW, and so we've been participating in those updates, and we're looking to engage with Duke University, as well as other universities, on some of the monitoring equipment, sensors, and then data analysis, going forward. We've only had some preliminary discussions with them thus far, and we're just looking to get more scheduled, as we move forward.

MS. KEENER: Thank you.

MS. COOKSEY: I have a quick question, and it's probably already been taken care of, during the multiagency meeting, but I had mentioned recommending using a young modified Van Veen, with a 0.04 square-meter sampling area, and is that what is up there? I can't read it.

MS. BANKS: It is.

MS. COOKSEY: Okay. Perfect. I just heard Van Veen and panicked, and I was like, no, not the Van Veen.

MS. BANKS: Apologies for not saying the full name, but, yes, we heard that feedback, and we have implemented that.

MS. COOKSEY: Perfect. Thank you. Roger.

MR. PUGLIESE: Is there going to be surface to bottom current, or temperature, collection, or is that something possible, especially the temperature?

MS. BANKS: That is definitely something that is a potential, and so we have not -- I mean, in full honesty, we have not designed these buoys yet, and so we're still in the process of gathering all of the data, in terms of what people would be interested in understanding, and also what our engineering teams need to know, and I know, previously, I have equipped these sorts of things with ADCPs, the acoustic doppler current profiler, that does some of the wave data as well, and so I think, at this point, everything is on the table, and so, if there is specific types of data that you're interested in, certainly let us know.

I will say that -- Apologies, but we do have a few more slides, and I am happy to continue taking questions, but I will say, for one last thing on the equipment that we're planning to use, nothing that we're using for the surveys this year are within the marine mammal hearing threshold, and so we do not have an incidental harassment authorization for this year, but likely our survey activities that we're planning, potentially, to do next year would need an IHA, but just to put that out there for everyone.

AP MEMBER: Is salinity one of the things that you're going to be looking into?

MS. BANKS: Salinity?

AP MEMBER: Water salinity.

MS. BANKS: That's a good question. We'll put it on the list.

MR. PUGLIESE: It sounds like we're early enough that a lot of these opportunities for considerations are on the table, which is great.

MS. BANKS: Absolutely.

MR. PUGLIESE: I think, you know, some of the fisheries acoustics, opportunities for collaboration with SECOORA, and they have a FAC network that connects -- Lisa is trying to connect all the different acoustic capabilities, and so maybe -- We may have a representative from SECOORA at the next meeting or something, and you could have that dialogue, to kind of expand it and work with you all, because I think, you know, this is just really a great thing, especially if we're talking about expanding capabilities within the system, to highlight how many different players will be affected, and benefits for the fishermen, to the acoustic network, for other things,

including hurricane monitoring, but then a testbed for some of these different gears that could potentially be expanded and so I think that's a huge opportunity, and I appreciate the willingness to have that, and those are some of the things that we could weave into as potentially opportunities within the policy, as it gets developed, and so I think, you know, it's a very good time to be having all this dialogue, and so I really appreciate all the detailed input.

MS. BANKS: Absolutely, yes, and we appreciate your feedback, and we appreciate the collaborative nature of what we're trying to accomplish here.

MS. COOKSEY: Anne.

MS. DEATON: I was just going to mention, and you may already be aware, but BOEM issued an RFP to UNC Wilmington to do extensive monitoring around Frying Pan Shoals, and so it's not exactly in the same spot, but it's fairly close, and so you might want to see what they're doing, and there's going to be fish -- Several types of fish monitoring, circulation, I think, benthos, and so it's a two or three-year study only, but pretty comprehensive.

MS. COOKSEY: Kevin.

MR. SPANIK: Sorry if I missed this, but are those buoys -- They're just kind of exploratory for pre-site development, or is that something that would kind of be intended to stay onsite into the future, after the development?

MS. BANKS: They are primarily intended for collecting site-specific data to feed into our engineering design, in terms of the wind speed, and so the floating LiDaR allows us to get wind speeds at hub height, and then it's also an opportunity, obviously, to collect all the other data that we've been speaking about. Typically, for the wind data, you need one to two years of data to advance the engineering design, but there is the option to leave them out there, and they don't have to be removed. I am not sure that we have decided the timeline for these, but that would be something, again, if we are collecting data that is very valuable, and would be helpful to continue that data collection, then that's something that we could consider.

MR. SPANIK: It seems like a really good opportunity to have some baseline and some comparison data afterwards, to see if it's affecting any kind of migratory routes, if you're still detecting whales and birds and things like that along those corridors, too.

MS. BANKS: Yes. Thank you.

MS. COOKSEY: Casey.

MS. KNIGHT: Along the same lines as the animal movement collection data, you know, I think adding some acoustic telemetry receivers to these would also be very helpful, at least to some of our research as well.

MS. BANKS: I am not sure if it depends on which receiver we have, to like what tags we hear, things like that, and so making sure that, if that is something that needs to be considered, that we consider it, so that we're collecting data on the actual species that we're most concerned with.

MS. KNIGHT: Yes, and I can definitely get you that information. I think, right now, everything that we, at least North Carolina, has out there tagged would be picked up by a VEMCO receiver though.

MS. BANKS: Thank you. I think this is yours.

MS. COOKSEY: We have a question from Wilson.

DR. LANEY: No, and just a comment, and I think, to follow up on what Kevin and Casey said, in terms of collecting data, longer is always better, generally speaking, and that has been pounded into my brain by our stock assessment people, through decades now, and especially the acoustic tag detection capabilities, and those data have proven to be hugely useful, and I will give you an example.

When Dr. George Sedberry was still the director of Gray's Reef, they were putting acoustic receivers out, because they were doing some acoustic tagging within Gray's Reef, and one of the side benefits of that turned out to be that they picked up these Atlantic sturgeon that were visiting Gray's Reef, and they were sturgeon that had been tagged in Delaware, and I don't know about other people, but I had never considered the fact that Atlantic sturgeon that were tagged in Delaware would be visiting Gray's Reef, and I've had discussions with George about that, and Kent Smith, who is with Florida Fish and Wildlife Conservation Commission, has the hypothesis that they are there because they like to eat brachiopods, and I did ask George, and I said, so are there are brachiopods at Gray's Reef, and he said, yes, there are, and so that could be why they're there, but the point is, if you didn't have the receiver there, we wouldn't have ever known that those animals were making that kind of long-distance migration to the South Atlantic, to use Gray's Reef.

I know all of the researchers who have put in all these acoustic transmitters, and all these different species, would be very, very delighted if, you know, you all were able to put those detectors on those buoys and be able to share that information with them, and they're also very good -- Most of them are very good about, you know, sharing the animals that they have out there, and how many tags they have out, and that gets back to Casey's comment, and I think a lot of them are using the R2 receivers, and the same company for their acoustic transmitters, and so that makes it somewhat easier. There is a whole network of ACT that encourages that kind of collaboration, and so you all may want to, at some point, talk with them.

MS. KNIGHT: That has been changed, and it's now MATOS, and I cannot give you the acronym, what it stands for right now, but that's our acoustic telemetry kind of database right now.

MS. BANKS: Thank you, and I think I dealt with them a little bit in trying to listen for sturgeon in Long Island.

MR. CRAIG: Again, what we're looking for in the buoys is to really have two buoys within each lease area, but the focus of that is really collecting data for the design, and the operation, and for the turbines themselves, and having one in the middle that would be really focused on biological, to gain the triangularization, but, also, we need to put additional sensors on that buoy, as well as the surface, and it's a good opportunity to do that as well.

These are the primary locations that we're looking at, and, mainly, it would be, you know, Locations A or B, which might be kind of hard to see up on the screen, but those are the ones in the center, or the ones in the center of each lease area, and then there's D and E are in the middle, and that would be where we would want to put, you know, some sort of biological monitor there, and so what we've done is -- You know, I'm sure that everybody is aware of the report, and the efforts, that were conducted by BOEM and NOAA back in 2013 and 2015, and published in 2016.

We went out and contracted with Geodynamics, who conduct a lot of that survey data, to really look at the seafloor and hardbottom habitat and try to make sure that we position these buoy locations in areas that is going to give us the best opportunity to find a site that's suitable for a buoy deployment.

What they did is they did what we're calling a constraint analysis, and they took all of that existing data and looked at it and made recommendations on where to put these buoys, based on, you know, the seafloor and what's been mapped in the past, so that, when we go out there, we're looking at -- Hopefully, we will reduce the number of surveys down from three locations, and not be, you know, throwing darts at a board to find a suitable location.

That's kind of this effort for this geophysical desktop study, and we also took that information and started building the database for the full site, which can be used when we go out there and do the full HRG surveys, if we're going to do those next year, and then that will kind of feed into the overall design of the turbines and windfarm itself, and so that's been completed there, and, you know, when we originally kind of had some of our locations out there, they did shift a little bit, based on this analysis, to really give us the best opportunity to find suitable locations.

Again, you know, when we go out there and do these surveys, we will be taking necessary measures to minimize our impact, and all these criteria are laid out in the lease, the supplemental environmental assessment conducted by BOEM, as well as the consultation with NMFS that provided the BMPs and project design criteria that we'll be following, and so these are just, you know, a couple of them, and our survey plan has them all listed out, and it documents how we're going to comply with each project design criteria and BMP.

Again, just to reemphasize that, you know, we're not looking to use any equipment that has -- That needs an IHA for this round of surveys, because we don't really need to go -- We don't need to survey that deep into the seafloor for the buoys, but, when we go back next summer, that's when we'll do more of the deep penetration that would trigger the need for an IHA at that time.

The next steps, and so, you know, right now, we've got the joint survey plan in BOEM's hands, being reviewed, and we're looking to do those surveys this summer. Now we're exploring a joint site assessment plan, and this is -- You know, this process is somewhat nuanced to BOEM, and other developers haven't kind of done joint plans, and so that's under review with BOEM now, that idea, and to see what methodology and what we need to do to submit a joint site assessment plan, and so that's where we're at now, and, again, we're looking to do the two buoys, primarily equipped with floating LiDaR, and then the biological monitoring data.

Then, you know, right now, we're really in that phase of looking at evaluating the buoys and starting to put in sensors, and so any insight, that you've already given us, will be helpful for us, to kind of spec these buoys out, and then we can send out, you know, an RFP to the various vendors

to equip these buoys with these sensors, and, you know, just a note, and some of these buoys -- The space is limited, and then power needs are limited, and those are kind of the two main limiting factors, but, other than that, you know, we can try and accommodate the recommendations.

You can see the MOTUS system that we've already discussed, and South Carolina DNR, from our previous conversations, talked about the InnovSea fish detection system, and we are looking to have a PAM system on all three buoys, to do the triangulation, and so any other recommendations would be helpful, and then, lastly, you know, we're looking at -- We will have some permitting and approvals, to put these buoys out, and, thus far, we're looking to have a combined authorization, joint, for the Corps of Engineers, as well as the Coast Guard, for those joint approvals, or for those approvals, and then, you know, obviously, once we get the buoy, and see what it's specified out with, we'll see what other approvals, or permits, will be needed at that time.

MS. BANKS: I will just jump in, really quickly, because one of the other things that we specifically had feedback from, during one of our agency meetings previously, where we've talked about some of these items, was to continue the CEMEX nomenclature, essentially, from the 2015 BOEM study, and so we have built that specifically into our CFT, and our survey plan, to make sure that we do that, and, if there's any other feedback on that topic, or sort of nuance there, that you think we should know, that would be appreciated, and, you know, we can have a follow-up discussion on that, if we need to.

MS. COOKSEY: Paula.

MS. KEENER: Thank you for that presentation, and can you please tell -- I may have missed it, but tell me what the diameter is of the widest part of the surface buoy, the yellow part on that screen?

MS. BANKS: So we don't know yet, and we don't have a contractor, and we don't know what type of buoy specifically we would need, and is the question based on like the ability -- Is the question based on the ability to put equipment onto it, or what is the basis?

MS. KEENER: Well, yes. You know, just thinking forward, that's my first question, but then I'm just wondering, and is it wide as this -- Is it ten feet, or is it twenty feet, or is it thirty?

MR. CRAIG: I think it varies by vendor, and they're roughly the size of a Volkswagen beetle, and that's just a rough estimate of where they kind of fall in. Some of these will fit into a shipping container, you know, and so the width can fit into one of those eight-foot, to ship it, and some of them are slightly larger than that, but roughly the size of like a Volkswagen.

MS. KEENER: Okay. Thank you, and do you know the depth of water that they're going to be placed in?

MR. CRAIG: The depth of the site is around -- It varies from twenty meters to thirty meters. I think, based on the analysis, most of these will be set at a depth of around twenty to twenty-five, I think, based on the desktop analysis, and don't quote me on that, and we'll have to go back and look at it, but I think it's around twenty-five meters is the depth of where these buoys are proposed to be located.

MS. KEENER: Okay. Thank you.

MS. BANKS: I think this is our last slide.

MS. COOKSEY: Now we get to questions and discussion. Thank you, both, for that presentation, and so I did want to officially open it up for questions and discussion, at this time, and I will say that it's so wonderful that we have you here, and that you're sharing all of this information with the AP, because it is this early interaction that makes such a difference as they move forward, and so, you know, commentary and questions that come in from you all right now will really make a difference, or we may have already hit all of the questions. Do we have anyone online? Okay.

MS. BANKS: I will say, you know, if you come up with questions later, feel free to reach out to us, and we're available anytime to have a follow-up conversation, if needed, but thank you all for having us.

MS. COOKSEY: Wilson.

DR. LANEY: This one is prompted clearly by social media coverage of the large tiger shark that took a bite out of kayak recently, and also Chris Fischer and his OCEARCH white shark information that has been highly publicized in North Carolina, and so I just mention that you, and you all might want to pay attention that, and I think that the OCEARCH people are using mostly satellite transmitters, I believe, on those white sharks, because they come up to the surface, and so it might be just of interest to look and see if they're swimming through the site, or close to the site, but, you know, I don't know of any cases where a shark has actually bitten one of the buoys, but it might be worthwhile making sure it's a material that could withstand a pretty powerful bite.

MS. COOKSEY: Thank you, Wilson. I wanted to recognize Trish.

MS. MURPHEY: I just wanted to let everyone know here that, you know, as Ursula had said, and her advice was to, you know, talk to people early and often, and I just wanted to let folks know here that I have checked in with council staff, John Carmichael, and I believe that you guys are going to be presenting to the September council meeting, and then, also, they are tentatively -- They are hoped to be scheduled for the different AP meetings that happen this fall, and so, in trying to get that early and often interaction, and so we're trying to actively have the council and council APs involved, and so thanks. I just wanted to let you all know that.

MS. COOKSEY: Thank you for sharing that. That's wonderful news.

MS. BANKS: Yes, and we appreciate all invitations and opportunities to share information and gather feedback.

MS. COOKSEY: Okay. Well, I believe that that closes out our morning session, and we are going to take a one-and-a-half-hour lunchbreak, to allow our energy policy working group to get together, and so we will reconvene at 1:30 this afternoon for our discussion on the energy policy. Thank you, all.

(Whereupon, a recess was taken.)

MS. COOKSEY: Welcome back, everyone. We are ready to kick off the final session for today, where we are going to be focusing in on our next major policy update, which will be focused on our offshore energy policy, and, again, this is a preexisting policy that went through a major update back in 2015, when the areas of primary concern were LNG and offshore gas exploration, and so it is in need of updates reflective of the current pressures that we are seeing, most obviously, in the Southeast, although, as Roger and I discussed, we never know what the future holds, and so you never know when LNG, and/or gas exploration, may come back in the Southeast, and so that is definitely a consideration to keep in mind. Paula is our subcommittee chair for the energy policy statement, and so I was going to hand this over to her.

MS. KEENER: Thank you, Cindy. We had a very productive meeting, and I would like to just report-out on who was there. Anne Deaton, Ursula Howson, Brian Wilson, Stacie Crowe, David Whitaker, David Webb, Tom Jones, and me. Did I miss anyone? Okay. Thank you. Again, we had a productive meeting, and we discussed the importance of initial information gathering to begin to move forward with the policy update, in particular with a focus on conversations that have taken place over the last couple of days related to cradle-and-grave, habitat being colonized, et cetera, and so a lot of conversation about that.

We believe that the timeline that was set by the council is feasible, and we also had an extensive conversation with Ursula about seven projects for which BOEM has developed records of decision. I'm sorry. Environmental impact statements, and we are going to follow-on with a phone call with Ursula and Brian and a few other points of contact to discuss looking at those seven EISs, to determine what would be applicable to us considering and updating the policy related to wind here, and we had a great conversation about what makes our area unique, and what types of things might, or should, be considered regarding BMPs and moving --

DR. LANEY: As Paula said, I think we had a very productive session, and I agreed to transcribe my notes and provide those to the full workgroup. If you're interested, we could just mention some of the South Atlantic distinctives that we talked about, and they were things such as the fact that Carolina Long Bay is very close to the northern right whale calving area critical habitat, and we also have -- We're very close, or I guess we're in, the nesting range for the northern loggerhead DPS, and we have visitations by most of the Atlantic sturgeon DPSs, all four or five of them, and maybe not New England, but certainly the other four, fish from the other four, DPSs visit the area off the South Atlantic. Help me out, Anne, and what else am I missing, in terms of --

We talked about whether or not we have any spawning aggregations, Roger, and I'm not sure that any have been identified -- Well, certainly there are spawning aggregations in the South Atlantic, but I don't know that any of them are in close proximity to any of the proposed wind areas, and I think that's about it.

MR. PUGLIESE: I was going to defer to Kevin, but, I mean, the reality is that we just don't have the persistent aggregations, like some of the other regions. We have spawning locations in various areas, depths and contours and locations, like they identified in the spawning SMZs, but, in terms of real aggregations -- I will defer to Kevin to touch on that, because I think that's kind of the reality of where we are in the South Atlantic.

MR. SPANIK: In those proposed areas, we don't really do a whole lot of sampling anyway, and they're predominantly sand bottom, and we're kind of looking more -- We were just talking about

this, Roger, and there kind of two surveys, the inshore survey and the offshore survey, and they kind of straddle right where those areas are, and so we don't really have much information for that area. We are investigating some other special management zones for spawning, with a couple of projects that we're working on now, but I don't think there's anything identified in that area, for sure.

DR. LANEY: The one other thing that I will mention is we did talk about birds a bit, and how the birds enter into the council process, and I know, at one point in time, a number of years ago, I had inquired about birds as bycatch in fishery operations, and I don't remember where we left things on that respect, but, as far as federal regulations go, the birds are under the jurisdiction of the U.S. Fish and Wildlife Service, and they've been very much a part of the whole interagency discussions, with respect to offshore wind, and so that falls more into their ballpark than it does into the council's ballpark, I think.

We do have some species that are unique to the South Atlantic, those being the black-capped and the Bermuda petrels, and both of those occur offshore, but my sense is that they're a long ways offshore, probably further out than the wind installations would be located, but, you know, we just would mention all the South Atlantic distinctives, probably, just to make sure to get them in the record.

MS. COOKSEY: I just wanted to jump in that, yes, indeed, the U.S. Fish and Wildlife Service is an active part of all of the multiagency meetings that I have been involved in for Kitty Hawk, as well as Carolina Long Bay, and so they are very actively advocating for our non-aquatic species, and I just wanted to kind of focus in on where the policy statements -- What the legislative authority is for the policy statements, because that may help kind of focus in on what you choose to focus on within the policy statement, and so we have our ten mandatory components of the fishery management plans.

Of course, our five-year review is focused on the description and identification of EFH, but Number 4 of the ten mandatory components are the non-fishing-related activities that may adversely affect EFH, and so that's where the policy statements kind of originated from, so that it allows the fisheries management plans, and the council, to help identify and come up with ways, best management procedures, that are associated with avoidance and minimization, as well as identifying research needs. You know, while lots of other species are important, the policy statement is, in essence, designed to truly focus on fisheries and EFH, and hopefully that is helpful.

MS. KEENER: Great. Thank you for that. Another consideration, or thought, that we put forward was to look at any of the unique hydrographic processes taking place in the area, and so we got into some interesting discussion about that as well, and so, moving forward, our actions are, as Wilson stated, he's going to put together the notes from our meeting, and we are going to schedule our first webinar meeting with the committee, to discuss next steps and moving forward, and Anne Deaton is going to develop a draft outline, and thank you, Anne, and we discussed pulling wind out of that, so that it's very easy, and maybe other pieces, so that it's easier for the user to access the information of the policy itself.

Going back to -- Then we're also going to have a conversation with Ursula and Brian regarding those seven EISs and looking at what is pertinent to bring forward as we move forward with the update. One of the questions that came up was are there resources to support culling through some

of these documents, for example these seven EISs, and I don't know if there is an intern on the council, if this is something that we can potentially look at as a different approach towards policy revision specifically regarding wind, as we begin to look for opportunities and those kinds of things, and is there any support available for any of that?

MR. PUGLIESE: Right now, we don't necessarily have resources, and we haven't dedicated any resources, other than myself working with the group, and so that's where we kind of stand right now, and that may be something that can evolve in the future, but, right now, we do not have an intern onboard.

MS. KEENER: So how do we go about -- Well, we can talk about this offline, but I think the next question would be -- I think it's worth, certainly worth, considering, and I think this is really important, and we all are either consulting or tied up in full-time jobs, and, if we want to do it right, we want to do it right, and so I would encourage those evolutionary thoughts, as soon as possible. Thank you.

MR. PUGLIESE: I think we can -- You know, in the past on some of these, we've kind of reached out to our partners here and have gotten opportunities. I mean, given that we do have BOEM, and Brian does sit on that, and there may be opportunities that we can figure out how to advance that with cooperation with them, and I'm not sure, and we can have those discussions. Big no?

DR. HOWSON: I don't want to obligate Brian, and we are in an incredible surge right now, as I mentioned, with so many review and so many EISs right now, which is why I think it would be perhaps a good idea, as we discussed with Paula, about having a preliminary meeting, to see exactly what needs to be pulled out, kind of to get a feel, get the lay of the land, as it were, you know, to take a look at the impact-producing factors that -- The impact-producing factors that are in the EISs, to see if they would be relevant, and maybe it wouldn't be that huge of a lift, but it's kind of tough to gauge right now, until we've actually gone through it. Paula, I also wanted to mention that you were right about the records of decision, and there are three records of decision at this point that we could go through, in addition to those seven environmental impact statements, but the challenge though is just finding time to go through them.

MS. KEENER: Thank you. Does anyone else on the working group -- Do any of you want to make any other comments or thoughts? Anne.

MS. DEATON: I was just going to share what we were thinking of doing is keeping all the existing energy activities, like oil and gas, but maybe condensing that down, as a placeholder, so it's not as long, and more emphasis on the new information, and the more ongoing information, because this will get reviewed, and it can be updated in the future.

MR. PUGLIESE: I think that is something we had anticipated, because we really did try to overload it, and basically really hit it hard, with as much as possible on the oil and gas. While that's not as big of a consideration now, I think it's significant enough to keep it in there, but consolidating it down, and you always have the historic information that we can refer to, because this was provided directly to the Interior head, when they were doing the review for like five years and all that, and so there's a history on all of this being there, if needed, to pull back, but I think the focus here really needs to be on the renewables, and you all are going down, it sounds like, the right path to try to address those.

As you move forward, we can have some additional discussions on where we may be able to get some of the additional review, or I was just mentioning it, and Cindy may respond, is that they've done formal reviews of all those EISs, and maybe that combined look at those might provide some foundational information of, you know, already having viewed it, especially in the context of EFH, for a number of those.

MS. COOKSEY: Right, and so there are letters that NMFS has provided, and, you know, there's letters that NMFS has provided for the Mid-Atlantic offshore wind development that has already occurred, but I think what is more relevant to this activity are the NMFS letters that have been provided at different areas of the planning process for the Southeast region, which actually goes back over ten years, and there have been a series of scoping letters that NMFS went out -- That included both the Habitat Conservation Division, with the EFH focus, which would remain the focus of the policy statement, but it also includes statements from the Protected Resources Division for our marine mammals, and our turtles, but I think those letters are much smaller scale, much easier to sort through, and already come with the narrowed fisheries focus, and so geographically in our area and fisheries focused, and so those are -- They are public documents, and so I can pass them along to you, and they may prove more efficient, given the fact that we don't have the financial resources for an intern.

As I was speaking earlier, I'm all about what's achievable, given the resources that we have, and, if that means being more laser-focused, and trying to reuse what is already in existence, then that's what we have to do, and so I will get those letters to you, and there will be four or five of them, at a minimum, that kind of trace that history of scoping, where we have actively sought to identify the EFH that we have the greatest concerns about for the region, and so hopefully that will be helpful in making it a little bit more doable, given the resources, and less of a lift to -- Because I go through those EISs, and they're big, and that's a lot of work.

MS. KEENER: I just wanted to thank you, and I wish I had thought of that earlier, because that's an excellent idea. You've done all the work, or a lot of the work, in terms of trying to figure out what are the important habitats and where the focus should be, and so just a question. Would that be for Carolina Long Bay, Kitty Hawk, and then potentially --

MS. COOKSEY: Just for those, and going back to the wind planning areas, like off of South Carolina, because, you know, the other thing to think of is that, yes, we've got Kitty Hawk and Carolina Long Bay, but the unknown is where the export cables are going to go, and I have yet to see anything about where the Carolina Long Bay export cables are going to go, and so kind of the sky is the limit right now, and so it's definitely important to think about those offshore areas, where the turbines may go, but to also give some thought to where we're going to come in, especially given the fact that we do that, for Kitty Hawk South, they still have the sound on the table for going through.

I did want to note that like some of the heavy lifts may be reusable from the existing energy policy, and like they've already identified kind of all the major EFH and HAPCs that are in there, and so hopefully that will also make it a little bit more manageable to go through, because I want you guys to be successful, and so I'm trying to figure out how to help narrow it down.

AP MEMBER: (The comment is not audible on the recording.)

MR. PUGLIESE: I think that's something we need to double-check.

MS. COOKSEY: Just to double-check, but --

MR. PUGLIESE: We've had cobia, at least.

MS. COOKSEY: But I don't see any cobia-specific on here, and so we should be good.

MR. PUGLIESE: We'll work to double-check it, and the other ones, and red drum was already removed when this was done.

MS. COOKSEY: When this came out, correct. Red drum was already gone.

MR. PUGLIESE: Those were the two ones that we've only had really kind of had to have removals of EFH, because, once you pull them out of an FMP, EFH designation is no longer functional, and so we had to walk that line before, and so, yes, I think most of those should be --

MS. COOKSEY: I can get the scoping and the comment letters that, you know, Fisheries has sent out, and that will be, hopefully, helpful. I'm trying to think of any other --

MR. PUGLIESE: One thing, just a clarification, and let me -- You know, that layout of structure and whatever, we'll just tailor it, so that, when we have the webinars, and I can work with you on getting those set up, make sure we have the materials also, and one thing I want to clarify, with a number of these different timeframes, is we do not have any -- The Habitat and Ecosystem Committee is not meeting in June, and so we don't really have to have -- You know, there's not going to be an update report in June, and this will be -- The update would come in September, when we get to that type of thing, but we'll be still working on it, and that will just be an update, and that won't be an iteration, necessarily, and so the intent is to --

MS. COOKSEY: So like what progress is being made.

MR. PUGLIESE: Yes, and build this, so that we --

MS. COOKSEY: The progress that's being made and not --

MR. PUGLIESE: Yes, and it will be in October for the council, but I wanted to make it clear that, you know, that's the case for -- We do not have a Habitat and Ecosystem Committee in June.

MS. KEENER: Okay. Thank you for that, and so, Wilson, you brought up the ASMFC Habitat Committee meeting that is happening in July, and is that correct?

DR. LANEY: No, and what I said was I believe that Simen indicated that the Atlantic Coastal Fish Habitat Partnership might meet in July, but is Habitat probably going to meet with them, as they usually do, in July? I said we just needed to ask Simen that question.

MR. KAALSTAD: Yes, and so the Atlantic Coastal Fish Habitat Partnership is meeting in July, and, given the sort of discussions we've had here, I'm going to sort of suggest that we also have the Habitat Committee meet.

DR. LANEY: That would be great, and what I had indicated, Simen, if you concur, is that it would probably be useful, if the Habitat Committee is going to meet, to have the webinar after the ASMFC Habitat Committee, or not, depending, and, I mean, but it could be that we -- We will definitely -- I know we will have offshore wind conversations during the Habitat Committee meeting, and, to the extent that those might be informative for this workgroup, and the policy rewrite, it could be useful, and I don't know. On the other hand, you know, if you wanted to have the webinar before the ASMFC Habitat Committee, then our discussions could be useful to the ASMFC Habitat Committee, and so, you know, it cuts both ways.

MR. PUGLIESE: I guess you just have to look at timing on that, because we were trying to get this first one pretty soon, so that you all can start, you know, taking that step beyond here, and so, to me, it seems like that would be almost two months after, and we would move into August, because the original timing was to try to begin the discussions, and I think there's a lot, with all the pieces and the guidance, and so what we can do is take some of that and just fold it into this first iteration, at least highlights of what things to be addressed, and have that available, begin to do that, and then, as it comes -- If they have those discussions at ASMFC's Habitat, then we can build that in on your next -- Because I think what we had timed is to try to have an August and September webinar, to follow-up, and we can work with -- You know, we can work with how you need to step forward to get those accomplished, but I think that just seems to be -- That might be -- It's up to you all what you want to do, timing-wise.

DR. LANEY: One other thing that I will remind all of us too is that the ASMFC Habitat Committee includes representatives from the Mid-Atlantic and New Council too, and they have already, you know, done a whole lot of offshore wind stuff, and so we would have the benefit of Michelle Bachman and Jessica Copley's input as well, on the Habitat Committee, and so --

MS. COOKSEY: Speaking of something coming from the Mid-Atlantic region that may be useful, and, again, like lessons learned, as we've progressed through this process, is, in the blue book, and we mentioned the GARFO mapping recommendations that we included in the blue book, and it's nothing new that BOEM is hearing this from NMFS, but we -- Kind of the lessons learned is, if you look in Figure 1 of the GARFO mapping recommendations that are in the blue book, it recommends a flow, and, in essence, we have been trying to recommend that acoustic surveys, the data that is used to delineate and distinguish the different habitats for mapping purposes, be conducted prior to seafloor sampling, that what we would use for benthic characterization studies, rather than trying to do both of those at the same time on the same research cruise.

My example would be Kitty Hawk, where those surveys were done at the same time, and then, once we began analyzing the data, it became quickly apparent that the area of maximum interest from the acoustic benthic mapping was an area that we had very, very little benthic characterization and physical samples collected in, because they had been done concurrently, versus in an iterative process that would allow us to hone-in on where our greatest questions were.

I would just throw that out there, that it's a really good resource for potentially developing some best management practices to also recommend for the South Atlantic region, to create that iterative

flow, to ensure that we are doing our best to avoid and minimize adverse impacts to vulnerable EFH, and so that is already available to everyone. Roger.

MR. PUGLIESE: Yes, and that's projecting, and you all have gotten it as Attachment 6c, I think it is, for this, and so I think that's important, because I think there was guidance to reach to other regions, and partners, on what all is going on, and so the only thing I will say is that, while we're doing it, I think it's an important effort to bring in, where we can, but hopefully we're not going to get wrapped up in some of the issues that we don't have in the Southeast.

That, I think, to some degree, kind of overwhelmed their activities, and their coordination, in that area, and so hopefully, you know, that isn't something that changes direction, and it shouldn't be, because this is going to be a South Atlantic Council policy statement, and just that's the only thing, to go in eyes wide open on some of these different things, because I think not everything is necessarily something you want to integrate into a South Atlantic policy.

MS. COOKSEY: Right, and I think that's a great point. We have different fisheries, and we have different habitats, and so, you know, we have our own unique challenges and opportunities, you know, and so, as we look at what others have had to do so far, we can take the best of the learning opportunities and, you know, hopefully use that to help create a great resource. Yes.

DR. HOWSON: Thanks. If I could add to that, just a recommendation, or, well, actually, a clarification for some of my recommendations, and so BOEM has guidelines that the developer needs to follow for benthic habitat sampling. The NMFS recommendations are a little bit different, and they're a little bit more intensive. What we have found is that, you know, we can't require those recommendations, but we can strongly encourage, we meaning BOEM, and what I would recommend, lessons learned, is that -- This might be a recommendation in the document, and again going back to that engage early and often, and so this is where that early in the survey process, even where Carolina Long Bay is right now, and I just had a discussion with Nathan a few minutes ago, that this is where they need to be thinking about those recommendations.

They're at the site assessment stage, which is the SAP, and they're not at site characterization, which are the very detailed -- But they should be thinking about this, and I had actually recommended to them to contact you and to start that conversation now, and, again, it's not something that we require, but it makes the EFH consultation go much more smoothly.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you for that, Ursula, and that prompts me, and I will defer to you, Madam Chairman, on this one, but, given that we have the pavement habitat likely present, I will say likely present, or probably present, when we have both pavement and unconsolidated sediments, like sand, does that require two different approaches for benthic habitat sampling?

MS. COOKSEY: No, in that we have amazing preexisting data for Carolina Long Bay, in that we can go back to the NCOS BOEM-sponsored survey work that was done in the mid-2000s, that they did extensive mapping of the Carolina Long Bay project area. Now, as Ursula mentioned, BOEM puts out requests for proposals, and there was a proposal put in to go back into that dataset and attempt to do some re-analyzation, as well as a deep dive, to try to squeeze out that much more information regarding the pavement habitat, in that it's pretty clear cut that you need to avoid, you

know, high-relief, live-bottom ledge habitat, but we've got this extensive hardbottom habitat, and we need to get a better handle on that, and I think the proposal may have actually included some additional survey work as well, but I have not heard where it's at, other than it was submitted for review, and so they are attempting to get better data, but, when it comes to like the benthic characterization, of like going out and collecting physical samples, a modified Van Veen will work just find in sand pavement areas, as well as deep sand.

DR. LANEY: Okay. I didn't know whether the modified Van Veen would just bounce off the hard stuff, versus digging in, as I normally -- You know, I normally think of those things as being a box with jaws that goes down and grabs a hunk of the sediment and pulls it up, and you --

MS. COOKSEY: But the sand veneer is usually deep enough. I mean, I've sampled in that area with that equipment, and so I know, for a solid fact, that it works really well. Were there additional areas for discussion, for the overall AP, for the policy development?

MS. KEENER: Before I close out, I'm going to ask the working group one more time, and any further comments or thoughts?

MS. COOKSEY: Wilson and then Anne.

DR. LANEY: Well, we did have a little bit of discussion about LNG, you know, facilities and how -- Whether or not we need to -- You know, how much information we need to put in there about LNG, because, again, those of us around the table were thinking that there had been, in the past, you know, several proposed LNG facilities, and there was one proposed for Morehead City, and I think there was one proposed for Florida, and I don't think either of those ever came to fruition, and so whether or not there's any existing pressure for LNG facilities, I don't know. Roger.

MR. PUGLIESE: I mean, if there is, it's the other way around, because I think, you know, we were originally looking at bringing in gas, and those were big areas, with -- The big consideration, and I think we already touched on it a little bit, because it was right at that timing, where the water withdrawals were unconstrained on some of the first proposals, and so it was, you know, pulling millions and millions of gallons water, as that process, and then the recommendation was to take the, you know, kind of reduced version of that in, and then the industry flipped, because the U.S. was producing liquid natural gas, and so then it became a discussion about creation of systems that would be outflow, and that's what the Bahamas is doing, and I think they kept on moving forward, and I'm not sure if they ever got there, but they proposed landing facilities, versus -- Or we were starting to do that, and they had discussions, because of, you know, the potential for exporting.

I'm not sure, and nothing else has come in the open ocean in the South Atlantic anymore. If they are considering any export facilities, that's a whole different story, and, if they are, at least anything that may have happened may have been land-based in the Gulf of Mexico, on shipping out, versus bringing in, which would have a totally different consideration on the way they would --

MS. COOKSEY: Yes, and that's what I'm aware of as well, is that I believe there's some export facilities, either consideration in the Gulf of Mexico, but nothing on the east coast, at this time, although certainly there was a lot of good work that went into the policy development for LNG

and gas that may still be useful to keep in, because, as we know, you never know when something is going to gain popularity again.

MR. PUGLIESE: To that, one of the biggest issues, of course, with those kind of withdrawals was going to be the entrainment of larval -- Especially where it was being placed, and different things like those considerations, and one of the needs still in the South Atlantic, for other reasons, is larval information, and we do not have a plankton survey on the Atlantic coast, or the South Atlantic, and so we didn't --

You know, that was where they did the most that they had ever done, was that area in Florida, and that's where we got information about, you know, encounters, et cetera, there, but we don't have an overall plankton survey, and so we can't really point to a lot of additional detail on some of that, which is a shame, but, I mean, it's a priority for research longer-term, for what we needed for ecosystem modeling and different things, and that would be good, but you put that into balance with maintaining the survey, and having to cut, you know, survey locations out, to create something new, or the ability of NMFS to want to expand, because they do it in the Gulf of Mexico, and I have raised that a bunch of times, about why don't they just extend it and start doing our area, but it's never taken any traction, and they just have not done it.

That's just information about having the information to go further with it. The most we've gotten, in terms of larval use of water, and what the potential impacts are, is when they did that focused work in Florida, and that got incorporated, I think, to some degree.

DR. LANEY: Yes, and I totally agree, Roger, on the ichthyoplankton side of things, and so the only data we really have, that are long-term surveys, are the South Carolina and the North Carolina surveys, you know, the one at North Inlet in South Carolina, and then Beaufort Inlet, the bridge net survey, and both of those are inshore, and so they really don't give you the information you need to assess whether or not there would be something going on offshore, from a larval perspective, in these wind areas.

MS. COOKSEY: Paula.

MS. KEENER: Thank you. As someone who identified thousands and thousands of larval fishes, what on earth happened to the MARMAP data?

MR. PUGLIESE: The historic MARMAP data still exists, and Kevin can get in there, and it has been touched on in the past for that, but one of the things that I will say on that is that's probably some of the older data, and, given some of the considerations on temperature and currents and all that, you know, things probably have changed somewhat since then, but it is still there, and, if nothing else, it can be the beginning of a proxy to understand and then expand from there. Kevin.

MR. SPANIK: Yes, it's still there, but there just hasn't been any funding to do anything else with it in a long time, and it's sad, because recruitment is always an issue with stock assessments, and it's just really hard to model, based off the adults, and we're trying to look into more -- I will talk a little bit tomorrow about trying to develop a juvenile survey that we're working on now, but it's just not something that funding is available for, to continue with any of that plankton work.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Madam Chair, and so there is one other historical database, which is the BSEP, the Brunswick Steam Electric Plant, archives of data that are now held, Nathan, by Duke, and I had some recent discussions with some of your colleagues, at the last North Carolina American Fisheries Society Chapter meeting, and so there were ichthyoplankton surveys in association with the Brunswick Steam Electric Plant, within the river and the estuary, and also offshore, but not very far offshore, but those might provide some insight, because they are so closely located to the Carolina Long Bay site, and so I will just throw that out there and mention that, and there are reports of those data, and I have electronic copies of all of those on a compact disk that was provided to me by Duke Energy staff, and so I'm very grateful, Nathan, to you all for providing those to us, but those are available, and Anne may have hard copies. Do you have hard copies?

I have hard copies of all of them too, but it's much easier to use the electronic versions, and so, if that would be useful, Paula, we can take a look at those, and we may just want to cite them, in the lit cited, and say, hey, these data are there, and we haven't really looked at them closely, and some of it did get published. Mike Weinstein was one of the consultants on that project, and so Mike did publish a few papers, but mostly those focused on larval use of saltmarshes, tidal saltmarshes, in the lower Cape Fear River estuary, and so, again, not very informative for offshore, except that it does let us know what's coming in from offshore, at what time of the year.

Then another historical dataset that we talked about Mo Nelson a little bit yesterday, is the ELMR data, you know, the Estuarine Living Marine Resources reports, which are dated, but still useful, and then the other thing, that someone was talking about at dinner last night, and I think there's a book by Ken Oble and Mike Fahey that is the first year in the life of estuarine-dependent fishes on the east coast, which is a very excellent summary and writeup of those fishes' life histories, and so that's useful, too.

MS. COOKSEY: Kind of this discussion opens up an area that I haven't heard, but is an important part of a policy statement for the council, which is research needs, and so that is definitely, you know, something to keep in mind, as you have the working group sessions, is where are you seeing gaps in our knowledge base and what should we focus on, especially for prioritization of research, related to energy development. Ursula.

DR. HOWSON: I just wanted to add, just because people may not be aware of this, from a renewable energy perspective, on the need for ichthyoplankton data, for some projects, they would require a DC cable, rather than an AC, and DC cables are for longer stretches. If they're farther offshore, or simply if the export cable is going from the lease area, many, many miles off the coast, those DC cables require cooling, and so the cooling would be a cooling tower, or a cooling facility, that would either be a closed-loop or an open-loop. Right now, the closed-loop system is really not feasible, and so open-loop systems are being considered, and, for those open-loop systems, the developers, and we're actually seeing that, and we're dealing with a project right now in New England.

The developer would require a -- It's called NPDES, and I can't remember what it stands for, but through the EPA, and it also needs to be evaluated through an EFH assessment, and we're looking at the potential for entrainment and impingement, and so having those numbers available, in order to appropriately and adequately evaluate impacts to, you know, larval fish, and potentially those

stocks, because that water withdrawal would be constant, and, you know, it would be all year long, for the life of the project, and something, you know, to consider, in terms of research prioritization.

MS. COOKSEY: Absolutely, because my understanding is that at least one, if not both, of the routes, the southern routes, for Kitty Hawk South would require at least one cooling transfer station, with cooling, and so that would be, like Ursula said, year-round, constant water being sucked in, for cooling purposes.

DR. HOWSON: Sorry, but just to clarify again, and that's the open-loop. There is a closed-loop, that would use, I believe, freshwater, or some kind of coolant in it, and that would not require water withdrawals, but I think that technology is still a little ways off.

MS. COOKSEY: Yes, and I've not heard anyone recently talk about that as being a real option for the south. Paula and then David and then Wilson.

MS. KEENER: Just quickly, and are these structures -- Are they located on the surface or the bottom or throughout the water column or it varies?

DR. HOWSON: It doesn't vary, and it is one pipe that goes down, and I can't recall the project, and it's Sunrise Wind off of Rhode Island that we're evaluating right now, and I want to say tens of feet down would be the withdrawal, and you're also talking about a warm-water effluent coming out as well, and so that warm-water and cooling, which could potentially have ESA impacts as well.

I know, at least in New England, Calanus finmarchicus is a copepod that's important for right whales and other species, and so, you know, that also is being looked at, you know, impacts to Calanus, as well as say stocks of concern, Atlantic cod, and we're not seeing the numbers, really, that would cause a lot of concern, but we do need to quantify them, and we do need to evaluate those impacts, and we meaning BOEM, NMFS, through the EFH consultation, as well as EPA.

MS. COOKSEY: Just to kind of follow-up on the warm-water output, is something that I know I've talked to variety of people, is what does that mean for lionfish establishment, for year-round purposes, if they have a warm-water source year-round, and so that's something that just -- Again, to be considered by the working group as part of, you know, that as an operation for longer export cable routes, and it's not a factor, and I want to highlight that, that it's not a factor for shorter routes.

MR. PUGLIESE: I think we've kind of gone full circle, in terms of your original question about LNG, because it all depends on volume, because that was the big thing, and I couldn't remember the terminology, but it was the open versus closed-loop, when we were discussing that, and I think what we can draw from that, maybe, is some of the localized surveys that they did to understand, at least within that, and since we don't have -- I mean, we can recommend that, if those can be accomplished, but, for that review, maybe those types of surveys, where they did try to capture what the larval characterization was in the area, might be something that could be considered as recommendations to advance, but I'm not -- You know, it would be interesting to see what the volumes are, relative volumes.

MS. COOKSEY: Ursula and then David and then Wilson.

DR. HOWSON: Thank you. I was just going to say that we do have those numbers for, as I said, that one project, and so that has already been analyzed, and we have the EFH assessment, with those numbers, and there is also the NPDES permit application from the project, and those are all publicly available, and so I can point you to them afterwards, if you would like to see them.

MR. WHITAKER: I was just wondering what the water temperatures are coming out of those things, and do you have any idea?

DR. HOWSON: I want to say that they're not that great of a difference, because, by the time they get out to the water, you know, there's been some cooling of that, but I can't recall.

MR. WHITAKER: What I am really interested in is how warm the water the plankton would be exposed to, the maximum going through the system, and would it be enough to cook them?

DR. HOWSON: I think it's pretty much assumed that they would die if they go through the entrainment, and even just physical. The warm water may, especially in New England, and that could be a consideration, but I think the assumption is that there would be a total loss of those. Good question.

MS. COOKSEY: Wilson and then Anne.

DR. LANEY: To follow-up on these questions, and this is the first I've heard about, you know, the DC and the cooling need and everything, and so just to help me get my head wrapped around it, and so would the discharge of the warm water be distant from the intake? I mean, is this the kind of deal where you would have to have a sleeve around the DC cable, and so you would be pulling in the water at the turbine installation site, at that end of the cable, or would you pull it in from the other end, and then is the warm water discharge, in response to David's question, totally separate and apart from the intake?

DR. HOWSON: So it's one unit, and it's one cooling station, and so it's a large cooling station, and they have, you know, the cooling equipment on there. They would draw in water, and I'm trying to visualize the schematics that I've seen, and I believe that one is offset by a number of meters from the other, and so the intake is separate from the outtake, as you would imagine, and I think, you know, you would want to intake cool water, and offset that warm water, and I can't remember the dimensions off-hand though, but it would just be one unit that would be -- It wouldn't be associated with a single turbine, because it's the export cable that would need to be cooled.

MS. COOKSEY: Right, and so, just to potentially hopefully clarify a little bit more, you have individual turbines that are connected with inter-array cables, is how we refer to it, that go to substations within the wind energy area, and those substations then bring cables together, and they create the export cables that bring the energy to shore. Kitty Hawk North has export cables going into Virginia, but they are of such a distance that they do not need to worry about cooling, and it's only when you have to switch to DC cables, because you are so far away from where you are going to transfer the energy to, that, somewhere along that export route, you create a transfer substation that needs the cooling cycle, and so not every offshore wind energy project requires that, you know, and it's only associated with like, in this case, the Kitty Hawk South longer export routes.

DR. LANEY: So, back to David's question, and so some of us, namely me, being one, did my master's on critical thermal maximum of penaeid shrimp, and so there was a whole of emphasis on such temperature-driven studies back in the early 1970s, when power plants were being built in coastal areas, and, you know, thermal increases was a big issue, and so we might be able to gain some insight, again, David, depending on what the discharge temperature is, by looking at some of those early studies.

The EPA put out two symposia on thermal ecology, and some of the work that I, and my comrade, Ed Pembleton, at NC State did was published in one of those, and so, again, there is existing literature. If that's something that we want to pursue, to a certain extent, we could probably do that from those studies that were done fifty years ago.

MS. COOKSEY: Just real quick, I have two questions. Methane hydrate mining, is that still done? Should we keep that in there, but brief, and I don't know what it is.

MR. PUGLIESE: You're talking about the hydrate mining? I mean, yes, that needs to be -- That actually was a consideration -- There hasn't been as much discussion lately, but that was a big consideration because of Blake Plateau, because of the occurrence of nodules and everything on the Blake Plateau associated with that, and the mining potential on the Blake Plateau, and it hasn't been discussed a whole lot recently, but here's a real hook, is, when we had the AUV that did the mapping of the deepwater coral HAPC, its original intent was to explore the Gulf of Mexico for gas hydrates, and so there was that interest in the past, and it's probably important to keep it in the queue, even though it hasn't been addressed, but that's a whole other side that would be on kind of the minerals side of BOEM, but still is potentially --

There may be -- I don't know if you have any -- If they're doing anything else relative to that, and I haven't heard anything in a long time, but that is why we had it, because there was interest, and there was discussion, and there was some initial targeted work, especially in the Gulf, but we did know that Blake Plateau did have a distribution, which was right under the base wreckfish fishing grounds, and there was concern about that and there's a real significant connection between our managed species and some of those habitat types, and I don't know if -- I would just verify there hasn't been a whole lot that I know of done anything beyond that.

DR. HOWSON: As far as I know, there hasn't been, but I'm not sure about that, but I haven't heard anything, and so I can't guarantee.

MS. COOKSEY: Then my just other question is what was the timeline, and you were looking for a draft, or you want a draft -- What would be the webinar date, because you said --

MR. PUGLIESE: What I was going to do was get -- At least change the name, and so bring in some of the notes, in terms of highlights, and have that available, along with the other materials we talked about for the EIS --

MS. COOKSEY: All the scoping letters.

MR. PUGLIESE: The scoping letters, and that's what I'm talking about, the scoping letters, the GARFO document, which we already have, and some of the other associated materials, so that we

can have that webinar in like June sometime, later in June, or July, that crosswalk time, and I will just need to make get a doodle poll out or something, to make sure that you can get most of them together, but we can talk about it, and set up the webinar, so that then you can advance that, with the intent of literally starting to whittle away at these, or, if you want to task -- I think it may be early to kind of task any actual edits right now, and I think you need to have your meeting.

MS. COOKSEY: Yes, and we were going to -- I was just going to start an outline.

MR. PUGLIESE: Okay.

MS. COOKSEY: Because you know how we revised beach nourishment, and make it as efficient -- You know, lay it out and then plug-in all of the new edits, and we can do that in the next step.

MR. PUGLIESE: Yes, and that's all yours, and I was trying to just move forward, but, if you already have it in the queue, I will send this to you, that version, which all it is --

MS. COOKSEY: The Word version.

MR. PUGLIESE: The Word version, and I will make sure the whole group has the Word version, and then you can start working on that, and then you'll have the reference for that, as well as whatever iteration comes in, and that can really be the one you hammer out and start to whittle away at that, if that sounds like an appropriate first step for you.

MS. COOKSEY: David.

MR. WEBB: I was just looking at a BOEM document here regarding these cooling systems, from April 2022, and I am not going to read the whole thing, but this probably needs a little bit more investigation, because the size of this -- Let me read directly from it here. Presently, the high-voltage DC system structures for an offshore windfarm range from about 200 to 400 feet long, 140 to 350 feet side, and eighty to 300 feet high, and weigh several thousand tons, and so these are structures that are bigger than the windmills themselves, and it goes into the filtration and the loss of larvae going through the system and everything, and the heat generated, and so BOEM has already done some research on this, but the only reason that I bring it up is -- I don't know if it needs to be a part of the project that we're doing.

MS. COOKSEY: I mean, I would say our larval stages are an important component of our EFH offshore. If you look at the designations, that is huge, and, you know, as you are -- Because what we're talking about here are findings, you know, what are the routes of adverse effects, but then to also think about best management practices to recommend, and they can range from, you know, the council recommends that cable routes, which utilize DC cables and require a station, be avoided, as practicable, and then, if it's not practical to avoid, you know, what can you do to minimize, but those are things to think about. You know, we've got the findings, but then we're also looking for the best management practices, and research needs, to help understand what that may cause. Wilson.

DR. LANEY: Cindy, thanks for saying that, and that reminds me to just note to everybody that larval sources and sinks are not always totally intuitive, and the two examples that come readily to mind are the fact that, based on some of the work that's been done, and Laurent, I think, is far

more conversant on some of this than I am, but spiny lobster recruitment, for example, and, you know, you would think that, okay, there's coral reefs, and they're full of spiny lobsters in the Florida Keys, and all the recruitment probably comes from the Florida Keys.

Well, it doesn't. It comes, you know, from elsewhere in the Gulf of Mexico, based on some of the studies that have been done, or at least some portion of it comes from other areas, and the same thing is true, we think, for gray triggerfish, based on the recent work that I did during a data workshop for that species, in that, because -- Is everybody familiar with, and I know Kevin is, with gray triggerfish?

It's a really weird marine species, because it behaves -- Well, first of all, it's got a pelagic and then a benthic life stage, with the adults being benthic, and they build nests, kind of like sunfishes do, and so you would think, okay, the ones that are building nests in the South Atlantic are the ones that are generating all the larvae for subsequent recruitment in the South Atlantic, but that's not true at all, because of that pelagic life stage thing, and so the eggs hatch, and the larvae swim up, and then wind up spending a good bit of their lifecycle in the sargassum, and so the gray triggerfish that are here in the South Atlantic may be coming from some other source in the south, and that's based on some of the genetics work that's been done with gray triggerfish.

You know, just because something may be reproducing right where the windfarms are, it doesn't necessarily mean that those larvae would be the ones that would be recruiting to the same area, and so it's complicated, and that just reinforces what you all said earlier about the desirability of having more recent ichthyoplankton survey data.

MS. COOKSEY: I feel like everyone is -- Your job keeps getting bigger and bigger, but I'm trying to keep it smaller and smaller, and so, again, just, you know, what is achievable is what everyone should go for. Paula.

MS. KEENER: I wanted to go back to the methane hydrate discussion for a second, and methane forms at a very specific temperature and pressure, and so are these structures being placed far enough offshore for methane hydrate, and potential slope failure, to be a consideration, that the wind structures are on?

MS. COOKSEY: The wind structures are a different discussion from the methane hydrate.

MS. KEENER: I'm sorry. I thought that was brought up --

MS. COOKSEY: No, no, no, and the methane hydrates are out on the Blake Plateau, which the wind structures are, you know, twenty to thirty, or maybe forty, meters of depth.

MS. KEENER: Why did we bring up the methane then?

MS. COOKSEY: Because it's in the policy.

MS. DEATON: Because it's listed in the old policy, and I wanted to know if we still needed to keep -- This is about that.

MS. KEENER: Okay. All right. Thank you.

MR. PUGLIESE: Yes, and it's just historic on a consideration that was being looked at a lot closer, and so it's one of those that you don't need to really do a whole lot more, and you could look at, you know, if there's anything that's been done, just to point to it, but I think that it needs to be in there as still a consideration, because of the connection to the managed species, and as an energy activity, and who knows, into the future, if they ever try to revamp that, and so that's the only reason that it's there, and, like I said, you don't really -- Especially given everything else that you've got to do, you don't need to get too far into the weeds on those, considering there hasn't been, you know, a lot of movement on that activity.

MS. COOKSEY: I feel like we're starting to get to the end of the energy policy discussion, but I don't want to rush it. Are we clear on what the next steps are, what the next -- Do we have any online comments or thoughts? I don't want to miss anything from our AP members online. Okay. We're ending potentially a little early, but I don't want to move any of the items from Thursday morning, because we have a lot of folks coming in to chat, and do we have any issues with going ahead and wrapping up for today?

MR. PUGLIESE: No, other than -- We can go ahead and wrap-up that session, and I'm just going to send something out, FYI, for tomorrow's session, and so is there, I guess, anything else to wrap energy up, and then I will make a comment about that.

MS. COOKSEY: No, and it's looking like we can wrap-up the energy session, and I think Roger may be giving you all some homework.

MR. PUGLIESE: One thing I have is it's a short matrix. One of the things that we're going to be discussing tomorrow are research activities, and then potential input on needs for the future, and we've been discussing a lot of those, that could be integrated maybe into the council's research and monitoring plan. They're going to be reviewing it in June, and most things are moving forward already, but, while we don't have a full AP report at this meeting scheduled, and that's not going to happen until September, maybe we could at least weigh-in and provide some of those recommendations.

The second portion has got to do with tools, and we have a habitat blueprint that is moving forward that has one portion that's going to look at some of the different tools that are available, and the council has developed some key web services, and I have a short matrix that has the three key web services. Now, we do have access to those, to layers for downloadable and all other kinds of things, that I can touch on, and that goes through actually a separate digital dashboard, but what I'm just going to provide is a short matrix that talks about those, and it has those three services, and it has information on who is doing it, pros and cons, and so the discussion is the utility of these into the future, if you can just maybe look at those, and touch on that, but then I'll get into some functionality tomorrow about those, about the different things.

There's some things in the past that people don't really understand, and we created -- In building our services, we corrected also services and connection to partner services, and even some additional layers, and so you can sit there and look at the EFH distribution, and you can open up the BOEM layers, for where the wind areas are, and you can look at the managed areas by accessing those services, or look at sea surface temperature online, and pull it into the system, and so some of those capabilities -- (There is a gap in Mr. Pugliese's comment.)

I just did that, and so I don't know how much that was not online or not, but at least provide that, so that we can have that discussion tomorrow and provide some input.

MS. COOKSEY: Okay. Thank you, Roger. Otherwise, this is a wrap for today, and I will see everyone back at 9:00 a.m. tomorrow morning for the final session. Thank you, all.

(Whereupon, the meeting recessed on May 17, 2023.)

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MAY 18, 2023

THURSDAY MORNING SESSION

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The Habitat Protection and Ecosystem-Based Management Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, on May 18, 2023, and was called to order by Chairman Cindy Cooksey.

MS. COOKSEY: Good morning, everyone, and we are starting out the last session of the spring 2023 Habitat AP meeting. We have a very informative, what should be an extremely informative, session this morning, looking at regional research and tools supporting EFH conservation, and I am going to start out by handing it over to Roger.

MR. PUGLIESE: Good morning, everybody. We're back for more, and we have a number of interesting things to walk through today and advance, and so I wanted to open it up with one of the efforts the council is continuing to move forward with, the development of a habitat blueprint, and we have a workgroup that consists of council members and staff that are developing the structure, and, really, what it's doing is it's laying out a lot of things that we do and putting it into a format so that, if somebody wants to see how the whole habitat system works, this is kind of a good snapshot, but they are also looking at some structure and components and membership on the AP, et cetera, but the idea is to advance the development, highlight it more, and then, in the future, I think one thing that you're going to see too is even more online presence with the materials that we have, and ramping-up a lot of those different types of things, bringing back some of the things we were talking about that were online, components of those, as well as advancing different aspects of it.

It's going to provide the foundation for, as I mentioned, membership, and they're really balancing different things on the membership discussions, to try to make it as efficient as possible for habitat activities, and it lays out our policy development process, which we've been, you know, at for a while, but they're really -- We had some of that wording in one of the original SOPPs, and I think we did a long time ago, but now we just kind of have been doing it, based on the process that we have embraced, but this lays it out a little more directly, and talks about the stages, and going through the ability to set up subcommittees, and, you know, kind of all the process that we literally just went through.

It also -- You know, the policy development is one thing, but then it also gets into discussions on some of the consultation, and how we can coordinate, and what gets to is that aspect of coordinating and going through a number of different levels, and this is where some of those are connected. We developed the policy, in the past, to a great degree, so that we have a lot of that laid out.

If there's not a timeframe within say a committee or council meeting, that the council can use those types of policies in their commenting activity, and so there's a number of different tiers laid out in this process where the council can -- We can just respond, based on those, and we can have a review at the AP level, and then provide a response, or we can, you know, have a committee, and then council, deliberations, when we have a long enough period of time, and there may be, you know, more justification to get a lot more on the record, and so some of those things are all kind of spelled out in that effort.

Like I said, the real intent is to kind of lay everything out, so that, if somebody wants to know how this process works, it's fairly well specified, and so we have an upcoming additional workgroup meeting in June, and then, I think in August, it sets the stage for the council to deliberate on this in September, and I think the way it's going to work is there will be an opening -- It's going to be probably via webinar, and so they may be able to have additional input as this gets out and into the open and laid and different things, and so, yes, I just wanted to at least catch everybody up on at least the staging and process we're in right now, and that's to come, and so that's the quick note, and I don't know if Trish has any other comments on that, but, probably at this stage, we're just still working. With that, I will pass it back.

MS. COOKSEY: Okay. Thank you very much. Wilson.

DR. LANEY: Roger, you might want to say who is on the workgroup.

MR. PUGLIESE: It's -- We have Carolyn, the chair, Trish, as the chair of the Habitat and Ecosystem Committee, and then Mel Bell, for council members, and Kerry Marhefka. At the staff level, it's John Carmichael, Myra, and myself are -- So we're all working together to advance this.

MS. COOKSEY: Any other comments or questions, before we move on? Okay. Kevin. Kevin is going to provide us an update on regional surveys. Thank you, Kevin.

MR. SPANIK: Good morning, everyone. I am just going to provide a quick overview of the kind of larger, well-established regional fishery-independent surveys, and I'm just going to give kind of a background, methodology, and examples of some recent data, and so we just saw a lot of acronyms there, and we're going to see several more, and we'll just go ahead and get some of those kind of out of the way. MARMAP is the Marine Resources Monitoring Assessment and Prediction Program. SEFIS is the Southeast Fishery-Independent Survey, which is based out of NOAA Beaufort, and MARMAP is based out of South Carolina DNR. A quick shoutout, and we have a MARMAP alum here, Paula Keener. Once a MARMAP-ian, always a MARMAP-ian. SEAMAP South Atlantic is the Southeast Area Monitoring and Assessment and Prediction program.

The larger kind of offshore survey we have is the Southeast Reef Fish Survey, or SERFS, and that is kind of a conglomerate of MARMAP, SEFIS, and SEAMAP South Atlantic, and it's a long-

term fishery-independent survey, and it was established back in 1972, and it studies the abundance and life history of U.S. South Atlantic snapper grouper species, and that's done with a fleet of ships, the R/V Palmetto out of SC DNR, the R/V Savannah out of the Skidaway Institute of Oceanography, down in Savannah, and the NOAA Ship Pisces.

The survey area runs from Cape Hatteras, North Carolina down to Port St. Lucie, Florida, and we're targeting, specifically, live-bottom and hardbottom habitat, and that will range anywhere from about fifteen to 135 meters in depth, and we sample annually from April through October, and we try to get at least 1,500 gear deployments per year, and those deployments are randomly selected from a universe of about 5,000 total possible stations.

We have used a lot of different gear types over the years, but the primary gear that we're using is the chevron trap, which you see in this picture here, and we also use longlines, and more commonly a short bottom longline, in areas of kind of high relief in deeper waters, which has twenty hooks on it, and we also use hook-and-line.

Back in 2009, when the survey expanded, when we brought SEFIS onboard, we started adding video cameras to all the traps, and typically it's a GoPro camera, and that has given us a lot of great information, some better details on abundance, fish assemblages, and we can get a better idea of the rare and cryptic and large species that are out there that don't go into these traps. It helps us a lot with habitat characterization, and it gives us some better information on species interactions as well.

We get all kinds of awesome photos and videos, and it's really hard to just pick a few to show you, but this is an example of maybe a large fish, and this is a goliath grouper, or a group of goliath groupers, and probably one of these is a fair amount larger than the trap itself, and so they're not going to go in, and so it's great we have that video information now. I mentioned species interactions, and this is a scamp grouper, and you can tell, by the color phase that it's now, that it's actively spawning, and so that can help us kind of pinpoint things like spawning seasonality. Highly migratory species, like this great white shark, and, as I mentioned, it really helps us to characterize the habitat better, and we can also look at things like invasive species, and like we see lionfish down here.

We collect all types of biological data, namely age and growth, so we can see how old they are, rates of growth, and, to do that, we look at hard parts, like otoliths, for most fishes, and spines in special cases, like gray triggerfish, and we look at reproduction, spawning seasonality, maturity, length at maturity, and we do that using gonad histology, and we also look at fecundity, to look at kind of total egg production.

In the past, we've done a lot of diet studies, and we have done a lot of it recently, just due to funding restrictions, but, for that, we'll take whole stomachs to sort through, and we've also done some DNA barcoding on prey that's really hard to identify visually, and we also have special projects, here and there, to look at population structure, stable isotopes, to infer habitat use, and mercury, for fish consumption and kind of health purposes, and, for that, we'll take fin clips, muscle tissue, and, recently, we've been taking eye lenses.

These are kind of the most commonly-encountered species, and number one is tomtate, and we see a bunch of those guys, and you see a number here, in either green or red, that notates whether that

species has been increasing or decreasing in relative rate of encounter, and so vermilion snapper, black sea bass, red snapper, and we see a lot of scup, and there's actually two species, scup and longspine porgy, that look almost identical, and one has, by its name, you might guess, a longer spine, but it gets broken off in the traps a lot, and so it's almost impossible to tell, and so we kind of lump those together.

White grunt, gray triggerfish, red porgy, and I will talk a little bit about -- You will see that we've caught more snowy grouper and silk snapper and scamp in recent years, but that's due to increased short bottom longline efforts, which I will talk about in just a second.

We have a couple of special projects, that I just wanted to mention briefly, that we've been able to do from some MARFIN grant money that we've received, and, as I just mentioned, one of those was an expansion of our deepwater short bottom longline sampling. Typically, that's been kind of more ancillary, and we haven't had real dedicated funding for it, and so data have been pretty limited for those offshore deepwater species, and so we received some money to expand that sampling range, to do a little more targeted sampling, increase sample sizes for those species for life history, and, also, we really didn't know much about the habitat that they were in at the time, and so we developed what we've called the deepwater camera castle here, and so it's a -- We have several cameras in housings, and there's also a flashlight in the housing, because it's pretty dark down there in the deepwater, and so that has helped us to get a lot better information on what the habitat looks like down there and how those different species are associating with those different types of habitat.

Another project that we've been working on, and this is currently in year-two of MARMAP funding, is to try and develop a better juvenile survey, and we don't really know exactly where those juveniles are, and we're working on that, and so, on this map right here, we have overlaid on the inshore side -- That's the coastal trawl survey that I will talk about in just a second, and the points on the outside are the deepwater, or the reef fish survey, and so you see a pretty big gap in between there, where we're likely missing the juveniles between those two surveys, and so we're trying to get a much better idea on exactly where to find those fish, in that life stage.

We're also trying to look at effectiveness of various gear types, to more successfully capture those juveniles, and we've used sabiki rigs, and several different sizes of smaller traps, and, with a lot of species, there's not one gear that likely is the best for all of the different species, and some are better for say juvenile groupers, and some are better for juvenile snappers, and so we're trying to get a better handle on all of that. We're also trying to do a bit of a data dive and assess the existing surveys that we have, to see if any of them can be suitable for the development of juvenile indices. We're just going to show a few --

MS. COOKSEY: A quick question, and so what size ranges are you hoping to target with the juvenile fish survey?

MR. SPANIK: Anything from just like recently-recruited habitat to what we have in our database, and it will vary by species, but to when they appear to be sexually mature.

MS. COOKSEY: Okay, and I was just looking at the pictures of the traps, and they seem to still have fairly good mesh size on it.

MR. SPANIK: They're pretty small, and it's hard to tell from -- I don't have a good scale in that.

MS. COOKSEY: Okay. Do you know what the size of the openings on the traps are?

MR. SPANIK: I don't know for sure, off the top of my head, but I can definitely get back to you with that.

MS. COOKSEY: Okay. Great. Thank you.

MR. SPANIK: So these are two examples of a couple of species that we're seeing declines, pretty solid trends of decline in recent years, and we don't know exactly what's going on, and we do know that these are both species that spawn in the winter, and that's kind of a pattern that we've seen for a lot of winter spawning species, and it could be that temperatures are just not really conducive to larval development, and it could be sort of a mismatch with prey.

A couple of species that are kind of stable at lower abundances -- I will just point out that these are just relative abundance graphs, and so that dotted line across is just a long-term sort of average, and that black line, and the shaded area, is a 95 confidence interval, and so we're just looking at relative to a long-term average, and so these guys are just kind of staying relatively stable, gag and scamp grouper, but at lower abundances relative to long-term averages, and then we have a couple of guys that are kind of winning lately. Red snapper, which most people who have been on the water will tell you, there's really sharp increases in abundance in the last few years, and the same with vermilion snapper. Interestingly, these are species that spawn in the summer.

Just to give you an idea of some of the -- How the data are used and disseminated, most of it goes into the regional stock assessments, which is scheduled by the council, and then we also provide a lot of peer-reviewed scientific publications, a lot of life history and distribution information, and a lot of presentations like this one.

The SEAMAP coastal trawl survey is a long-term regional trawl survey in the Southeast, and it's established in 1986, and it studies abundance and life history for a diverse assemblage of fishes and invertebrates, and we use the Vessel Lady Lisa, and it runs from Cape Hatteras, North Carolina to Cape Canaveral, Florida, but, here, again, we're talking shallow coastal waters, from about fifteen to thirty feet. In the past, historically, it's been seasonal cruises in the spring, the summer, and the fall, and we're cutting back to, I believe, spring and fall, and it's been, again, another data dive, to analyze whether there's been many differences in catch composition among those three, and I think we may actually do kind of a -- It started with a rotation of dropping just one of those each year, but now we're just going with two per year.

There's about 102 stations targeted each season, and the gear for this survey is 22.9-meter Mongoose-type falcon trawls, and they're paired, and we only process catch from one of those nets, and we also analyze whether there's a difference in either the port or the starboard net, whether it's on the onshore side or the offshore side, and we really didn't find a difference, and so we just process one, to help things go a little faster on the ship.

There is no turtle excluder devices on this gear, and so we do have data on turtles as well, and, recently, we've used Simrad multisensory net mensuration gear, so you can look at how that gear

is fishing, get all the dimensions of the openings of the net, get a better idea of the spread and the geometry and exactly how much area is swept.

As I mentioned, catch from only one net is processed, and those nets are towed for twenty minutes, and we do, after a long time of promise, finally have a new vessel to replace the Lady Lisa, just purchased this year, and it will be retrofitted to be more closer to exactly what we want, and we want it to be a stern trawl, moving forward, with just a single net, and we take a lot of the same type of biological data from priority fish species, and so age and growth, and reproduction and diet as well, and, for certain priority inverts, like shrimp and crabs, we look at egg development and any evidence of recent mating, to look at spawning seasonality.

Here are some of the most-encountered species for the trawl survey. It's croaker, spot, white and brown shrimp, butterfish, kingfish, harvestfish, weakfish, and we get Spanish and king mackerel, and several species of coastal sharks, as well as Atlantic menhaden and bluefish.

Again, just to kind of show a few kind of recent trends, Atlantic croaker and spot both seem to be increasing in abundance, compared to long-term averages, and weakfish and kingfish are also increasing a little bit, and not quite as sharply. Brown shrimp and white shrimp are a little more difficult to look at patterns, because they're more of an annual crop, and so they can be a lot more dependent on oceanographic and weather conditions in that year. Similarly, a lot of the data are used for stock assessments, compliance reports, technical reports, and then we also have a fair amount of peer-reviewed publications and presentations that come out of this survey as well.

The SEAMAP South Atlantic Pamlico Sound trawl survey is one that I'm not quite as familiar with, but it's out of the North Carolina DMF, and it was established in 1987, and they target the Pamlico Sound and associated rivers and bays, and they sample in June and September annually, and it's a stratified random sampling protocol, and they sample about 104 stations per year.

Like the Lady Lisa, they use twin thirty-foot Mongoose-type trawls, and they do twenty-minute tows. However, they combine their catch and process them together. They also take life history studies for age and growth and reproduction, and, again, that's for priority species, and they will see a lot of similar species that the coastal trawl survey sees.

Moving on to the SEAMAP South Atlantic coastal longline survey, this is a cooperative program with NMFS Fisheries COASTSPAN program, and it's a cooperative shark tagging program, in partnership as well, and that is comprised of North Carolina's DMF, SC DNR, and Georgia's DNR as well, and, at South Carolina DNR, that program was established in 1993, and it primarily targets adult red drum and coastal sharks, and the area of concern is the sounds and nearshore live-bottom areas. They also use a random site selection system within each stratum, and they have about 253 possible random sites to choose from. The target depth is about three to twenty meters, and the gear consists of about a third-of-a-mile longline, with forty hooks, and they soak for thirty minutes during daylight hours only.

Most of those fish are tagged and released. As I mentioned, it's cooperative with COASTSPAN. However, they are subsampled for life history studies, primarily age and growth, population genetics, and they also do several diet studies. Additionally, they also use this program to bring brood stock in for SC DNR's mariculture program, and so it's really important to enhance inshore fisheries.

Just to show you some of the shark species that we often see, the most popular is the Atlantic sharpnose shark, and so the dark blue is the number that are caught total, and, underneath that, in the light blue, is the percentage that are tagged, and so we tag a lot of blacktip sharks, sandbar sharks, blacknose sharks, bonnetheads, and finetooths, and we also see some sand tigers, some lemons, duskies, and nurses.

Again, just to stay in line with the other projects, to show you some recent trends, and on the top here is just -- So this is, rather than a normalized index of abundance, these are catches per set, and so CPUE. You can see that red drum has been relatively steady over the years, and maybe we saw a slight dip in CPUE in 2021, and then four of the most commonly-encountered sharks are the blacktip, the sandbar, blacknose, and finetooth, and you can see that down on the bottom panel, and it looks like blacktips and blacknose, in recent years, have shown a bit of an increase, and sandbars are finetooths, in the green and purple, have declined, or just haven't been caught as commonly, in the last year.

This survey also provides a lot of information for stock assessment and management. Recently, it's been used in several SEDARs, and also as a great source for peer-reviewed scientific publications and presentations.

One kind of new survey, just in the past few years, that's coming online, that we're really excited about, is the South Atlantic Deepwater Longline Survey, or SADL. It's a deepwater longline survey to generate indices of abundance and life history information to support stock assessments and management. Traditionally, those deepwater assessments have been pretty data-limited, and so we're really trying to put something together to help address that.

It was implemented in 2020, and we repeated it in 2021 and 2022, and we anticipate that we'll be able to continue it annually, and there seems to be pretty strong support and dedicated funding for it, at the moment, and the focal species are tilefishes, blueline tilefish, golden tilefish, and deepwater groupers, like snowy grouper and yellowedge grouper, and so, unlike most of the surveys that we are out there setting the gear, this is a cooperative effort with industry participants. In 2020, we had two participants, two different vessels, and, in 2021 and 2022, we had four participants, and we send a NMFS observer out with each of these vessels, and they collect all the data, and they look at site-specific details, of course, date and time and the location, and they take species-specific lengths and abundance and biological samples, mostly just otoliths and reproductive samples for right now, and we also record bottom temperatures for each gear deployment, from a sensor that's attached to the gear.

The survey runs from North Carolina down through the Florida Keys, in depths ranging from about seventy-five to 366 meters, and it's stratified by both depth and latitude, with random points as well, and the gear is a three-mile mainline, with 150 hooks per mile, and these are 12/0 offset circle hooks, and they are baited with squid, and so one thing we're really excited about, in 2023, is we had some interest from the Mid-Atlantic Council to expand the survey northward, off of Delaware Bay, which is really interesting, because it butts-up with a similar longline survey that they have in the Northeast, and so we'll have pretty much the same gear in the water, at the same time, from off of Cape Cod down all the way through the Florida Keys, and so we'll have a continuous survey for tilefish all the way through that area, which is really neat.

Just to look at the sampling intensity per year, in 2020, we were just kind of starting out, and we only set forty-six, and we've kind of gone through a process of different types of sampling, and so we had random sampling, some universe random sampling, and then we had what was called captain's choice, where the captains kind of just picked a spot that they wanted to sample, and we used a combination of those three survey methodologies for 2020 and 2021, but, in 2022, we decided to go with a complete 100 percent random sampling, just to kind of reduce bias and make the survey a little more consistent and robust.

These are just some data from the number of individuals caught, and on the first three columns are 2020 and 2021 and 2022 number caught, and then the next three are your proportion positive, and so just percentage of longline sets that had those species, and so, based on those catches -- We caught mostly blueline tilefish, golden tilefish, and snowy grouper, as expected, and, based on the proportion positive, you want it to be at least about 10 percent, to be useful for stock assessments, and so they think that we'll be able to provide good information to support stock assessments for blueline tilefish, golden tilefish, snowy grouper, almaco jacks, mutton snapper, red snapper, and greater amberjack, and so we're hoping this will really kind of fill some of the data gaps for these species.

MS. COOKSEY: We've got a quick question from David.

MR. WEBB: Thank you. The difference between 2021 and 2022, and there is some significant catches in 2021 that drop off in 2022, and then, in 2021, you had the captain's choice in 23 percent of the sets, and do you think that was part of the significant bias that you were looking to get rid of?

MR. SPANIK: Yes, for sure. Those catches that inflate those numbers could be from just one gear deployment, where they were just really going to places they knew for sure they were going to be, and we just really wanted to spread it to look at the entire area.

I just wanted to touch a little bit on the long-term monitoring value of these studies. When you have these long-term studies, you're really able to look at abundance over time, and you can see effects of management history, and you can see effects of changes in fishing pressure, and you have these long-term datasets that you can use to compare to special projects, like how effective maybe a spawning management area might be. If we've got good baseline data, we can use that to compare to and make good recommendations on where to put an area like that.

You can look at species distributions over time, and, of course, most people are recognizing range expansions and contractions for different species, as we deal with things like climate change, and, additionally, to make those inferences, we have CTDs that go down at every one of these sampling sites, and so we've got a ton of information on hydrographic conditions over time, and I will talk a little bit more soon, and these are publicly available, and I will give you an idea of how you can find those data.

I want to thank the Southeast Reef Fish staff, past and present, the staff on the trawl survey, the longline survey, our vessel operations at SC DNR, our SADL partners, Todd Kellison and Kevin Craig, the NMFS observers that go out on those boats, and our cooperative research partners that work on those boats as well. If there are any questions, I will be happy to answer them.

MS. COOKSEY: Thank you. I saw Casey's hand first.

MS. KNIGHT: This is a little less of a question and more of a point of clarification. For North Carolina's longline survey, we set about 200 meters of line, almost a mile of line, with a hundred hooks, and we set at night.

MR. SPANIK: Okay. I will update that. Thank you.

MS. COOKSEY: David.

MR. WHITAKER: Kevin, do you folks keep and index on the, I guess, with your cameras, for lionfish?

MR. SPANIK: We do.

MR. WHITAKER: Is there any discernable trends in that?

MR. SPANIK: We do, and we have staff working on a paper right now, and we just added another year of data to it, and it looks like the trends are decreasing a lot in recent years, and I'm not sure exactly what year it reached the max, maybe five or six years ago, and it's really hard to pick them out on the video in certain habitats, a really kind of diverse habitat with a lot of attached biota, because they blend in really well, and so sometimes the camera can not be the greatest tool for detecting them, but the information we have looks like it's really a leveling-off, and then a decline since then, since the kind of maximum abundance.

MR. WHITAKER: If I could continue, on your shallow coastal trawling, the SEAMAP coastal trawling, do you have any idea on the total biomass that -- I guess biomass per unit effort somehow, and has that changed over the years? I know some species are up, and some are down, and I don't know if you include, you know, cannonball jellyfish in that, but I was just curious if there is any trend of reduced biomass out there, or greater biomass.

MR. SPANIK: I would imagine that it fluctuates throughout the year, and I can look into that, or I can -- Well, I will tell you about the SEAMAP database online, and I will tell you how to get there, and you can check it out.

MS. COOKSEY: We have a comment from Mel.

MR. PUGLIESE: Mel is online, and I think he has a comment about considerations on the Lady Lisa, which is a big deal right now.

MR. BELL: Thank you, and I'm sorry that I'm not there today, and I'm having to multitask here, but, Kevin, great presentation, and there's an amazing amount of things going on, and, of course, South Carolina DNR is happy, and privileged, to be the homebase for a lot of that. Kevin mentioned the Lady Lisa, and, of course, when I'm wearing my council hat, I tend to think more of the vessels that Kevin showed at first, you know, related to SEFIS and the stuff that MARMAP does, but the Lady Lisa does play a role in collection of a tremendous amount of data that you're all familiar with, coastwide, from Florida up to North Carolina.

As Kevin mentioned, the Lady Lisa is forty-three years old now, I believe, and she's on her last legs, and we've known that we for a while, and so we underwent a process to acquire some funding from our general assembly, which took a lot longer to bring to fruition, in terms of a vessel in our possession, a new vessel, and it turned out to be not exactly as much as we needed, in terms of the money, and so where we are right now is, as Kevin mentioned, and it's good news and bad news.

The good news is, yes, we have -- We're in the process of actually procuring a replacement vessel, and she is steel-hulled, and the idea is to convert her into a stern trawl platform, kind of similar to maybe how they do things with NEMAP, but she would do the same work that the Lisa did, which Kevin described, and it's the shallower water trawl-type work, but, also, the Lady Lisa has, in the past, and I would think that's what maybe we would do with this new one, is have the capability to do longline work as well, and so a multifaceted platform that we're hoping to convert into a much newer vessel that we can operate for the next couple of decades plus, hopefully.

The Lady Lisa served us well for quite a while, and but so the bad news is that we don't have sufficient funding to complete all of the necessary modifications to turn her into that platform to take us into the future, and so we're in the process now of talking to people, including NOAA Fisheries and congressional folks, about trying to acquire funding to allow us to turn this state-owned, but regional asset, into something that can continue to do all of the things that the Lady Lisa did for the past several decades, and so I just mention that for all of you all, those of you from different states, and just keep in mind that any support we can get, in terms of expressing the need to keep the work that the Lady Lisa has done, through SEAMAP South Atlantic, going is important to all of us, whether you're looking at the fisheries from a council perspective, or a commission perspective, and, as you see, there is overlap, and the Lisa certainly does touch on species that are of council management, under council management authority, but also fisheries that, you know, are under state or commission authorities, but I just wanted to make sure --

I appreciate Kevin mentioning the good news, but, also, the challenge right now is coming up with sufficient funding to complete the necessary modifications on the vessel we've acquired, which will be fairly substantial. I just wanted to mention that, and it's our intention to, again, for the South Carolina DNR, to basically provide the platform, but think of it, while is a South-Carolina-owned research vessel, just like the Palmetto and just like others, it is a regional asset, and so she actually, as Kevin mentioned, works from Canaveral to Hatteras, and so just keep that in mind, but thanks a lot, Kevin, for bringing that up, and that was it. Thanks.

MR. SPANIK: Thanks, Mel.

MS. COOKSEY: Yes, thank you, Mel, and we have a comment from Paula.

MS. KEENER: Thank you, Kevin and Mel both, for that great presentation and update, Mel. What is the length of the time that the new vessel can stay at-sea, versus the Lisa? I may have missed that.

MR. BELL: I could weigh-in, if you want.

MS. COOKSEY: Yes.

MR. BELL: I don't think we know all of that right now. Well, she does have better legs, and so the vessel we've acquired is a steel-hulled vessel, and it was a freezer boat, and she made, while she was operating as a shrimp trawler, long trips, and so her legs would be a little longer, I think, than the Lisa, in terms of endurance, I would gather, just based on the size of the vessel, the tanks and everything onboard, the fuel capacity.

Once we complete all the modifications, she'll have a much more -- She'll have a much more comfortable crew capacity and lav space and all than the Lisa had, and so Trish, having served on the Lisa herself, can tell you about the berthing situation, but we did get all the berthing everything reconfigured, and she would be able to support the scientific party we need, as well as the crew, and I would assume in a lot more comfortable and a safer -- Because going to a stern-trawl is a -- Stern-trawls are a little safer to operate than the conventional trawls we've been operating, but, in terms of endurance, I don't know any specifics, Paula, but I'm just assuming, based on the vessel and the work she's done in the past, that she would have a little bit longer legs.

MS. KEENER: Okay. Thank you for that, Mel, and so it sounds like there's not going to be any hot bunking. Thanks.

MR. BELL: No, not intentionally, or, well, maybe until we get her fixed, and I don't know.

MS. COOKSEY: Mel, we have a question from Wilson.

DR. LANEY: Not a question so much as a comment, and thanks to both Kevin and Mel for all the information, and, you know, I concur 100 percent with what Kevin said about the benefits of long-term sampling. You just can't assess what's going on within an ecosystem unless you have long-term datasets, and it's just -- It's critical.

You know, the one that I'm most familiar with, and have been involved with for a long time, was the cooperative winter tagging survey, which, when we were using the trawler, we were tagging a lot more species than just striped bass. Now that we've gone to hook-and-line, just because of, as Mel noted, the funding shortfall for building out the new vessel, and, you know, money is tight, and so it was a whole lot cheaper for us to go to a hook-and-line platform, and day trips, as opposed to using research vessels, and we use five different research vessels, three of them NOAA ships and two university vessels, and we used the Savannah and the Cape Hatteras until the National Science Foundation decommissioned the Cape Hatteras.

It's still out there, but it's being operated by Cape Fear Tech Community College, but the one question that I did have, Kevin, is have you seen any trend in Atlantic sturgeon? The last time I went online and looked at the SEAMAP database, you just didn't have very many encounters with either species of sturgeon, and so I was just wondering if there's been any recent trend, and I ask that, in part, because North Carolina's serendipitous survey for Atlantic sturgeon, because they tend to be caught in the striped bass fishery-independent gillnet survey in Albemarle Sound, you know, shows a pretty nice increasing trend for that one, and I will just mention, also, that Matt Balazik, who has been doing the Section 6 work on that species on the Roanoke -- My understanding is he did document a gravid female this spring on the Roanoke, and so it looks like the Roanoke has both spring and fall runs of Atlantic sturgeon, which is good news, but, anyway, I will let you answer my question about the SEAMAP database.

MR. SPANIK: We don't really encounter sturgeon frequently enough, with any of these surveys that I just mentioned, to really provide a lot of information about that, and we do have, at SC DNR, and Georgia has a big program as well, that sample sturgeon more in the estuaries, and I can look into that for you, if you're interested.

DR. LANEY: That's okay, and I've talked to Bill Post.

MR. SPANIK: Okay. That's your guy.

DR. LANEY: I'm aware of what's going on on the inshore and riverine side of things. Thank you.

MR. SPANIK? Yes, and we also have a pretty good acoustic receiver array now, just off the coast here, that I know they're coming through a bunch.

DR. LANEY: Okay. That's great. That's great to hear, and, you know, we've talked to the offshore wind folks, and hopefully they will elect to include acoustic receivers in their buoys offshore, and that would be great if they would do that.

MS. COOKSEY: Paula and then Sam.

MS. KEENER: I don't expect discussion around this, but it's just a point that I wanted to make, listening to the discussion about research vessel needs and funding issues, long-term surveys, et cetera, I don't -- Well, this has been designated, the next decade, or the decade that we're in, as the United Nations Decade of Ocean Science Sustainable Development, and there are -- Of course, you know, all of the members of the U.N. are trying achieve sustainable development goals specific to the decade and SDG, Sustainable Development Goal, Number 14 is entitled "Life Below Water", and so I think it's important, when talking with certain stakeholders, to make the connection of between what we're doing here on the state level, and the regional level, in terms of coastal and ocean research, the importance of long-term surveys, the importance of funding, to tie that, as appropriate, to the global push to get it right, in terms of the ocean during this decade.

Otherwise, it's going to be too late for many of the resources, and for global citizenship as a whole, on multiple levels, and so I doubt that that connection is made often, that what we are doing is part, or directly tied to, a much larger global effort, but perhaps it should be. Thank you.

MS. COOKSEY: Sam.

MR. YOUNG: I just had a quick comment, because it jumped out at me when I was looking at the longline survey slide, that you've got -- I think that it says "contracted by SC DNR", and would it be South Carolina DNR, for the participants?

MR. SPANIK: Yes, that's correct.

MR. YOUNG: So is it a funding issue, and are four participants the optimal number of participants you're looking for, or -- It just seems short, to me.

MR. SPANIK: That's about what we need. It takes -- They each take -- It's divided up into four quadrants, and so each one of those vessels that is selected -- They each kind of -- Their homeport is within that, and so they get in and out and do all the sampling that they need to within about a couple of weeks.

MR. YOUNG: That's enough data to extrapolate, or are you taking the data and sending it to Clay Porch to run into an algorithm and --

MR. SPANIK: Pretty much, yes.

MR. YOUNG: I've seen the good side of that and the bad side of that, and so I'm a little skeptical of algorithms, but it is what it is.

MS. COOKSEY: I'm going to jump in with a couple of questions here, real quick. Mel, are you still there?

MR. BELL: If I'm unmuted, I am.

MS. COOKSEY: Okay. Great. I have just kind of almost a little bit of an in-the-weeds question, but, with regarding the Lady Lisa, which is super exciting, that you all have managed to purchase a replacement, and it definitely is a critical need, to be able to get the new vessel up-to-speed, and you mentioned that you had been in discussions with NMFS about trying to find those funds, and, while I'm on detail at Headquarters, I would like to be supportive, and so, out of curiosity, who in NMFS, and I'm talking like at the FMC level, like Southeast Regional Center, or are you talking to OMAO, that I can be on the lookout to help with that.

MR. BELL: What we've done -- Of course, we started kind of at the lower level, and just some casual conversations with the Southeast Regional Office and the Science Center, just, you know, again -- What we're specifically looking at, Cindy, is NOAA Fisheries has available a fairly large amount of money, which is the Inflation Reduction Act money, I guess is the way to describe it.

MS. COOKSEY: Yes, the IRA.

MR. BELL: It's a big pot of money, and it's our understanding that some of that is kind of designated for the idea of maintenance of surveys, or data generation, and that sort of thing, and so it seemed to be a logical fit, and so what we were advised is that really, you know, at the regional level, and, of course, there was no plan, no idea, of how the money is going to be spent, but they basically said that we needed to kind of talk to Headquarters folks, and so we've actually done that, in terms of actual communication with Headquarters, and it's been sort of indirectly through the assistance of the Atlantic States Marine Fisheries Commission staff, because they have people, you know, in the D.C. area and all, the Silver Spring area, and so there have been a couple of conversations with them and Headquarters folks about the concept.

I know there's been some congressional -- At least one congressional kind of inquiry, to the Secretary, about, you know, hey, maybe this would be a good idea for some of that money, and so we're still at the kind of just trying to sell the idea, because it's logical. If we're talking about maintaining very important long-term surveys that generate data that we utilize -- That are critical

to all the decisions that we make at the council, or at the commission, and, if you don't have the boat, you can't collect the data.

MS. COOKSEY: Absolutely.

MR. BELL: The surveys are at stake, and so it really is a Headquarters, I think, discussion at this point, and I think, you know, the CCC meets next week, and there may be some opportunities for folks to have some conversations with Headquarters people about that. You know, again, we're just trying to make sure that folks understand the importance of these data that that vessel has generated for decades, and the replacement vessel would continue to generate, and pointing out that, while South Carolina's partnership in all of this has involved owning the vessel, and maintaining the vessel, we could really use some help right now in transitioning from the old vessel to the new vessel, because, you know, for a lot of reasons, and things cost -- I mean, we were naively thinking, at one point, that we were going to build a vessel, and this was pre -- This was about the 2019 timeframe or so, but then we suddenly realized that, oh no, you're going to be lucky to be able to just purchase, you know, a used vessel, which we have, but it's really a Headquarters thing, Cindy.

I mean, that's where anything, any conversations or whatever, about just the importance of the data, the importance of the work that this vessel would do as a regional asset, and it's not a -- It's state-owned, but it's not kind of a state asset, and it supports things along the whole coast in our region, and that's where -- So, to answer your question specifically, Headquarters is probably the place to have the conversations, or at least, you know, kind of make sure people understand what we're -- The need and how -- And, fortuitously, there seems to be a little bit of money sitting there right now, which kind of seems to fit.

MS. COOKSEY: Yes, that was really helpful, and especially identifying that it's in Headquarters, and there's been some talk about the IRA bucket, and so I hope that I can also work as an advocate for this, because I definitely see just how critical it is for our fisheries survey program in the Southeast.

MR. BELL: That would be great, and, really, you know, if you consider the council, the commission, the various folks within the council process, and we're all kind of the customers, you know, and so, as sort of a customer, or a user, of the data -- You know, that's another avenue to kind of hear from, which is useful, and, again, it's not just South Carolina DNR saying, hey, we need some money to help us with our boat, and it's not really our boat, and it's a regional asset.

MS. COOKSEY: Exactly, for them to hear it from multiple angles.

MR. BELL: Yes, and so thanks for your interest.

MS. COOKSEY: I see that we've got Wilson and then Anne who both have hands up.

DR. LANEY: Thanks, Madam Chair. Hey, Mel, you didn't tell us how much of the water in that bucket you need. What is the cost of fitting out the new vessel?

MR. BELL: It's only an estimate at this point, and we really couldn't get a fairly hard estimate until we knew what vessel we were talking about, because we had to go through an entirely

separate process for the procurement of the vessel, and now we have the vessel, and we're looking at it, and, actually, we haven't totaled everything up, but we're probably talking a million, or a million-two, something like that, and, again, that's assuming things don't go crazy, like they did before, you know, with yard work and that sort of thing, and so it's going to be a million, a little in excess of a million, perhaps, to get it all done, and, again, it's an estimate.

Of course, then we would, of course, have to go through the entire bid process for all the work, and then, you know, get it done, but that's kind of what we're shooting for, just in terms of talking rough, round figures, and it should be pretty close, is a million, or just north of a million, maybe.

DR. LANEY: Okay. Thanks. Yes, I've had the experience of, you know, having the vessel in the yard before and discovering that what you thought you were going to pay is not the actual number that you wind up paying, and we've also had an interesting experience with respect to water supply on the vessel, which I can share with you some other time.

MS. COOKSEY: Anne.

MS. DEATON: I was just interested in that amount of money too, because we -- At North Carolina Division of Marine Fisheries, we recently got a new large vessel for oyster sanctuaries, through state legislative funding, because of advocates pushing for -- You know, helping for the oyster restoration, but, yes, they're still working, and they've had the vessel a while, and they're still working on getting it up-to-date, and so they might have contacts too, if you need help on that kind of end. Anyway, thanks.

MS. COOKSEY: Casey.

MS. KNIGHT: I just wanted to follow-up, quickly, on Wilson's sturgeon comments, and so they did document a running ripe female in western Albemarle last week, and I also think they were able to satellite tag it, and so it will be interesting to see if she comes back into the system in a couple of years. Then, as far as the striped bass survey catching a lot of sturgeon, at the behest of NOAA, that survey has been dramatically redone to continue to hold the abundance trends that we need for striped bass, but decreasing our actions with sturgeon dramatically.

MS. COOKSEY: Thank you. I actually have -- I want to go back to Kevin, and I have some questions related to COASTSPAN and the coastal longline survey, and I'm just trying to figure out what is happening with those. Are those the same survey, or are they working in partnership together?

MR. SPANIK: I believe they're integrated, and the COASTSPAN is predominantly the tagging aspect of it, and so those three, Georgia, South Carolina DNR, and NMFS, I think they all -- They get funding from NMFS for that, pretty much, but it's -- The actual work is being done by those state partners, if that answers your question.

MS. COOKSEY: Well, I guess I'm asking because the data coming out of -- Potentially the data coming out of COASTSPAN, specifically related to the identification of pupping grounds and nursery areas for our shark highly-migratory species, is of great interest right now in the Southeast, and I was just trying to identify whether or not I should be reaching out to COASTSPAN, to potentially send someone to our fall meeting, if at all possible, to talk about that survey in

particular, or if we're already getting at the meat of the survey by hearing about the coastal longline survey.

MR. SPANIK: Let me -- At South Carolina DNR, our contact for that is Brian Frazer, and can I send that to you, and he would know better. He's our contact for that.

MS. COOKSEY: That would be great. That would be super helpful. I'm not sure how much we've talked about this, but, you know, because of the changes in the SARBO, the South Atlantic Regional Biological Opinion, that affected our endangered species, there's been a change in when -- The time of year that the U.S. Army Corps of Engineers is trying to do a lot of their coastal inlet and near-coastal dredging. As a consequence of that, I have been engaged in risk assessments with the Corps, specifically for our federally-managed species, and we are actively trying to identify when the greatest risk occurs with our highly-migratory species either, you know, ingressing in, for pupping purposes, or when they're egressing out, our juveniles, from the estuaries, what time of year that's occurring in, when is the greatest risk from inlet dredging, as we try to deal with this issue, and so I have a great deal of interest in trying to get as much information as possible in the Southeast for the timeframes that that's occurring in, and so the COASTSPAN, and/or the coastal longline survey, are potentially critical for getting a handle on that.

MR. SPANIK: I know that program is a lot larger than just those three states as well, and I used to work in Virginia, with VIMS, and we had a section of that as well that they were supporting, some of the inshore shark research there too, but, yes, I will definitely hook you up with Brian, and he'll be able to give you a lot more information on that.

MS. COOKSEY: Okay. Thank you. We have Wilson and then David.

DR. LANEY: Okay. Just a comment on your comment, and, you know, I agree that the data are needed, and year-round data are needed, so we know what those animals are doing year-round, and, with respect to the Army Corps of Engineers, both the Wilmington District and the Savannah District, at least, my understanding is, you know, in both cases, they sought, again, as you noted, based in part on the SARBO, to drop environmental monitoring windows.

That recommendation to drop those was challenged, through litigation, both in Georgia and in North Carolina, and I think in South Carolina, but I'm not 100 percent sure about that, but definitely in Georgia and North Carolina, and, in both cases, my understanding is the Corps lost those lawsuits, and so what's going to happen next I'm not real sure, but, at least in North Carolina, the judge remanded their environmental assessment back to the Corps of Engineers, and I guess they elected not to -- That was appealed, and they lost on appeal, and then they elected not to carry that forward, is my understanding, and so it will be interesting to see what happens, but it sounds like, at least in the short run, they're going to have to go back to adhering to environmental monitoring windows to do their navigational dredging in those areas that they were trying to drop those from.

MS. COOKSEY: Just FYI, Brunswick, the Savannah District, is going back out on notice to reevaluate the operations and maintenance dredging aspect in the Brunswick Harbor and the environmental windows, and I don't have my specific notes in front of me, to go into detail, but that is going to be going back out, and so we are preparing to engage in another consultation on that.

Then, in South Carolina, there has also been some movement on that, for coastal inlet dredging projects, and, of note, I completed a programmatic assessment, or a programmatic consultation, with the Corps for all of their intercoastal waterway and routine coastal inlet work that we did have conservation recommendations involving environmental windows for dredging, but we will see how that is utilized, as time goes on. Anne.

MS. DEATON: Just a question for that, for the waterways, and what you mentioned earlier, risk assessment, and is that for the whole South Atlantic, or for certain states, and are you doing it for North Carolina?

MS. COOKSEY: Right now, I am engaging in risk assessment as projects individually come in, and so I went through a risk assessment process, in partnership with the Savannah District, for Brunswick, and, of course, that consultation is now closed and in the past, because they're revisting it, and so we have to do it again. The programmatic, I pulled in as much information as we had available at the time to identify the windows, based on the existing information, and so, right now, it is piecemeal, but the South Carolina programmatic is all the federal waterways operations and maintenance activities for the state. Wilson.

DR. LANEY: Are those documents, those assessments, available, Cindy, somewhere?

MS. COOKSEY: They are, and they're in the administrative record, and they're publicly available. Anne.

MS. DEATON: Just one other comment, talking about the value of these regional surveys for that, and probably the best one would be SEAMAP trawling, would be getting you the closest, you know, because, really, these -- A lot of this dredging is at the mouths, and outside a little bit, but not probably as far as they sample, but it's still a great indication of where the fish are when.

MS. COOKSEY: Right, and that's why I was really interested in the COASTSPAN, because my understanding is that they are going into the estuaries, and they are in the inlets, and so we are trying to get a handle on that, using the existing survey data that we have available, because the reality is that there is not a lot of research going on within the inlets, because they are such an incredible challenge to try to sample, but we know they are our super highways, and they are identified as habitat areas of particular concern within our fisheries management plans, and so -- But I had good luck, with the risk assessment process, at getting at least the highest priority timeframe within the inlet, as a blackout window, and I'm continuing to work on that. Wilson.

DR. LANEY: Could you just briefly summarize for us -- I don't want to jump way down into the weeds, but just summarize for us what the risk assessment showed to be the highest risk period for the species that you were looking at, and I presume those were like Atlantic sturgeon and the sea turtles and sawfish.

MS. COOKSEY: No, no, no, and that is SARBO, and that is the Endangered Species Act. EFH consultations are under Magnuson-Stevens, and so I am only focused on those species that are managed under a fisheries management plan and have designated EFH, and that is the hallway that I have to walk in, as part of my consultation process, and it is a very narrow hallway, and so I do what I can with what I have.

DR. LANEY: Okay, and so the SARBO though, as you said, relates to ESA, and so is PRD doing the risk assessments for ESA species, or is the Corps supposed to do those?

MS. COOKSEY: No, no, no, and PRD did the South Atlantic Regional Biological Opinion, SARBO, and they redid and finalized SARBO -- I think it was 2021, or 2020, and that is now what the Corps is following, and SARBO no longer has environmental windows. Stacie and then Anne.

MS. CROWE: One of the benefits of Cindy's risk assessment work though, even though it did not include the ESA species, the turtles and the sturgeon, from our perspective, SC DNR continued to recommend those seasonal dredging windows, knowing that the Corps was going to adhere to SARBO, but we essentially were able to piggyback off of Cindy's risk assessment windows, because they covered those important timeframes that encompassed the ESA-listed species, and so it really was -- It was very beneficial, from that perspective.

DR. LANEY: Okay. I would love to have some more conversation with you about that offline.

MS. COOKSEY: David.

MR. WHITAKER: Now that that's finished, we're here about habitat, and, in listening the very good presentation by Kevin, and your guys are working from, I guess, a couple of fathoms out to 150 fathoms, but one of the habitats that doesn't get much coverage is the surf zone, and, if you think about some of the resources in there, like anchovies and silver sides and pompano, a fishery resource which seems to fall totally through the holes, yet it's a very important recreational resource, and I'm not asking a question here, but I'm just making a point that, with sea level rise, and perhaps the dynamics changing a bit on what's going on in the surf zone, a hardening of the beaches, and that's probably going to happen when houses start falling in, and you wonder what's going to happen to these resources. I don't know that some of these prey species, like anchovies and silver sides, are going to be that critical to the big picture, but, nevertheless, I just thought I would throw that out.

MS. COOKSEY: I am going to back up 100 percent that it is critical, because that's also part of the highways in which our larval and juvenile species that we're managing, and the prey that they are consuming, are also utilizing those habitats, and I agree that it's often a big blank area for us in the Southeast. Wilson.

DR. LANEY: I agree 100 percent, David, and, if anybody has ever tried to sample ichthyoplankton in the surf zone, you know what a challenge it is. We -- I say we, but NC State University, did some of that, way back when, when jetties were proposed at Oregon Inlet, and sand bypassing was necessary across the inlet, to maintain Pea Island National Wildlife Refuge, and so John Miller, at the time, and Mac Currin, did some -- They made some efforts to do some ichthyoplankton sampling in the surf zone, and it's just a tremendously challenging and dynamic environment to try and do any sort of rigorous, meaningful, from a statistical standpoint, sampling, and so I totally agree with you, and I hope that somebody will, you know, jump in there and take it on.

I will mention that the Corps of Engineers has this relatively unique piece of equipment, at their Duck Research Pier in North Carolina there, and I don't know that anybody has ever proposed to

use that gear for sampling ichthyoplankton, but I suppose that might be a novel possibility, and it might be worthwhile having some conversation about the Corps about that at some point.

MS. COOKSEY: I love how we came full circle back to the beach renourishment policy. Kevin, thank you so much for that, and that was highly informative, and I look forward to potentially hearing more from Brian Frazer, who was the contact, and are there any other questions or comments, or anything online, before I move us on? Roger.

MR. PUGLIESE: Just a couple of things to set up the discussion we're going to have shortly, and, following-up essentially on also the new vessel coming forward, just, I guess, picking up on bigger-picture things with that, the need to have that in our region -- It's been something that we've highlighted, and that's actually included in the in the SEAMAP five-year plan, as a priority, to be able to, you know, backfill and provide that, because, essentially, all these surveys are providing -- Not only the fisheries information, but all the foundational information we have for habitat, to a great degree, are coming from the distributions of various types of habitats, and they're coming from these, and any of the, you know, future things that we're looking at, maybe additional sensors or additional capabilities, and it could happen with this.

I think it is also serving the bigger pictures beyond this, because of the discussion we just had about the need for that connectivity, and so, if we're starting to talk about a big priority that's coming out of say the climate scenario planning efforts, on making these different surveys connected, or have the ability to compare it, making sure that we have that vessel online is going to be really important to meet that bigger picture for understanding, you know, the Atlantic coast type of a system, and so I think that's something that's big.

In the past, I know the SEAMAP committee has supported the Caribbean, because the SEAMAP program is Caribbean, South Atlantic, and Gulf of Mexico, as a unified group, supported by funding through NMFS to the Caribbean for a vessel, or at least some partial funding type of thing, and so I would hope that maybe we could have some discussions, at least run it up the chain, because that is the program that is, you know, supporting the actual survey activities, and, if NMFS could figure out -- Maybe utilize this, or at least highlight it as a priority, maybe some statement from the overall program, and then, up the chain, whatever resources are available could be focused, given all these different really significant priorities.

I think one of the things I'm hoping is that a new vessel comes online, and new technologies can come on, such as, you know, multibeam, because, I mean, to me, it's always crazy that we're sending out vessels continuously, with opportunities to, you know, collect additional mapping, when they get off a site, and that whole balance you have to play, with new -- You know, new technologies, or new capabilities, on a vessel, being balanced with not impacting the vessel operation, and it's always been an issue, but I think we're getting to the point where some of these are, you know, operational without additional personnel and different types of things, and so hopefully the support can come through those different efforts.

The whole reason that we wanted to have these discussions, and the connection too, is all the different things that we just talked about, the impacts on habitats, the information being collected, the opportunities to look at new capabilities on these different surveys, or environmental information, or our new survey technology, to get to some of the life stages we don't have.

I mean, this gets to some bigger things, and so that's why this was really kind of critical to set the stage for some additional discussion on what some of our longer-term needs are, I think, for habitat and species use of habitat, and so I do appreciate all the presentation, and, as we get into this, keep that in mind, because that's what -- I think there's opportunities that we can highlight what's being done and then maybe to support it even more, because of these different types of needs we have for the longer-term habitat information.

MR. SPANIK: I will just point out that most of these folks are usually very receptive to assisting with other projects, and the bulk of the money is the ship time, and so we are just trying to get as much information from every fish that we pull out as we can, because it's hard, and we have to make decisions, regarding funding, on the fish level, when that's overall at the marginal cost, you know, but --

MS. COOKSEY: Okay. We've got a comment from Wilson, and then we're going to take a very brief break, until 10:30, before we jump into the habitat information needs discussion.

DR. LANEY: Just very quickly, I know -- You know, you're in a position to be able to certainly talk to people in NMFS Headquarters, but, for those of us who are private citizens, and no longer have to worry about agency constraints with who we can talk to, is there a particular recommendation, Mel, if you're still online, with respect to congressional staff, or congressional members, that might be influential with respect to the provision of the needed funding to finish the buildout?

MS. COOKSEY: I would leave that question to Mel.

MR. BELL: I was actually dealing with a text right now, but what was that, Wilson?

DR. LANEY: Cindy has indicated that, you know, she's certainly able to talk to Headquarters folks, but, for those of us who are private citizens, and not under any sort of agency lobbying constraints, are there particular members, or their staffs, in Congress that it would be productive to advocate for the funding that SC DNR needs to complete this regional asset?

MR. BELL: I certainly can't ask for specific lobbying and that sort of thing right now, but we're probably just a tad early on that, but, obviously, you know, the more this is understood as a multistate need, with, you know, something that will benefit us all at some point in time, that could be helpful, but I'm not in a position right now to go into any details or to discuss that, and I can just tell you that we're still working on kind of the overall plan for how best to approach all of that, and so, you know, once there's an appropriate -- You know, we've got an idea of appropriate mechanisms, we can certainly pass that along, but it's just good to know that a group like this understands the importance of this coastwide to all of us and the importance of the -- In particular, the importance of the data that are generated because of the availability of this regional asset. That's a long way of saying that I can't really go into that right now, Wilson.

DR. LANEY: Understood, and so, yes, I got it.

MS. COOKSEY: Okay. Thank you, all, and we will reconvene at 10:30 for habitat information needs. Thank you.

(Whereupon, a recess was taken.)

MS. COOKSEY: Thank you all for returning, and we have a few colleagues out in the hallway, which they will hopefully be returning very soon, but I do want to keep us on track for finishing up at noon today, which is what our current schedule is, and so I am going to hand it over to Roger for our next discussion. Thank you.

MR. PUGLIESE: Okay. One of the items that we wanted to address, in the line of discussion on research needs and all the activities ongoing right now, was the council has a South Atlantic Research and Monitoring Prioritization Plan for 2023 to 2027 that they're going to be reviewing at the June council meeting, and, in the past, this plan has actually, to some degree, been very focused on trying to really get the core activities, and the way it's laid out right here is it has, you know, short-term research needs for the stock assessments that we know are coming, and some of those have expanded information within there for individual species, which have some overlap with, you know, habitat or ecosystem needs.

It does lay out assessment and research priorities, and, again, there's an attempt to try to go further than, you know, past things, you know, looking at talking about something like regime shifts and different things within these, and it does highlight the key species, again, that are under review for specifically assessments.

It does get into longer-term research needs for the marine protected areas, managed areas, such as special management zones and deepwater MPAs, and it provides, you know, larger management research needs, and this gets to -- Actually, at least we begin to integrate some of the information, or needs, for climate change within that section, but then we do have specifically habitat research and monitoring needs, and those have mostly been -- Since this has been more focused on kind of more immediate needs, it has not been really expanded significantly, and so this is an opportunity to add some of that in, at least in this iteration, and, after all of our discussions earlier on, highlighting some of those points, and then we can integrate that, and that can be provided up to the council and expanding this into the future.

Then it does get into -- One of the last sections is specific to monitoring priorities, and so, with that, I think we can just open it up for discussion on how we can populate more within this habitat research needs section.

MS. COOKSEY: I am going to go Wilson in just a second, but I hope everyone got a feeling of the difference between what we have there, our brief little bullet points for habitat research and monitoring needs, compared to the six pages, or seven pages, of research needs for stock assessments, and so I really do feel like this is important, for us to begin the process of filling this out in a way that can help address the needs that we have, that have been spoken of under individual discussions throughout the meeting, and so please, and I'm excited to hear folks' comments. Wilson.

DR. LANEY: Thank you, Madam Chair. Yes, I 100 percent agree, and the one that immediately came to mind, Roger, just looking at that very short list, as Cindy just pointed out, is, is this where we might want to include -- We had a previous discussion, on the record this week, about my error, when I was trying to recall which reports would be useful to us in updating the energy policy, and I mistakenly referred to the South Atlantic habitat assessment, but wouldn't that be something that

would be rather important for us to include in this document, and it's something that I think, you know, logically, the Southeast Fisheries Science Center would take the lead on that, and do something equivalent to what the Northeast Fisheries Science Center did, and the Mid-Atlantic and New England, and so I don't know, and I will just toss that out as a possibility, and we might add a bullet that says to encourage, you know, the Southeast Fisheries Science Center to consider undertaking a South Atlantic habitat assessment, similar to what GARFO did, something along those lines.

Then, Cindy, I totally agree with you, and there's a ton of stuff that we can add here, and Kevin mentioned the need for us to know more about the early life stages of all of the snappers and groupers, especially those that use the estuary, like gag, and so that's another one that we could throw in here, and I guess I will just ask how you want to proceed on this. Was it your intention that we try and throw out a bunch for inclusion today, or should we review this and then send additional ideas for habitat research and monitoring needs into you and Roger for -- As a response, or do you want a response from the whole AP that goes to the council?

MR. PUGLIESE: I think if we -- Well, Chip is going to probably come up and talk, but, I think, if you all provide that -- The turnaround is pretty quick for the briefing book, but I think, if we have that discussion here, we can consolidate it into, I guess, a more uniform -- Let me let Chip touch on it.

DR. COLLIER: Just a little bit of background on why're doing this differently than we have in the past, and we're recognizing that, as we're trying to get into more ecosystem-based fishery management, that we need more than just the SSC involved in providing recommendations, and I think it was pointed out that, you know, we have focused on a lot of stock assessment issues, and that is why that's the focus of it, because it was the SSC that provided many of the comments, and we want to bring this before all of our APs, and not just kind of the science-based APs, the SSC and the Habitat, but we also have taken it to the advisory panels for the Snapper Grouper AP, as well as for the CMP, or the Coastal Migratory Pelagics, which is mackerel and cobia.

We're reaching out and trying to get more information from you all, and I don't think we need specific things, like early life history of gag, and that is in there already, and we know we need early life history for all of the species that we manage. An index of abundance for that would be key, but we're thinking more of the habitat-related issues would be very good, and we need it timely.

This will get approved at the June council meeting, and our briefing book is next week, and so, if you guys could have recommendations at this meeting, it would be great, but we could also add them in right up to the council meeting, but that's not giving us a lot of time to put the information in there.

MS. COOKSEY: David and then Wilson.

MR. WEBB: Well, I will be the fall guy for this. I feel a little bit safer, because Captain Bill Kelly is no longer on the AP and making this comment, but is there any way we could wordsmith something about the commercial fishing that takes place, for instance, in Monroe County and our national marine sanctuary? In any given year, there's 850,000 lobster traps set in the sanctuary, and the devastation to the seagrass and the little remaining coral there is exponential, and so I know

we changed the word "retreat" in another paper, to make it a little softer, and I don't want to look like we're attacking commercial fishing, but, at some level, is there any thought to addressing that kind of large-scale operation in a very sensitive area?

DR. COLLIER: I mean, we haven't had that in our research and monitoring plan for habitat, and I'm not certain if FWC includes that, but that's definitely something that we could look into adding in this. You know, it wouldn't necessarily mean that it gets done, and it could potentially be added to a request for proposals, when information goes out, and so we can definitely put that in there.

MR. WEBB: I wasn't meaning it to be focused only in Monroe County, but in the entire area of the council, and there's all different types of commercial fishing that takes place, and the South Atlantic Council has already taken some steps to restrict, or prohibit, certain types of fishing in certain areas, because of the impact on habitat, and so I just think -- You know, I don't know of any studies that are being done specifically, but that may be something that we want to focus on, because, as the habitat becomes rarer and rarer, that kind of impact is devastating.

DR. COLLIER: So maybe something like impacts of fishing gear on EFH habitats?

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Madam Chair, and so, David, there was some work done on stone crab traps, and potential impacts, and there was actually a study to look at trying to modify crab trap design, to reduce the likelihood that they would be shifted around and damage corals, you know, when they were set in close proximity to reefs, and so there has been a little bit, and I don't know whether a similar sort of work has been done with lobster pots or not, but I was going to point out that one of the places that we might want to look is in the ASMFC's research needs document, which, at one point, Simen, was being done every two years, and the last time I remember Pat mentioning it, I'm not sure it was being done on that frequency anymore, and it used to be published as a hard-copy report, but now I think it's like a living online report, and so we might look there, and that one is done by species.

They had high, medium, and low-priority items, and so we could possibly look at that and pull out things that would be of mutual interest to the council, as well as ASMFC, and so that's one place to look, and I had something else that I was going to suggest as well. Oh, and we talked a lot about, you know, ichthyoplankton surveys and the paucity of those, and David pointed out the importance of the surf zone, David Whitaker, and so we need to understand a whole lot more about which life stages are using which habitats, and, you know, that takes those kind of long-term surveys that Kevin briefed us on, and most of those are targeting, you know, adults, or older juveniles, even though they're starting to look at that inshore juvenile survey he mentioned, but the ichthyofaunal work really needs some bolstering.

Again, you know, there's not only challenges, in terms of the gear you use and the habitats you're trying to sample, but also the identification thing, and I guess, Cindy, is it correct that NOAA still has to send all of their ichthyoplankton samples from the bridge net survey in Beaufort -- Those go to Poland for identification, because we don't have the taxonomic expertise here in the U.S. Okay, and Paula is going to correct me. Good, and so we do -- You know, there's a whole big area of need for the early life stages especially.

MS. COOKSEY: I've got Paula and then Anne, or Anne and then Paula.

MS. DEATON: Thank you. I was just -- I see that you've been writing things up there quickly, and so I was going to say -- It was very coral-centric, and so, to expand it to some other habitats, and I think SAV in particular, and there's a lot of concerns with it, because it's so sensitive to environmental degradation and climate change.

In North Carolina, we now have enough data to show that we are seeing reductions, mostly on the deep edges, and a lot of the concern is fill grass, because we're at that transition zone, because it's the southern limit, and so the temperature changes and such, and I know that NMFS -- You have a habitat assessment for the South Atlantic region, and I think NMFS did that. We have that, but it doesn't get to the level that you need to see how it's going to affect your managed species, and so something about more detailed, and maybe it has to be at a state-by-state level, but then that information is combined, because I think Kevin Craig had said that the problem is that the states don't have the same level of data, and so you can't merge it into a South Atlantic assessment, but we need that, and so that would be my thoughts.

MS. COOKSEY: I saw Wilson is --

DR. LANEY: Paula is next.

MS. KEENER: Thank you. When I look at the first word up there, "map", to me, you cannot separate mapping from characterization, and that just came up there, and so perhaps, in the wording of this, you could put "map and characterize", and then list out all the different pieces that are being put up there. Wilson, thank you for bringing up the focus on ichthyoplankton, and I appreciate your comment, Anne, on the focus on corals, but "deep-sea corals" I think needs to be defined here, or not defined, but explicitly mentioned, in addition to "corals", or "deep-sea corals".

Also, Wilson mentioned the energy policy, and I'm wondering if looking at trying to be proactive, as much as we can, in terms of climate change, and should we put something in here that promotes -- To seek opportunities for expanding -- Seek opportunities to expand long-term monitoring efforts, such that, for example, placing sensors on wind platforms that could point back to these recommendations and find some footing in supporting these recommendations for doing that, and I don't know. I think the long-term monitoring piece is important, and I don't see that up there anywhere. Is it? Is it up there? Am I missing it?

AP MEMBER: (The comment is not audible on the recording.)

MS. KEENER: Okay. Thank you.

MS. COOKSEY: Wilson and then David.

DR. LANEY: Thanks, Madam Chairman, and so, Anne, there isn't a habitat assessment for the South Atlantic region, and that's where I got confused the other day. What there is is the South Atlantic Ecosystem Status Report, and it has a lot of information in it relative to, you know, the oceanic habitats, but not so much --

MS. DEATON: (Ms. Deaton's comment is not audible on the recording.)

DR. LANEY: Some estuarine stuff, but, for example, I don't even think -- Even though we had this discussion with Todd on a number of occasions, I don't think that the ecosystem status report looked at wetlands loss, you know, in the South Atlantic, and I could be wrong, because I know we talked about it on a number of occasions, when we had Todd on the phone, you know, talking to the AP, during some of our virtual meetings during the pandemic, and so take a look at that South Atlantic Ecosystem Status Report, because there's a lot of good stuff in there, and I think it will be very useful, if the AP takes a look at that and reviews it, but I still think that's a valid bullet for inclusion in our list here.

Then the other thing that I forgot a while ago, that I was going to mention, Chip, was gray triggerfish spatial distribution and ecosystem considerations, and, as a result of having been the lead for those two ad hoc workgroups, and delved into the literature, at great length, I can tell you how little information there actually was that was useful to the stock assessment folks in trying to understand the relationship between gray triggerfish population dynamics and its environment.

You know, understanding those relationships, and being able to incorporate environmental parameters into modeling, which I think everybody agrees would be a good thing, is very difficult, unless you've got long-term studies that show, you know, a cause and effect.

For example, one of the things that I had several discussions with our stock analyst about is, okay, is gray triggerfish really expanding its range north or not, and, at the moment, we decided that, well, we don't have sufficient data from north of the North Carolina line to establish an index, and there are some hints. Again, Erik Williams told me that, Wilson, you're squinting at the data, and so, if you squint at the data, you may see a little bit of a trend there, but it's not statistically significant, even though we know we're got directed recreational fisheries that have developed north of North Carolina and Virginia and in New Jersey and in Maryland and other places like that. Again, Chip, we could -- You know, we could get a whole lot more specific, but I think what we want to do is be responsive to what the council needs at the moment, and I like the list that's developing up there, and I think it can be a lot longer.

MS. COOKSEY: David, and then I'm going to jump in.

MR. WEBB: Roger, I don't know if, in seeking the opportunities, if it's intuitive, but especially we're talking about the windfarms, and should we illuminate the cooperative -- Should we say "cooperative efforts", for any of these projects, or as many as we could, and, with the fishing gear, that would be -- In Monroe County, ICARE and Mote Marine Laboratory, who are desperately trying to clone disease-resistant corals and plant them out again, are dealing with losing massive amounts of the coral they plant to the fishing gear, and so they may, or may not, already have a position, or some research, on that, and so, if we make sure that we point to looking at the cooperative opportunities for any of these things, that would be important.

MS. COOKSEY: I want to jump in here, because I feel like this is potentially a really big topic, and we have really important ideas being discussed and shared right now, but, the strategic person that I am, I do want to put some guardrails out there to help facilitate this discussion, and I'm going to bring it all back to Magnuson-Stevens, which is, you know, our overriding legislative authority, the umbrella that we're working under, and, you know, when we think about habitat research

needs, it all goes back to what has the council designated as EFH, and there are four levels of designation under Magnuson-Stevens for EFH, and Level 1 being presence-absence.

The majority of our EFH in the South Atlantic is based upon some degree of presence-absence data, which is the most basic level, and it's how we kind of end up with all soft-bottom habitat for shrimp is designated as EFH. However, we can move up in our levels if we have the data available, the most recent science, to drive that, and we can get to Level 2, which is based upon densities, where we get a lot of shrimp, or a lot of gag, or a lot of something, and we can drive that as a Level 2 designation.

Ideally, we would like to see all of our designations in fact based upon Levels 3 and 4, and not only does that help our overall scientific understanding of the species that are being managed, but it then comes into play from the perspective of protecting and conserving those habitats and directing more resources to those habitats, and so looking for growth, reproduction, and survival rates within habitats, and, lastly, where production rates by habitat are available.

You know, I love all of these discussions, and, you know, they certainly can fall somewhere under the umbrella, but is there a place within our research and monitoring needs, to bring up the fact of trying to better identify the EFH designations within our areas, and use that for some food for thought in the discussion? Anne.

MS. DEATON: That's not what I was going to say, but, since you said that, it brings up -- I mean, it's kind of what we tried to do by identifying what we called strategic habitat areas, and so we did it through a spatial analysis, and we did verification with sampling, to see are certain areas, because of the habitat presence, or the connectivity with other habitats, more productive, resulting in more fish, better survival, et cetera, and so, yes, I agree with you, and it could be -- Instead of many, many bullets, you could have something about getting more support sampling to obtain more data on the most productive -- We might have to work on that.

MS. COOKSEY: Right. What are the habitat rates, or what are the habitat areas, that most influence production rates for --

MS. DEATON: We use the word "strategic", because it's -- I mean, it's prioritizing certain areas over others.

MS. COOKSEY: Correct.

MS. DEATON: Which may not be, you know, great, but, if you have to like focus your efforts, you want to know what are the conditions that maximize productivity and survival of certain species.

MS. COOKSEY: You know, it's the --

DR. COLLIER: To that, Roger wrote up there to collect data and research necessary to move EFH classifications from Level 1 (presence-absence) to higher tiers.

MS. COOKSEY: Yes, and that definitely is getting there, and, you know, again, I think all of these ideas are super important, but kind of having a little bit of a laser focus on the council needs, and that would be a big one.

MS. DEATON: If I could add, what I was going to mention was that like, in North Carolina, over 90 percent of estuarine-dependent species, fisheries species, use wetlands, and so I didn't want to like -- You know, we've got corals and SAV specifically mentioned, but, if you want -- I mean, wetlands are critical, and there is the SASMI plan that just came out, the South Atlantic Saltmarsh Initiative, and so that covers the whole Southeast. We could look at that and maybe have a recommendation about implementing actions to support sustaining saltmarsh in the Southeast, because the predictions are not good.

MS. COOKSEY: Right, and, to make people aware, not only do we have the large climate change and sea level rise and environmental concerns, but we are continuing to see increasing population pressures on the wetlands within our systems, which are these nursery habitats, and those things include new and robust efforts to dredge small tidal creeks, as part of property values and access for boats, and so that is happening throughout the Southeast, that I don't think would have been imaginable a decade or two ago, and so what -- You know, a very simple question is what does it mean to dredge small-scale creeks and those impacts on them as nursery habitats, to alter the hydrodynamics? Anne.

MS. DEATON: A lot of this information is out there already, but they're state-specific research projects, but, you know, in general, maybe what's needed is a compilation of that information, and we know that dredging reduces the suitability for juvenile fish.

MS. COOKSEY: Wilson.

DR. LANEY: Just tagging on to what Anne said, and thank you for mentioning the South Atlantic Saltmarsh Initiative, which I just got the executive summary for yesterday, and you're absolutely right, Anne, about a lot of existing information being out there. I mean, we already know, from research that was done here in South Carolina, by Holland et al., that there is a threshold in development in these small tidal tributaries, beyond which water quality, and habitat quality, start to degrade, and, I mean, that's been pretty well known for a long time, and it seems to be a pretty consistent principle, even in freshwater stream systems, you know, headwater streams, small tributaries of major rivers.

You know, you get beyond what -- It seems to me that the number that comes to mind is somewhere in the neighborhood of 10 to 15 percent impervious surface within a watershed, and things start going downhill pretty rapidly thereafter, and dredging, of course, Cindy, as you mentioned, has not only habitat, direct habitat, effects, but also modifies the hydrological, you know, dimension, and the salinity dimension, in a lot of these smaller stream systems as well, and so the bottom line is there's a tremendous amount of habitat work that is needed.

I agree with you 100 percent that the ideal would be to get to those Level 3 or 4 designations, where we understand and know the relationship between habitat and habitat quality and the life stages and resultant production. That can only happen with long-term studies, and they cost a lot of money and require a whole lot of graduate students to get those done. I think we've got a pretty good list that we're working on up there, and a question to you and Chip, I suppose, is how much

more time -- Do we have any more time, or are we just going to be able to articulate the things that come to our mind on short notice here for this particular document? I know you said you've got a briefing book deadline for, what, next week, and so I guess, if we think of any additional ideas, we can send them to you and Roger and Cindy, and maybe they could get incorporated.

DR. COLLIER: Yes. In the short-term, if you guys have pressing issues that you want to get in there, we can definitely get it in there for this briefing book. We do update this every two years, and so, if it gets missed on this one, two years later, we can potentially get it incorporated, and so don't think that this is going to be the only time that the Habitat Committee gets to look at it. We do update it every two years, even though it lists it as a five-year plan, and the five-year plan is mandated by Magnuson, and then we have to have reviews of it in a shorter timeframe, and so this is what we're doing.

I mean, I know these are huge pie-in-the-sky ideas, and so a lot of them probably won't be addressed, and so two years isn't probably a big deal to wait on something that's not popping into your brain right now as a crucial issue to come up. I mean, I think we would need them by Wednesday of next week, in order to get it incorporated.

MR. PUGLIESE: I guess that's the thing that I would say, is so let's compile all of this and then be able to step back and think about it, because I think there's some other ones that I think are, again, tying directly to some of the Magnuson mandates, and we might be able to weave some more of those directly in here, and I think we've got some key ones, but I think there's going to be others, and then, also, think of some of the other -- Ones that will feed into here that may be appropriate, and so, if everybody -- We'll compile this, and then we'll distribute it back out to the AP, and that will also afford some of the members that are not here the ability to do it, with a deadline to get it in here by Wednesday, so that we can make this briefing book.

Then, like you said, we can always highlight some, if some come in later, and then you do have the longer-term future -- This is just a big jump from where we were before, because everything was, you know, totally focused on what was happening almost immediately, and so habitat ended up just getting the big-picture things, period, and so this is big jump from where we are, and so, if that seems reasonable, that's --

MS. COOKSEY: It does, but I wanted to recognize Casey.

MS. KNIGHT: Just kind of expanding on that, that these are kind of pie-in-the-sky things, I wanted to revisit the third bullet point, the impacts to poor water quality on recruitment of estuarine-dependent species, and I think we could also, you know, include some of the direct impacts to the habitats themselves there that are still not really well-defined in the literature, and then, also, the connection between the poor water quality and the impacts to the wetlands, the loss of wetlands as well.

MS. COOKSEY: Wilson and then Anne.

DR. LANEY: Thanks for that one, Casey, and I was going to say this one is a shade different, but we also need to understand, and, again, this comes from my gray triggerfish experience and from past conversations with Laurent Cherubin about spiny lobster recruitment, and we need to

understand from what habitats the recruitment is coming from to our South Atlantic habitats, because it's not straightforward, in some cases.

Based on the genetic work that's been done, you know, you would have thought that most spiny lobster recruitment comes from the Keys, and, well, it doesn't, as it turns out, based on what Laurent told me anyway, and it probably comes from somewhere else in the Gulf of Mexico, and, with respect to gray triggerfish, the most current genetic work that I read, during the data workshop exercise, suggests that the recruitment of gray triggerfish to the South Atlantic is not necessarily coming from the reproductive efforts of South Atlantic gray triggerfish, and it's maybe coming from someplace else.

As those juveniles that are in the sargassum, you know, drop out, they came from maybe someplace further south, and so that's another need, is to understand the habitat and ichthyoplankton dynamics, and we sort of captured that where we said expand the characterization of juvenile reef fish use of habitat, and we talked about needing ichthyoplankton surveys, but we need to understand more than just where they are at the time the survey is done, and we need to understand their movement dynamics, and that is even more difficult, and that requires the genetic, adding the genetic component to it, I think, because that's the best way to track them.

North Carolina has gone to -- I think maybe South Carolina is doing some of it too, but parent-based tagging of a lot of the fish that they stock, and that requires genetics, and I know Tonya Darden is here in South Carolina, and does a lot of that kind of work too, but it's tricky stuff, and it, again, requires long-term -- The use of the genetics tool, along with the standard sampling techniques.

DR. COLLIER: Yes, and that's -- I think that one is covered under collect data and research necessary to move EFH to higher classifications, and that's a Tier 4 classification, and, you know, that is the long-term goal, is to understand where your productivity is coming from and how the juveniles are getting to the adult stage, and, yes, that's going to be a lot of work here in the South Atlantic, because there is -- It seems like there is some connectivity with several species across the Atlantic Ocean, and look at gray triggerfish, wreckfish, and spiny lobster, and there is some interesting dynamics that go on with these species that we manage.

MS. COOKSEY: Okay, and I think I had -- Did I have Anne? Anne and then Sam and then Kevin.

MS. DEATON: Okay. I was just going to mention that one thing that's lacking is taking into account habitat condition in stock assessments, right, and that's an effort, and so maybe something to that effect is to determine methodology to incorporate habitat conditions into stock assessments, and I don't know if that fits with habitat, or to produce habitat suitability models for the various species undergoing stock assessments. I haven't done it, but I know there's methods to do it.

MS. COOKSEY: Sam.

MR. YOUNG: Are we recognizing, at any point in here, lost habitat, because we're losing it every day, and I don't see -- To me, that should be a priority, to document what we are losing, and most of it's related to the inshore estuaries and whatnot, and it all relates to development and nitrogen phosphorus, and that essential fish habitat is -- We're losing it on a daily basis.

MS. COOKSEY: There are efforts, the National Wetlands Inventory, that does do that, to try to track changes in loss of wetlands, and so there is some of that information available, that I'm aware of.

MR. YOUNG: I don't think it's getting enough of a priority, because people don't know what we had, and what we've lost, and the pace we're continuing to lose it.

MR. PUGLIESE: There was a specific program that was -- I think it actually has that over at NOS, that showed distributions of like marsh over time, and the loss, and I can't remember the name of that, but it exists.

MS. COOKSEY: I can't remember the name of that, but there is the new saltmarsh -- The South Atlantic Saltmarsh Initiative that is going on right now that is also focused on that, that has many people that are working on it. I see lots of hands, and I wish that I could get to everybody. I want to get to Kevin, and we have a limited amount of time, and we have some other presentations that we need to get through on this topic, and so I'm going to let Kevin speak, and then what I'm going to ask is that Roger can share with the AP, via email, the list that has been created now, so that all of the panel members can provide additional comment, or input, or thoughts, on prioritization of the list, by Wednesday of next week. Okay? Kevin.

MR. SPANIK: I will try to be quick, but it's a bit of a two-part question. I am just wondering if we can get, from Chip, sort of an overall sense of like -- A lot of this is big, pie-in-the-sky stuff, but how much of these recommendations actually get to a point where you can get an RFP out and we can actually sort of get things done kind of thing?

DR. COLLIER: It changes, over time, on how much we can get put into different RFPs, and so, you know, it's not always clear, but we're definitely going to start pushing to get some of these pieces included into the RFPs, for things like MARFIN and the CRPs and different ideas, and so we're going to try to get it there, and we'll see where it goes, and, if we have extra funding, and stuff like that, that can help us direct where our funds go as well, and so it's not just NMFS doing it, but it's thinking of it as a collective effort, trying to get more information out there and gathered.

MR. SPANIK: To that, I wonder if there's anything that we can do a little better, as an AP, to like really prioritize, to make it clear, instead of these giant bullet lists. Like we have all these things, but we really want these couple of things, and that might make it a little easier to expedite that, because, even once these get to RFP, it's a year, almost, to put it in the proposal and get the money and start the work, and so I'm just thinking of any way that we can expedite that might be a good thing to do.

DR. COLLIER: Yes, prioritization is good. You know, all these things cost money, and we don't have unlimited funds, and so that's what we were doing in the past, is trying to prioritize, and we felt like we were just missing out on quite a bit, because we had such a fine-tuned list, and, as was pointed out, you know, one of the big things that we wanted done was deep-sea mapping of the deepwater coral, and, you know, we've had a lot of effort over here in the past few years, and I think we had a presentation come to the SSC the other day on, you know, new maps for potential habitat distribution of some of the deepwater coral, or mesophotic coral, species, as well as some of the deepwater coral species, and so we are getting new information, based on some of the

requests that were put in this, and we can potentially change some of the ideas from presence-absence to a little bit more informed decisions.

MS. COOKSEY: Okay. Thank you, all, for this discussion, and, again, we should keep our eyes out for a copy of that list and then be able to provide comments back by Wednesday of next week. We're going to move into Roger's council tools discussion next, and are you ready for that, Roger?

MR. PUGLIESE: One of the things, as part of the process we're going through with the habitat blueprint, was to look at some of the tools and capabilities the council has, and also look at other regional components, and that's why we have some additional presentations today too, but what I wanted to do is at least touch on a couple of the core areas that we have, and just show some of the -- I sent this out, and what would be good is if any members can highlight the values or issues, if there's pros or cons of utilizing -- Of getting this back online and having accessibility.

There is some linkage between these directly and some of the developing regional tools and implications of why to maintain, and have connections, so that you can have more updated things, but I just wanted to talk through a couple of these, and, really, what I was going to do was access it, and this maybe something that -- I will follow-up. I will send this out, but I may follow-up with some more, just to be able to get some additional insight, maybe a little more guidance on connections, but I wanted to at least step through here.

What I was going to do was actually access it through some of the systems that we used to have online, and they're still online, but we just haven't integrated it into the website, but I had forwarded you all the matrix, with three different things that were some of the services that are online right now, web applications, and what I wanted to do is just walk through these real quickly, and then we'll go back to the matrix.

For example, the essential fish habitat, the council is mandated to not only identify and describe and protect essential fish habitat from fishing and non-fishing activities, but it's to provide spatial distribution information on essential fish habitat and areas of particular concern, where they're available, and what we've done in the past is we've had web services developed, through collaboration with FWRI, because of them being able to maintain the servers, do the updates on software, and a lot of other, you know, background things that were going on, and we were basically riding the coattails of a lot of technology, because they are some of the premier GIS experts in the entire country, I think, and we've been working with them for a long time.

What we ended up doing is creating web services, and this is being -- The web service for essential fish habitat, and so you're getting all the distributions of both EFH -- Let me just do them back-to-back, like shrimp EFH and then the HAPCs that have been designated, and so you can see these different components.

Then snapper grouper EFH and EFH HAPC, but you also get the details. When you look into the areas, it shows what composes all those things, and the way these different web services work is they provide the opportunity to look at some of the different layers, such as say the coral EFH and HAPCs, and you can actually bring in additional information, and you either can change different backgrounds for the area, if you want something other than -- This is like an oceans map, and it has access directly to a lot of online capabilities. You can search it, or there's some baselines that

you show, but then you also have the ability to bring in, and I have pulled some of these over here, just so that you could look at it, and some of the areas that are included under services.

Let me show you actually where some of these exist right now, because, when you go into here, we have a GIS layer that has map services, and so what it does show is three different tiers, the core services that I highlighted, managed area for fisheries, but then it includes other ones, complementary services, and so you can have access to other information on habitats, on the background nautical charts that you can integrate, or even multibeam, and so, for example, if you look at the multibeam, you can actually go up and copy the link, and let's go back to the web service itself.

If you're in say the essential fish habitat, or we'll go into here again, and you can actually integrate, as I said, other layers. The URL, I just pulled from that service, and we can paste it and add it in, and what you're going to get is the multibeam mapping connected to the essential fish habitat, so you can actually look at those, and the way that web service system is that every single layer has an access point, and so you could pull in individual managed areas or the entire managed area and look at that.

If we go into say the managed area section, you can do the same, where we're looking at the deepwater MPAs, the spawning special management zones, SMZs in general, Oculina Bank, as well as the deepwater coral HAPCs, and, again, you can do the same, where you can add in these different layers, and, if somebody provides other layers, you can do this, and so this can -- You can work through this by even getting -- Say, when we were looking at all those individual Kitty Hawk and other layers that BOEM has, and you can put these all here.

Basically, this is one capability, where you can look at essentially all three of those web services, and then even other background layers, such as the nautical charts and the multibeam mapping, and all of those are all being served through FWRI right now for us, in the background, and so you can pull all these different components in, and, as I said before, you also have, you know, things beyond here, and so those are the actual web mapping applications.

Under the dashboard, you can actually just pull out these, if you want to work on your machine, and so it's got essential fish habitat, and you can download the layers, the shapefiles, and it provides the metadata links, the managed areas, and even some of the gear restrictions, such as the trawl prohibition, the sargassum regulations, sea bass areas, and so they may not be considered under the managed areas, but they are regulatory components that we've done, gear-based regulations, and so that provides that access, if you want to do it separately from here.

We even, in this digital dashboard, have connections to such things as the AIS system, and so you could even look at your individual area. If you could pull this out, you could actually look at some of the different capabilities under that, and I will note that all these different ones that I am showing you have not advanced, because we're really in a maintenance mode, because they were trying to get a determination of what is going to stay, and then how we're going to present that online and all that, and so those are going to be -- You know, if we do integrate these again, they can be expanded and refined even further, and that's kind of my point on this, is that, you know, these are the foundational ones, but I think they can go even beyond this point.

Getting back to the home -- Let me show the third one that was identified, that was the SA Fisheries, and this was an effort to present information on the -- Again, I will show this capability as you go through here, because, I mean, that's, I think, one of the most -- It's one of the different things than many of the other systems you see, is that ability to really work with a lot of different things, and so what we have here is the actual surveys.

If you look at the layer list, it shows at least components of it, and, again, it's limited to 2019 for some surveys and 2021 for others, but it's the -- It's all the surveys that Kevin was just walking through, like the longline survey, and so, if you want to look at, you know, various abundance areas, or the distributions of those, you can click on it, and it actually provides you -- You can zoom right into those areas, and it provides you the detailed information on what was caught within these areas.

One of the things that was being developed in the background, beyond this, was potentially species distribution maps, and that's something that still is in discussion, again, if we advance this further, and so you would have virtually all the different surveys presented in here, and with the quantities and capabilities, and, again, you can walk back and forth between the different mapping applications and use any of the information and overlay those, as well as go through other services outside of our area, because that really makes it even more powerful, when you can go to some of the other capabilities, and that's why we have been building like the multibeam information and connections to other online systems that have say the nautical charts, but then you even get into estuarine bathymetries that are served elsewhere that we can just pull in and access those, and this hasn't gone further than back when this was first developed and it was only the planning area, and so, you know, we can do this.

I think that, also, one of the big issues is that opportunity to, if you have the baseline distributions of our information in here, those are actually -- Since they're presented as web services, they can be consumed, and we'll see that shortly, because, specifically, a number of those have been consumed by say the Marine Mapper on here, and those discussions are how do you maintain something that has the most recent information, because a lot of these pull the data, present it, process it, and that's the challenge, is how do you do it so that you can have it pulling from kind of a live system that gets the most recent -- You may have to deal with updating, and that's all the online tech guys that are going to have to figure out how you make it, or the modelers, how do you make that, and Mary, I think, will get into some of that, when she touches on those.

What I wanted to do is, you know, mainly to show you this, and at least the capabilities of it, and it provides you linkages beyond the system, because you do have, you know, those three core areas, but then, as you get into some of these systems, we do have, you know, mapping information and other layers that are accessible, and that can be modified, tailored, and advanced under this system, and this is where you can highlight a lot of the other connectivity to the fish habitat partnerships and other partners in our region, like SARP and the state systems.

We do have that built, and that's under this digital dashboard, and, now, that's going to evolve further, into -- This was the last thing that was online, the ArcGIS hub, which did provide the same background layers, the same things, but it did also provide access to some other type of capabilities, which these ultimately would get folded in here.

For example, the ACCSP statistical areas, and so, if you wanted to see catch information connected into here, you could actually go in and pull up, you know, the individual areas, and it provides you catch. For example, here is the catch overall, and 2016 to 2019 shows you the highest catch by species, and so those are something that -- You know, I think it's one of the only areas that has that type of ACCSP information also available, and so fishery-dependent information that's accessible, but this is something that was designed and developed and was online before, and it provided some capabilities to get into our -- You know, it's showing you some of the core areas that are already existing.

Given that, really, I wanted to kind of open the dialogue of at least these core areas, what some of the thoughts are of say, for example, our presentations of essential fish habitat and habitat areas of particular concern online, having a service like that that is specific, that can kind of look at everything at one time, because I think that's one of the limitations.

There had been discussion, earlier on, about looking at NMFS -- There was an EFH mapper that they created, but, for the South Atlantic region, it's not tied to our system, and so a lot of the layers don't exist, and they don't query, and they're some real significant issues about trying to just defer to the national system, and I think, in our case, we've been pointing them to these systems, because this is, you know, the council's presentation of this information, and we've been sharing that with our partners too in development of other systems.

I just wanted to kind of open it up, and so we've got those services and other capabilities and links, and then have a dialogue on what thoughts and guidance you can give to the council on where we go in maintaining and expanding or using some of these different systems.

MS. COOKSEY: Paula.

MS. KEENER: Roger, thank you, and it's a fantastic resource, and it's a ton of data, and, in looking forward, and I know this -- Again, it's money, and it's time, but it would be wonderful to see ichthyoplankton catch information incorporated into this database, and, when I think about that, it makes me think that, you know, when we talk about EFH and habitat areas of particular concern, for the most part, we're talking about bottom structure, and we're excluding, or not really thinking about, the system-wide connection of habitat or ichthyoplankton, and their habitat is at the surface, and to draw those connections between where they're found in the plankton, and then where they're caught as adults, I think is an important --

MR. PUGLIESE: Yes, and it gets to that comment about understanding the connections to all these systems, and, technically, if you look to the user guide, we do talk about the water column and both estuarine and offshore, and so the water column, in consultation, is used, especially in the HAPCs, and you look at the entire system. However, that said, the information that helps support it, like the ichthyoplankton surveys, we don't have ichthyoplankton surveys, and the best we have is like the test beds they did, other than the historic.

Now, it would be good, probably, to at least bring in the historic in here, and it actually -- When Kevin gets into it, there is another vehicle that is a coordination between SEAMAP and SECOORA that do have some capability that, all of a sudden, you're able to look at the oceanographic information, relative to some of the information, but the problem is we just don't have the ichthyoplankton survey ongoing since the historic ones that were done back in the past, but that's,

you know, a possibility, of adding at least that, and then encouraging advancement of newer information to do that.

MS. COOKSEY: Wilson.

DR. LANEY: Well, I totally agree with Paula. Roger, you mentioned the fact that some of these data are still being housed at FWRI, and what is that current arrangement, and is there a need to continue that relationship, and I certainly would support, you know, getting as much of the digital dashboard back online as possible, because the council has always been a tremendous resource for stakeholders to access the information, and, you know, I've said it on the record before, and I will say it again, and, you know, I hear it when we're at the public hearings sometimes, when I was still on the council, and we would hear people come in and complain about not knowing what the council was done, and nothing is transparent, and so forth and so on, and I said, every time, when was the last time that you visited the council website, because all the information is there, and you just have to know where to go to find it, and there are plenty of council staff that will help you navigate the website and determine where the information you're looking for is located.

MR. PUGLIESE: To your one point about FWRI, that's the foundation for all -- You know, our coordination with them is they're running these off of their servers, and they have developed -- Tina Udouj has been the primary contact, and they have developed virtually all the layers that go into here, other than the ones that we've gotten from, you know, coordination with other groups, and so, in order for this to run in this system, that's the commitment we have.

Right now, the only thing we have is like a maintenance, where there has not been any additional updates, because they want to determine if, you know -- That's what some of the discussion that we need to have here, is do you see value in the council being able to have this kind of capability, given some of the flexibility and different capabilities here to, you know, maintain other pros, and I think Wilson has highlighted how this was actually -- The different tools came at the end of the overall digital dashboard, and all the discussion we had about access to other state information, and that's where it existed too, having connections not only to the spatial information we had, the tools that provide that, and some of the different formats we've discussed, but, also, you know, the connection back to the most updated information from the state, in terms of the discussions of what those different habitats are, but then, also, if there are other spatial layers that are beyond here, because we do have that component on state-managed areas that are part of our EFH designations, and so those are there, but you all need to talk, and I have talked enough.

MS. COOKSEY: I just wanted to jump in, and I see having all of that data available online, to the public, as a tremendous resource, and it's something that I would like to be able to send applicants to, as well as other federal action agencies, and state agencies, to, when I am in discussions with them as part of my EFH consultation process. I mean, this is something that, you know, when I meet with people, or provide training to consultants and applicants, this is -- It's, well, where do I find out where EFH is, and how do I know what is EFH, and I'm sending them to the council website, and they are looking for those resources in a big way, and so I am obviously a huge supporter of this.

An example that we have that is in development right now, as part of our EFH five-year review, is we are looking at refining and clarifying in the user's guide, and finding all those tidal headwaters and being able to provide that to people throughout the Southeastern region, where

they are seeking to, you know, put in docks and develop communities and all of that, and they need that information from the council, in order to move forward with that, and so a big, big supporter right here. Anne.

MS. DEATON: I agree, and I've used them, and I think the important thing is to keep them updated, and so, if something changes -- You know, I know that's a maintenance issue, but, if it's not updated and accurate, then it can actually be detrimental, and so I agree that's been -- It's a good way, especially people that are less familiar with it, to get them the whole picture of these are the habitats, and these are, you know, the fish, and these are the special areas, and so together I think it's a great thing.

MS. COOKSEY: Wilson.

DR. LANEY: We talked about, you know, moving toward ecosystem-based management, and our ultimate goal of being able to go to Level 3 and 4 and being able to incorporate the habitat and environmental information into the stock assessments. If the stock assessment scientists aren't going to be able to access this information, they aren't going to be able to make that transition, and so I think that's another huge justification, to me, for being able to maintain this capability.

MS. COOKSEY: Thank you, everyone, and so hopefully, you know, that message will come across when we do our report-out, that there seemed to be support for keeping these tools and expanding and updating them. We have limited time left, and so I want to make sure that we get to our last two discussion points of the day, and we're going to have Kevin come back up and update us on the SEAMAP and SECOORA data portal.

MR. SPANIK: Hello again. Let me give a quick recognition to the true masters of this domain, Dr. Tracey Smart and Michelle Willis. They weren't able to be here today, for some prior obligations, and so I got this one by default, too. There are a ton of data under the SEAMAP umbrella, and we're adding more every day, and so it's really imperative to stay on top of data management for the SEAMAP South Atlantic data.

The online databases we have include all these surveys here that I spoke about earlier, and some of the target data products that people mostly request are things like abundance and biomass by species, and you can see right here, for Spanish mackerel, in the right panel, that people are really interested in multispecies downloads, looking at things like fish assemblages and diversity, length frequency and life history information, and also, of course, we mentioned, you know, keeping an eye on oceanographic conditions.

We recently imported CTD data for the coastal trawl survey and the reef fish survey, and so that's something that is now available in the current system. In the new system, we're also hoping to add some other information, like tagging data, information on sea turtles, and information on trophic interactions and diet, and so the current system that we have now, that's active, is an online database on seamap.org. This is developed and maintained by SC DNR IT, and most of this -- You probably will realize that a lot of these surveys are operated mostly under SC DNR, and so the onus for developing and maintaining these databases kind of fell back on DNR as well.

This current version includes, again, all of those SEAMAP South Atlantic surveys, and there's just one kind of shared structure, with an administrator interface for data and code and table importation

and deletion, and so adding data is it comes in, adjusting stuff as we QA/QC, and things like that, and this product right now is kind of defined really just by user-driven queries by survey and the data type, and there's metadata along with all these, and so that will give you information on the types of gear and all that kind of stuff used for this, and so there also is a user tracking system.

To be able to access these data, you need to register as a new user, and that will include your name, your email, your business affiliation, and it asks you to agree to the intellectual property statement, just kind of showing where the data come from, and acknowledge your responsibilities as a user of the data, and that kind of entails that you understand the design, the metadata, and the design limitations of each survey, and so you're hopefully interpreting the data correctly and not misinterpreting anything.

Iteration 2, which is under development, is being developed by Axiom Data Systems, and they are contracted out by SECOORA, and that's hosted within the SECOORA database, and so, again, this will include all funded surveys, and it has a lot of the same user interface and user-driven queries. However, instead of just being able to kind of download tables and things like that, you can actually draw up summaries, and there is kind of nice map interfaces, and, like Roger mentioned, you will be able to look at things like species distribution, multispecies up around the coast historically, to see how those things may be changing year-by-year, and you can integrate the oceanographic conditions with that as well. The metadata comes zipped and included with the data download, and so you will get all of that together.

Just to kind of put on why we're interested in migrating over to the SECOORA system, like I mentioned, we really -- It gives you a lot more capabilities for summarizing and visualizing data, and you can bring in mapping information, raw information, and, like I mentioned, the current iteration is data downloads only, and, with being able to draw in these summaries, you can look -- You can pay more attention to cross-comparisons of different datasets, pull them all in and look at them all together.

There are a lot of data processing responsibilities, and those are handled by each collaborating partner. Each survey kind of maintains and provides their own data annually, and it gets input in by the developers. SC DNR does check and format the data, to make sure it's compatible with the online system, and DNR uploads and imports the data into the online system, and it deletes and replaces, as needed, for any corrections that are identified.

Again, each survey provides updates to any metadata, changes in the survey methodology, or anything like that will all be recognized, and so online data, sharing data, definitely comes with challenges. For one, ownership and branding can be difficult. When you have a publicly-available system, data system, it means you can kind of lose ownership and oversight of your data, and so the metadata is there, and you have to agree that you understand it, but you can't force people to really read that, and so there may be issues with interpreting findings. We've all updated our iPhones, and you see the agree and accept, and you scroll down and hit it, and so hopefully that's not occurring too much, but there's definitely the possibility for that.

It's also difficult to say who is responsible for updates, and so we have a lot of collaborating partners, and so it can be -- You can think that, philosophically, that it could be on us to have to reach back out to everybody that has downloaded data in the past, and say these things have

changed, but we're hoping that people that use it will continue to kind of check back in and make sure that there hasn't been anything that may lead them to misinterpret the data.

Finally, another big challenge is that programmers are in very high demand, and there's a lot of turnover in that field, and these are very complex datasets, and so it's difficult to keep somebody that's really familiar with all the ins and outs of it, as you move into this type of high-demanding programming skill that you need to have, which a lot of survey staff don't necessarily have, and I think that's pretty much it for this one.

MS. COOKSEY: Thank you, Kevin. I wanted to open it up for discussion or questions. Wilson.

DR. LANEY: Kevin, remind me, but I think, the last time I used it, there is like a training module on the site that, if you haven't used it, if you're not familiar with it before, you go through that first, and it helps a lot to be able to use it and pull the information that you need from it.

MR. SPANIK: Yes, that's correct, and you just have to go to seamap.org, and, if you haven't used it yet, like I mentioned, you create an account, put in all of your information and how you'll be using the data, but it's difficult, and we really want to make sure that it's not misinterpreted. The data that we have is kind of currency for, you know, going after new grant funding, and so we just want to make sure that it's being used and interpreted correctly.

MS. COOKSEY: Roger.

MR. PUGLIESE: Some of the spatial aspects, those are still in development, and I think may have gotten some additional resources from the last round on the SECOORA, and is there a latest timeline of maybe when some of those may be online, and that's some of the balance that we're having about having, you know, different ones that we have online, and the connection, especially right now, and we have SA Fisheries, and this is being presented, but there's different directions that some of those can go, in terms of distribution here versus there, plus timing of it actually being fully functional, and the way it way it works too, because there are some differences on what you can, you know, view and then add to and all that type of thing.

MR. SPANIK: I don't know for sure the timeline on that, and I can ask Tracey and Michelle. I do know, if there's anything good to be said from COVID, it did help us a lot to kind of sit down and catch up on some of that, and to be able to digitize some of our historic data, and Tracey got in touch with me, after some discussions yesterday, and a lot of that ichthyoplankton data were digitized during that time as well, and so hopefully -- That may be something that we can also throw in there, on a shorter timescale, now that we had that time to catch up on some of that.

MS. COOKSEY: Okay. Great. Thank you. I am now going to invite Mary Conley up to talk about TNC and SECOORA's Southeast Marine Mapping Tool.

MS. CONLEY: What I am going to share is what is Phase 1 of our Southeast Marine Mapping Tool that The Nature Conservancy has been working with, with funding from the Southeast Coastal Ocean Observing Regional Association, and in partnership with many of the things that you all have actually been talking about over the last three days of this meeting, and so we've been engaging the Bureau of Offshore Energy Management with some of the wind energy components, and we have worked closely with Kevin and Tracey on bringing in some of the fisheries data, in a

way that can be used and translated and thought about in association with other data sources, and so this is going to be a quick 101, and I am happy to come back and share future opportunities and also to have you engage in the process.

The thinking behind the Southeast Marine Mapping Tool is that there is a lot of new and expanding activity that is happening across the South Atlantic, and this is just a map of offshore wind coming into the region, and the question being how do we make sure that key habitats and species are taken into consideration when making those decisions and bringing in some of the best available science and data, which sometimes can be hard to access, or can be only accessible by looking in a bunch of different places, or not understanding the relative technique.

Here in the Southeast, in addition to the wind map that I showed before, some of the things that come to mind are, you know, sediment management and understanding of some of our area-based marine management, and so that can be things like some of the habitat areas of particular concern or the link to the fisheries management council activities.

Getting access to some of this data specific to the Southeast is a little bit different than if you look at other places along our Atlantic coastline. In the Northeast, you have the Northeast Regional Ocean Council, which has a Northeast Ocean Data Portal, and the Mid-Atlantic has the Mid-Atlantic Regional Council, and they have a portal as well. In the Southeast, we have the Governors' South Atlantic Alliance that kind of fell apart, and SECOORA, which you've now heard on the last two presentations, has really stepped in to try to be at least a place to connect folks around sharing and accessing data, and not only observing data, which is a lot of what their history is, but how do you access other habitat, ecological, water column information, through their data sources.

That included helping to fund this particular project, which was started about two years ago, and, here, we are not trying to create new data, and we are trying to leverage the existing marine life habitat end use data available, and providing both access to it collectively, and so connecting you to where it comes from, bringing a bit more context to the numbers, and so what does the -- How does this place fit, relative to other places, within a region, and is it seeing more of a given species, or does it have a greater amount of habitat, different habitat types, and then we're hoping to connect it in a way that decision makers, or interested parties, can actually cull the data and dig deeper, if they need to.

These are going to be a couple of visuals that I'm going to take you through, but this is kind of how it works. You can come in, and you can either select a given site, or you can draw an area out in the ocean. When you do that, it then brings up what are called key features, or this is a set of kind of what are some tags that you would want to think about under the category of seafloor, and so this is seafloor and water column characteristics, and the second set is species-based, and so there's information on fish, corals, marine mammals, and birds, making use of both model data as well as thinking about some of the siting information that is out there, and then, finally, existing uses or management, and this includes notice of kind of where the essential -- How to access the essential fish habitat data, as well as current gear restrictions that the council has in place, and so we're translating some of that information that Roger was just talking about into a place that you can look at it relative to other uses.

It's designed to unpack information, from really broad to more specific, and so it starts off with that idea of flags, what are some things that, coming in, you might want to think about, and so this would be things like presence of hardbottom habitat, or presence of deepwater coral species, or perhaps linking it with a critical habitat area of particular concern.

Based on that, you can then dig in and see what the data is like for that group, and so this takes you down -- This particular map is a map of coral species, the ecological grouping, and it shows kind of what the relative density is of hard corals to other hard areas across the region, if you were to have drawn in, and you can see here that it starts to show up as a higher level than other areas in the region, in terms of the number of deepwater coral species presence within that site.

You can then take it down to the next level, which is actually trying to look at the species themselves, to selecting what are the species that were found there, and was it modeled, and so the lines that you see there with the pink is the model data, with the darker red showing that there is a higher presence than other places in the area, and lighter red is less. If there has actually been a sighting, or it's been groundtruthed, there is that little green check-mark. You can look at this, and, when possible, we bring in seasonality to it, and so you have a sense of what season it was present, and then, finally, we take you directly to the data sources, so that you know where the information and data came from.

This is just taking you into kind of how you can visualize it, and so, here, once you get in, you can not only see graphics that give you discussion points related to it, but actually see the maps, and so, here, we're going in, and this is seafloor habitat, and we're starting to bring up where different hardbottom is, and this is the feature component, and so looking at where you have fronts in the water, and then looking at it seasonally over time, and so are you seeing water column front components, and we know there is better data, and different ways we can continue to work on it, and so this is kind of a first run with available data, and there's things that, if we know there is some next steps that we want to bring in, we can work to try to support or do research on.

The idea is that you're trying to bring some context to the numbers, and so you're seeing what the data sources were, but, also, does this location have a higher number of species than the whole region, and that's some of the calculation that's going on behind the scene, and does it aggregate species persistently over time, and so you're looking at multiple years of data, where it's viable, and are they -- Then is there any characteristic that comes in in terms of the relationship to a given use factor.

We're trying to be transparent, and so there's a link that goes in with kind of the data quality, so you know that, hey, we were missing some of the actual groundtruth data here, and so this is a data layer that we have greater or less confidence in, and those are all things that we're continuing to try to improve and work upon, and there are brief bits of information that let you know kind of that criteria, as you move to the right.

This is the bird data that is showing up here, which is modeled bird information, and that then includes any sightings that were present, and, again, this is kind of showing you how, on the website, you can actually go through and get to the metadata and the sourcing information, and this is new, and so this was just released back in January, and we have a steering committee right now, which Roger sits on, that is working on both refinement of the tool as well as how it can be enhanced from an information like use standpoint, and then we're keeping track of what may be

additional data sources, or ways that we can communicate data, which we may not be able to do with the funding this time, but are continuing to enhance.

There's a similar tool that's been created for the Northeast, and this kind of shows that it's hitting, that more people -- You know, people are starting to play with it, when something comes out that is like, hey, what do you think of this wind energy area, and people will go in and use this as their source, and this is where you can find it. Right now, it's for federal waters, and so it's three miles out, and I know a lot of the conversations that you all have been having here involve also that link with our estuarine habitats. Ideally, we would love to bring that in. As Anne talked about earlier, some of the challenges there is how you bring the data, in from a regional standpoint, when all the data sources are so individual, and so that's kind of my brief presentation.

MS. COOKSEY: Well, thank you. Casey.

MS. KNIGHT: Just a quick question. I know I got some recent data requests from Coastal Ocean Science for some GIS layers for their coastal reports, and does this have anything to do with that? It seems kind of like parallel, or duplicate, effort, in some ways.

MS. CONLEY: They are part of our team. The difference between the ocean reports and the coastal reports and this is that's kind of a static what's going on across-the-board, to give you the numbers, and we're doing some behind-the-scenes analysis here, to give you an idea of relative values and system pieces, and so there is -- There are linkages, but they're not one and the same, and we are working together, and so we have some of the members from that group on our team, to try to communicate that.

MS. KNIGHT: So if I share the GIS layers with them, it will get to you too?

MS. CONLEY: It could get to me too. If you want to shoot me note, or send me a thing, we can connect, to make sure we get that right.

MS. KNIGHT: Good deal.

MS. COOKSEY: David.

MR. WEBB: Thank you. Do you believe that the -- At least early on in this, the use of this tool, that the primary users will be other NGOs, or do you imagine are going to be most drawn to this?

MS. CONLEY: So our primary thinking -- Our steering committee is comprised of representatives from the coastal zone management programs of each of the different states, some other federal agencies that have been involved from both a technical standpoint, to make sure that the data is interpreted properly, as well as from a use standpoint, and so I think we see it as being a combination of some of those, you know, coastal zone management folks, or people who are responding to a potential sighting, and then, secondarily, other environmental groups, or folks who work on comment letters, and then the third tier is that it's just an interesting data source that can be used by the general public.

MS. COOKSEY: Okay, Mary. Well, thank you again for that, and that was very informative. We appreciate it. Wilson.

DR. LANEY: I have one more, and Sam had asked a question earlier, you know, about wetlands tracking, and somebody did mention the national wetland inventory, and they did, Sam, issue regular reports, I think at probably about five-year intervals, and I know one of my retired colleagues, John Hefner, was very much involved in that program, and so that was a Fish-and-Wildlife-Service-administered program. It had some shortcomings, and they did -- You know, mapping has improved greatly with the advent of tools like LiDaR, which didn't exist when NWI was created, and they were using the National High Altitude Photography imagery to -- You know, which was very labor intensive, and it required a lot of delineation, and not that LiDaR doesn't, and you still have to do, you know, the interpretation of it, but LiDaR is a much better tool than what existed at the time.

My question, and, Mary, I know you said you were going to, hopefully, at some point, integrate the inshore data, the nearshore data, and do you have any idea what the timeframe might be on that, and how -- Relatively, how good is NWI as a tool, or as a data layer, and is that what you would start with, would be the NWI products for the wetlands data layer, or is something better coming along pretty fast? I don't know.

MS. CONLEY: So two components with that. One is how soon, and that would be to be determined, and there would be a funding component and a link in, and also a desire, and so that would be something that we would really want to do in partnership, and like is this something that we really feel like this is a useful -- This is a gap, and, by bringing in this idea of layering information, to help decisions, is value-added, and, if that's the case, we can go out and try to find funding and ways to support it, and so I don't have a timeline on that.

I will say that, from a standpoint of wetland data and information, we did work to complete the South Atlantic Bight Marine Assessment, which came out back in 2018, which is like five years old now, but part of what we did there, for our wetland data, is we started with NWI information, acknowledge that there were, A, some significant age gaps back then in some of the National Wetland Inventory data, and we tried to make use of either more localized state datasets and/or analysis that could be completed with some of the land use data sources, to try to bring in and fill out the wetland data, to create a more up-to-date, consistent data that at least brought the age up.

There have been additional wetlands analyses since then in some states, and some states want to fund it, and so like Georgia completed a new updated National Wetland Inventory that took it down to a more specific, more localized data, I think back in 2017 to 2019, and so that was my wetland 101, and it looks like Anne may have some more --

MS. DEATON: I was just going to add that we have been having conversations with CCAP, and are working to get one-meter resolution, and they have already got it, and so we're just looking to get some funds to help with the full classification, which would include the wetlands, and so it doesn't go to as many classifications as NWI, but the advantage is they can do a larger area, and so you have the same date, because NWI is a patchwork of dates, and so, for trend assessment, we think it's probably the best way to go, and then you also get your land use categories with that, and so, anyway, I'm just sharing that.

MS. COOKSEY: Okay. I don't see any more hands, and so we are at the end of all of our planned business. This is an opportunity to bring up any other business, and I had just kind of one general

item that, number one, I want to acknowledge my gratitude for the fact that all of the AP members are willing to volunteer their time, and there has been a tremendous commitment, over the course of this session, to volunteer for subcommittees, to lead as well as to participate in subcommittees, and, you know, that is how we are able to move forward the business that we are trying to accomplish here, and help support the council in their job as well, and I know that all of you are incredibly busy people, with jobs and other responsibilities, and so, again, a tremendous amount of appreciation for the fact that so many of you have been willing to step up and take on extra responsibility outside of these meetings, and so thank you for that.

As a continuation of that, we, you know, have had a relatively low physical turnout this time, and we have an AP member list on which we've had a number of folks that have not been able to participate for a very long time, and so I think maybe we need to potentially ask the council to kind of revisit our member list, and one example would be we really need to have someone from the Fish and Wildlife Service that is willing to participate on this, and so that might be something to consider moving forward, just getting a reaffirmation of those that are on the panel and their continued commitment to remain on the panel and contribute, because, when we have a larger pool of people here that are able and willing to participate in the various subcommittees that move this business along, we will all be more effective.

Then kind of a continuation of that, and, prior to COVID, we met in different geographic areas, and that may have made it easier for people to attend our panels in-person, and so I wanted to get a feeling, and is that something that we would like to see happen in the future again, and is there an interest in -- Because we used to go back and forth between Charleston and Florida, and, you know, we could potentially add in North Carolina as well, and is there an interest? Casey.

MS. KNIGHT: Trish and Anne and I kind of discussed that on the ride down, and I think it would be good, because, you know, this is a pretty -- It's a relatively short trip for us, but I understand that's, you know, a much longer trip for the Florida people, and so I could see just sharing that burden a little bit more equally.

MS. COOKSEY: Roger.

MR. PUGLIESE: I think it was an in-house decision, in terms of trying to keep a lot of the meetings in Charleston. However, the justification, in the past, was what we were doing is, a lot of times, we would have access to -- We would meet at FWRI, and we would have access to the labs there, and we could walk through, and some of this type of thing would be literally hands-on, and we've done it with members that have participated, former chairs of the committees, as well as panel members, and so there was justification, and, you know, that can be discussed and advanced, and that's why we used to try to mix it up, because we would have very specific opportunities for coordination, but rotating between areas makes a lot of sense, too.

In the past, it's been a budget issue discussion, mostly, but I think coming forward and talking about that, and we have Trish here, and she hears at least a desire to do something, and that's something that, working with the SEAMAP program, having three partners, we would rotate between the different regions, and, when we would have the annual meetings, it just helped, because then you would get there, and you would also have access to maybe the expertise within that region, and you could do something, working very specifically, and so there is some, you know, valid potential to expand that, especially given all the challenges coming down.

You know, if you were meeting in North Carolina, as you were talking about, the Kitty Hawk or other areas, that might make a lot of sense, and those kind of considerations can be brought forward in some of the discussion, and Trish is here too, and so she can hear the --

MS. COOKSEY: So maybe that's something that we can push for, and I know our October meeting has already been set, but potentially for next spring, looking for either North Carolina or Florida as a place to meet, so that we can reaffirm that we want all of our panel members to attend in-person, as much as possible.

MR. WHITAKER: I remember the turnout, when it was in Florida, was much higher.

MS. COOKSEY: Yes, and I remember that as well, and so I want to encourage that. I think it's so important that, you know, we can come together and work in-person, as well as all the work that so many of you are going to be engaged in over the next few months, between now and our next meeting on our various subcommittee issues. I did want to open it up for public comment again, as when we began the meeting, and we are available for public comment at the beginning and at the end of the meeting, and so is there anyone online?

MR. PUGLIESE: We had actually a question that was forwarded to us on some discussions earlier on, and I didn't know if Joy Marino was online, and did you have a question, specifically, or a comment? No? We forwarded it, and it had to do with the discussion we had on different types of gear potentially used in the surf zone, and I think I forwarded it to both Wilson and Kevin, and so, if we have any additional follow-up, we can follow-up. Thanks, and that's it.

MS. COOKSEY: Okay. Roger has one more piece of business.

MR. PUGLIESE: One thing, and I serve on the CCC Habitat Workgroup for the Council Coordination Committee, which is all the councils from the country, and one of the things we're doing, and we did this in the past, and I know I reported it, and we did a consultation workshop, and we provided the report on consultation activities relative to EFH, and they're going to schedule another meeting of this group, and, also, it's going to be a workshop to begin to look at climate and EFH, and so that's getting --

The planning is going on starting now, and so I'm going to be involved in some of that discussion and then transition over, as the new person comes online, because it's not going to happen until January of 2024, and so I'm going to miss that, but just a heads-up that that's going to be coming down, and so there's going to be a lot of discussion across areas on how you begin the consider the issues of climate change relative to the effects of habitat, because so much focus is always on the species, and all the other aspects, and prey and everything else, but, you know, habitat drivers, and the habitats are there, you know, how they're moving, that whole discussion we had on migration of mangroves and then the changes in saltmarsh. I mean, they're all kind of in that ballpark, and so just a heads-up that that's coming down the pipe.

MS. COOKSEY: Wilson.

DR. LANEY: Anne, to tag on to that, and some of you are aware of this, I think, but we, we being a group of USGS and TNC and NC State folks, got a grant from the Climate Adaptation Science

Center, which used to be the Southeast Climate Science Center, I guess, which is located at NC State, to do climate modeling for river discharge on the Roanoke, and so looking at the operation of the two Dominion Energy hydropower dams on that system and looking at how changes in precipitation patterns and hydrology will drive ecosystem changes, or maintain the sustainability of the ecosystem, of the lower Roanoke River, but diadromous fish are a part of that, and so Julie DeMeester, with TNC, and I are the two fish heads on the group that are doing that, along with a whole bunch of modeling folks from NC State Sea Grant and from USGS, and so, if anybody is interested in that, I will be happy to provide a copy of that proposal.

We are already coordinating with stakeholders on that, with Dominion Energy in particular, but also anybody else that's interested in that sort of thing, and it's part of the -- Help me out here, Mary, but the Corps of Engineers and Nature Conservancy's river initiative, whose name escapes me at the moment.

MS. CONLEY: (Ms. Conley's comment is not audible on the recording.)

DR. LANEY: Yes, the Sustainable Rivers Partnership. Thank you, and so that is ongoing work, and I think we have to finish it by sometime next year, and so, hopefully, maybe at some point, we can present the results to the AP, because I think a similar sort of process could be applied to, you know, all the other South Atlantic rivers.

MS. COOKSEY: Paula.

MS. KEENER: A question for Roger. Roger, what is your retirement date again?

MR. PUGLIESE: December. October is going to be my last AP meeting.

MS. KEENER: October. Okay, and so we do have one more AP meeting.

MR. PUGLIESE: Yes. I'll be here. I anticipate that's going to be a big one, and hopefully it will be well attended, and I've already gotten some messages from people that haven't participated.

MS. KEENER: I just wanted to make sure we get another chance to see you. Thank you.

MS. COOKSEY: Okay. Well, thank you, all, again, AP members, and a big thank you to all of our guests who were able to join us and present to us today. I appreciated all of the discussions and all of the folks that stepped forward to take on additional work, and I am going to officially adjourn our meeting. Thank you, all.

(Whereupon, the meeting adjourned on May 18, 2023.)

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Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
June 20, 2023

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Attendee Report: May 2023 Habitat AP Meeting

Report Generated:

05/18/2023 01:51 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered
748-639-459	05/16/2023 12:46 PM EDT	3 hours 5 minutes	31

Attendee Details

Attended	Interest Rating	Last Name	First Name
Yes	55	Bell	00 Mel
Yes	70	Bianchi	Alan
Yes	99	Brouwer	Myra
Yes	62	Conley	Mary
Yes	62	Curtis	Judd
Yes	51	Howington	Kathleen
Yes	86	Hudson	Joseph
Yes	100	Klasnick	01Kelly
Yes	100	Laney	Reid Wilson
Yes	53	Mehta	Nikhil
Yes	64	Murphey	00Trish
Yes	53	Pugliese	Roger
Yes	70	Ritter	Michele
Yes	67	Schmidtke	Michael
Yes	93	Wolfe	Wes
Yes	37	collier	chip
Yes	72	merino	joy
Yes	96	thomas	suz

Attendee Report: May 2023 Habitat AP Meeting

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05/18/2023 01:51 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered
748-639-459	05/17/2023 08:21 AM EDT	6 hours 24 minutes	36

Attendee Details

Attended	Interest Rating	Last Name	First Name
Yes	77	Bell	00 Mel
Yes	65	Bianchi	Alan
Yes	41	Brouwer	Myra
Yes	68	Conley	Mary
Yes	82	Habich	William
Yes	92	Hartzler	Jeff
Yes	89	Hudson	Joseph
Yes	76	Klasnick	01Kelly
Yes	70	Laney	Reid Wilson
Yes	93	McGlade	Katherine
Yes	39	Medders	Paul
Yes	40	Mehta	Nikhil
Yes	86	Murphey	00Trish
Yes	55	Pugliese	Roger
Yes	95	Ritter	Michele
Yes	40	Smart	Tracey
Yes	71	Smillie	Nick
Yes	82	Theuerkauf	Seth
Yes	68	Williams	Travis
Yes	40	merino	joy
Yes	100	thomas	suz

Attendee Report: May 2023 Habitat AP Meeting

Report Generated:

05/18/2023 01:52 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered
748-639-459	05/18/2023 07:51 AM EDT	4 hours 28 minutes	36

Attendee Details

Attended	Interest Rating	Last Name	First Name
Yes	51	Bell	00 Mel
Yes	90	Berry	James “chip”
Yes	97	Brouwer	Myra
Yes	35	Glazier	Ed
Yes	39	Howington	Kathleen
Yes	34	Hudson	Joseph
Yes	97	Klasnick	01Kelly
Yes	90	Laney	Reid Wilson
Yes	32	Mehta	Nikhil
Yes	75	Murphey	00Trish
Yes	52	Pugliese	Roger
Yes	99	Ritter	Michele
Yes	37	Smillie	Nick
Yes	52	Williams	Travis
Yes	92	Wolfe	Wes
Yes	42	merino	joy
Yes	38	thomas	suz