SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT AND ECOSYSTEM ADVISORY PANEL

Hilton Garden Inn Charleston Airport and Convention Center
North Charleston, South Carolina

October 28-30, 2024

Transcript

Habitat and Ecosystem Advisory Panel

Stacie Crowe, Chair	Laura Busch
Matthew Kenworthy	Dr. Laurent Cherubin
Erin Spencer	Paula Keener
Daivd Webb	Benjamin Thepaut
Thomas Jones	David Whitaker
Charlie Deaton	Dr. Matt Johnson
Gregg Bodnar	Simen Kaalstad
Brendan Runde	Dr. Wilson Laney
Scott Kathey	Kevin Spanik
Jordan Wolfe	

Council Members

Trish Murphey, Chair	Amy W. Dukes

Council Staff

Myra Brouwer	Rachael Silvas
Dr. Chip Collier	Suzanna Thomas
Kathleen Howington	

Attendees and Invited Participants

Dr. Alex Schneider	Tori Kentner
Holden Harris	David Stevenson

Observers and Participants

Other observers and participants attached.

The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council convened at the Hilton Garden Inn Charleston Airport and Convention Center, North Charleston, South Carolina, on October 28, 2024, and was called to order by Chairman Stacie Crowe.

MS. HOWINGTON: All right, everyone. Welcome to the Habitat and Ecosystem Advisory Panel meeting. It is 1:00 on the dot. I need to show my screen, and make certain that's good to go. There we go. If you need the WIFI, or the password, here they are. I will also -- If you forget them, I will pull them up tomorrow morning again. All right. Let's pull up our agenda.

Here we have our agenda. The first thing we're going to do is welcome and introductions, and so I do have some announcements. Casey Knight, who was on our advisory panel meeting, has moved on to FERC. Cindy stole her away from us, as she has stolen a few others, and so we are very sad that she's gone, but we're very grateful for her help with the EFH five-year review. We wish her good luck at FERC, and then, with that, I would love if we could go around the room and say in the microphones our name, as well as our affiliation, and we'll start at the end of the U over here.

DR. SPENCER: Hi there. My name is Erin Spencer. This is my first meeting on the advisory board. I came from academia, and I now work for the National Marine Sanctuary Foundation, working on mesophotic and deep benthic communities in the Gulf, but I'm based in Florida.

MS. BUSCH: Hi. I'm Laura Busch. I'm with the Fleet Forces Command in Norfolk, Virginia, with the U.S. Navy. Also, as a plug, I brought some booklets for our upcoming Atlantic Fleet Training and Testing Environmental Impact Statement that's open for comments right now, if anybody wants more information.

MR. MEDDERS: I'm Paul Medders, with the Georgia Department of Natural Resources, and I get the pleasure of leading the Habitat Enhancement Restoration Unit with DNR.

MR. SPANIK: I'm Kevin Spanik, with South Carolina DNR, and I work with the reef fish survey there.

DR. CHERUBIN: Hi. I'm Laurent Cherubin, and I'm with Florida Atlantic University.

DR. LANEY: Hi. I'm Wilson Laney. I'm with the North Carolina State University Department of Applied Ecology.

MR. KATHEY: I'm Scott Kathey, with the National Marine Sanctuary Program, and so I'm here representing Florida Keys, Monitor, and Gray's Reef National Marine Sanctuary, where -- Gray's Reef is where I'm the Resource Protection Coordinator there.

MS. HOWINGTON: Kathleen Howington with the South Atlantic Fishery Management Council.

MS. CROWE: Hi, I'm Stacie Crowe. I'm with South Carolina DNR's Office of Environmental Programs in Charleston, and I also serve as your AP Chair.

DR. SCHNEIDER: My name is Alex Schneider, and I'm with the Bureau of Ocean Energy Management in the Office of Renewable Energy Programs.

MR. THEPAUT: Hello. My name is Benjamin Thepaut. I'm with the South Carolina Department of Environmental Services, Bureau of Coastal Management, Coastal Zone Consistency Section.

DR. JOHNSON: Hi. I'm Matthew Johnson, with NOAA Fisheries, Southeast Fisheries Science Center. I'm the Habitat Ecology Branch Chief.

MR. JONES: Tom Jones, Georgia recreational fisherman.

MR. KENWORTHY: Matt Kenworthy, with Florida Fish and Wildlife Conservation.

MR. WEBB: David Webb, recreational angler, and also a member of the West Palm Beach Fishing Club.

MR. WHITAKER: David Whitaker. I'm retired from South Carolina Department of Natural Resources, where I was Assistant Deputy Director. I'm an adjunct faculty member at College of Charleston, and there's one other I forgot.

MR. DEATON: I'm Charlie Deaton, North Carolina Division of Marine Fisheries, in the Habitat Enhancement Section.

MR. KAALSTAD: Hi. How's it going? I'm Simon Kaalstad. I'm with the Atlantic States Marine Fisheries Commission in Arlington, Virginia.

MS. DUKES: Good afternoon. I'm Amy Dukes. I'm with the South Carolina Department of Natural Resources and your state representative to the council.

MS. MURPHEY: Good afternoon. I'm Trish Murphey. I'm with the North Carolina Division of Marine Fisheries, in North Carolina, and I am the committee chair for Habitat and the council chair. Thank you.

MS. CROWE: Okay, and if we have folks online who would like to go ahead and introduce themselves.

MS. WOLFE: I'll go. This is Jordan Wolfe, with National Marine Fisheries Service, Habitat Conservation Division.

MR. MILLER: Hello. I'm Steve Miller. I'm with the St. John's River Water Management District, representing northeast Florida.

DR. RUNDE: Hi, folks. This is Brendan Runde, with the Nature Conservancy. I represent North Carolina.

MR. BODNAR: Hi, all. This is Gregg Bodnar, with the North Carolina Division of Coastal Management, and I run our major permit program.

MS. CROWE: Okay. Thank you everyone. The first thing we're going to take care of today is go ahead and approve our agenda for this week's meeting, and we do that by consensus, and so if I could see a show of --

MS. HOWINGTON: We have one addition for the other business, remember. We do have one addition to the agenda, and it's an other business. Lara Klibansky has been hired by the council as our IRA Project Coordinator. She would like to talk, as well as Holden, whose last name escapes me. Holden Harris. There you go. He is the new climate and ecosystem person for the Southeast Fisheries Science Center. He wants to give a little introduction to what CEFI is, which is the Climate and Ecosystem Fisheries Initiative, and what his projects are, and he is hoping that we will add a presentation from him to our spring meeting.

So, both of those, they have requested that they can introduce themselves, and give just a little summary of what they're going to be doing, but that's just an addition to other business. Otherwise, I have no other additions to the agenda.

MS. CROWE: Okay, and, so with the agenda that you were sent by Kathleen, and then with those additions, do we have approval of this week's agenda? Okay. I see hands, and nodding, and it looks like we do have approval. Okay, and so then the second thing that we need to approve is the meeting minutes from our spring meeting in April, and so, if we have approval of that, we'll move forward.

AP MEMBER: Move to approve.

AP MEMBER: I noticed Brendan's name was incorrectly spelled in the minutes, up front, as far as attendees.

MS. CROWE: Okay. Thank you for pointing that out.

DR. RUNDE: A worthy objection. Thank you.

MS. CROWE: Okay. With that correction to be made, then do we have consensus for the April meeting minutes? Yes. Good to go. Okay. Okay, and so, next up then, we always open the floor for public comment, at the beginning of the meeting, and then also at the end of the meeting and so, at this time, do we have any members of the public that would like to make comment, before we get started? I don't think we have anyone in the room, and so if there's not anyone online -- It doesn't look like there is. Okay, and so we will continue to move forward then, and I think, first up, we have Trish, who is going to come up and make some comments.

MS. MURPHEY: So, again, good afternoon, everyone. I just want to, first, say thank you for taking the time out of your week to be here and participate on this advisory panel. As always, your input and discussions are always very useful to the council, and to the Habitat Committee, and so I just want to thank you all for being here.

I'm going to go over a couple of council Habitat Committee meetings we had. We had one in April, and then we also met in June. Since your meeting in April, we had a meeting in June, and a meeting in September, and so I'll just go over both those meetings for you, real briefly.

The June meeting, we had Stacie came and provided the report about your April meeting, and then Kathleen also gave the annual habitat report, and, if you guys remember, this would be the first time that this report had been given, because this was new from your habitat blueprint. The big topic, during this June meeting was Coral 10 resubmission.

The Habitat Committee is made up pretty much of all the council members, and so some of the members of the committee did weigh-in on the concerns about the amount of time that had taken to open the shrimp fishery access area, which should have been just a simple adjustment of the coral habitat of particular concern line, and so the HAPC line, or what I call the CHAPC line.

They talked numerous -- You know, throughout this discussion, that this was a historical shrimp fishing area, and that there was no known evidence of damage from the fishery, and so that's kind of how it started, and so the discussion went on. As I had promised you guys at the last meeting, I did voice your concerns to the committee, and reiterated those concerns about the monitoring study that was done, your concerns about the sedimentation, and also the concerns about how long it takes corals to grow, and so I did want you to know that I did pass those on.

I think, you know, one of your members was very passionate that the committee was aware of your feelings, and so Kathleen then went through the history of the Coral FMP and spent a lot of time on both Amendment 8 and 10.

Coral 8, you know, that's what expanded the Oculina HAPC, and then Coral 10 was to establish this shrimp fishing access area, and so, in going through the history, for some reason, in Coral 10, the word went from making a boundary modification, which would have been just a simple framework, to establishing that shrimp fishing access area, which is a full-blown amendment, and so, long story short on that, the question just came up of if that was actually the appropriate way to go in setting up that fishing access area, because, basically, doing that in the Coral FMP doesn't mesh with the goals and objectives of that plan.

That was one of the issues that, you know, we got the rejection on from NMFS, was it doesn't follow the goals and objectives of the plan, and so a lot of discussion around that, and so I'm going to just fast-forward to our September meeting, and then Kathleen brought to the committee four different ways that we could move forward with the fishing access area and the coral habitat of particular concern, and so one was just address the comments from the rejection letter and resubmit Coral 10.

The other was to add an alternative to Coral 10 to increase the buffer between the coral pinnacles and the western boundaries of the proposed fishing access area. The other option was just to modify that boundary, through a framework, or the last option, which we did settle on, was develop a joint plan between the shrimp and the coral, to establish the fishing area, and so the committee did land on doing that joint amendment, and this would establish the fishing access area for the shrimp in the Shrimp FMP, and it would establish the existence of that fishing access area in the habitat in the HAPC for the Coral FMP.

Those proposed joint amendments will need to address the goals and objectives of both that shrimp and coral plan, and so that was the gist of both those meetings. June really was kind of a -- June was a very vocal meeting. We did have the Shrimp Committee meet before them, and so there was some discussions there, and then that came into the Habitat Committee, where we just, you

know, fully worked through the shrimp and the habitat, and so, yes, we're going to be -- Staff will be bringing forward a decision document on the joint shrimp and coral -- Not at the next -- In March, and so that's pretty much it on what's been going on as far as the Habitat Committee for the council, and so if you all have any questions.

DR. LANEY: Thank you, Trish, for that update. Just a clarifying question. When you said joint amendment, did I assume correctly that's the Coral AP working with the Deepwater Shrimp AP? Are those the two APs?

MS. HOWINGTON: The Shrimp AP, and we're combining those, but yes.

DR. LANEY: Okay. Thank you.

MS. MURPHEY: All right. Well, thank you very much, and, again, thanks again for you all being here and doing the work you do.

MS. CROWE: Thank you, Trish. Okay, and so let's go ahead and move on to the topic for today, and so, this afternoon's meeting, we're going to spend the time talking about the EFH five-year review, and you received those attachments in your agenda packet, and we're going to start off with a food web policy update subcommittee report from Wilson.

DR. LANEY: So, hopefully, this will be relatively short and sweet, and, once the slides appear to prompt me, I'll start talking. Okay. Here we go. All right, and so, if you recall, we established this subcommittee at the May 2023 meeting of the Habitat and Ecosystem AP, and the volunteers we had were myself and Kevin Spanik, and I think -- I'm not sure Laurent was present at that meeting, when we volunteered him, but, anyway, he agreed to serve on the workgroup also, and the charge that we had was to conduct a limited review of the EFH guidance and policy documents, with a focus on predator-prey relationships and identifying any relevant literature which had been published after 2016. The reason we picked after 2016 was because that was the date of the policy document.

Thankfully, our subcommittee members were joined by Dr. Collier, and thanks, Chip, and Mrs. Kathleen Howington. Thank you, Kathleen, and then we also, because of her expertise, and the fact that she had produced the previous food web diagram, the figure that was in one of the documents, we also recruited Ms. Lauren Gentry, of the Florida Fish and Wildlife Conservation Commission, to join us, and Lauren graciously agreed to do so, and greatly benefited us by her participation, and I think she's online, I believe, or at least I thought I saw her name over there, and so, if we have questions for Lauren, hopefully she would be willing to unmute herself and respond.

We met multiple times, via webinar, during 2024 to refine the task and to divide up the workload. We have proposed some revisions to the policy considerations document, and to the user's guide, and I think we're going to go over those, and Lauren has worked to come up with an updated food web figure that will be used to replace the one that was previously in there, and then yours truly has been working on looking -- Doing a literature review, and pulling a lot of references, additional references, out, and those -- Some of those will be deemed important enough to reference. Some of the rest of them would be just plugged in to highlight the information that they provided.

So, at this point, I think we're going to go over the edits. They're up on the -- We've got it up on the screen, and so, Kathleen, do you want to walk us through that?

MS. HOWINGTON: I can do that. All right, and so, like Wilson said, one of the big lifts was going through and updating references, and so one of the things we did do, and this is at the end of the document, is we separated out works cited and references, because we ended up adding a lot to the references section. We didn't want the works cited to get mixed in, and so that is an update that occurred. We also then went through and added in all of these new habitat policies.

We clarified some definitions as well, and so, for the sake of clarity, definition of EFH, for the sake of clarity, the definition of HAPC, and then, if we're moving further down, making sure I'm not forgetting anything, and we updated this beautiful figure as well, which Lauren painstakingly created for us. I recognize that it is very difficult to read, but it is just as difficult to read as the previous one was, and the point is to be able to actually visualize how complicated this is, and so flow strength -- Blue, of course, is low. Red is high.

We also have our HMS in here, as well as longlines and charter boats, and so your purple is going to be your gear. Sorry, and let's go down to the legend. Brown is detritus. Green is our producers. Yellow is consumers. Pink is SAFMC-managed species that are in the group, and so that doesn't necessarily mean that all of the species in that dot is SAFMC-managed, but it does mean that, somewhere in there, we're in charge of one of them, and then, finally, purple is fishing fleet, and so we were able to go through and try and recreate this, as best as possible.

Like Wilson said, Lauren is the expertise in here, and she is not on. She is not on, unfortunately, and so -- But I can -- You know, any questions you have, I can send to her, but we're very grateful that she was able to update this.

The next big thing we did is we did go through our general policies, and we included forage fisheries, which includes a definition of what a fishery is, as well as prey importance, and so both of these were added in to try and explain how diet data was used, what the importance was, and then you'll not, here, that we updated Appendix A as well.

Appendix A was initially a graph of SEAMAP species that were caught, and a diet analysis of that, and so we updated that and went a completely different way, and so, if you'll close your eyes while I scroll, everyone online, because a lot of the rest of it was -- Here's our work cited, and here's our references, and then the next big thing is Appendix A, so this was a big change we made.

With Lauren's help, we were able to go through each fishery management plan and identify the top ten prey items, and then what the percentage of those things were, and so this was very informative, and, while we were having a discussion about this, we went down a really deep rabbit hole on how to integrate this into the user guide, and that's going to take longer than what we have, because the EFH five-year review is due in December, and so we kind of put a pause to ourselves, and decided we were going to include this information in the policy, and then part of the next five-year review is how do we integrate this into our user guide, and to our verbal definitions of EFH, because it just --

It got really complicated of do you look at all prey, do you look at invertebrate versus vertebrate, and what constitutes important, and then, once you figure out, hey, here are the top-five prey

species that are important for this fishery management plan, what happens if one prey, or predator, is specialized, versus the others that are not, and what -- How do we determine habitat that's important for these prey to use?

You see where I'm going? It was really easy for me to just start tumbling that out, and so we're going to pause. We included it, and I think it's a really great inclusion, and, like I said, it's for each FMP, and we were not able to get -- So we separated out all prey, versus fish prey, but that wasn't necessarily available for all FMPs, and so like golden crab, and separating out the fish prey was not an option, but we kept it there, just for the record, and then we added in an acknowledgement, because Lauren did a huge lift in helping, and she's not a part of our working group, and she's not even a part of our AP, and she did this out of the goodness of her heart, and anyone who knows Lauren needs to thank her, sand o we added an acknowledgement at the very end, because she definitely deserved it. With that, back to you, Wilson.

DR. LANEY: Okay, and so I guess, at this point, I would ask if anybody has any questions on what we did, and why we did it. We did have, as Kathleen will attest, and let me just say, on the record, thank you Kathleen, who did a tremendous amount of work on this, as well as Lauren Gentry. A tremendous appreciation for both of them and the work they did to help the working group out and keep us moving along.

We did have a lot of discussions about, you know, what do we do about prey, and there's all sorts of different ways to go on that, from an ecological perspective, from trophic literature, and so, ultimately, we took Lauren's advice and just used multiple approaches, you know, to identify important prey in the South Atlantic Fishery Management Council's geography and ones that we need to keep an eye on.

We had a lot of discussion about ecosystem component species, and we talked a lot about Steve Poland's work with bullet and frigate mackerels and cobia and dolphin and wahoo, or, actually, dolphin and wahoo, and not cobia, and, for various and sundry reasons, it's not deemed advisable to try and list every single species that may be significant as an ecosystem component species, and we did have some discussion about designating them as EFH, and that was contraindicated as well, and so this is where we are today, and we would certainly welcome, and entertain, any additional questions that any of you have for any additional things that you think we might want to change, or modify.

MS. CROWE: Thanks, Wilson. I think these updates look fantastic, and so thank you, and Kathleen and Lauren, for your work. Does anyone have any questions for Wilson? Scott, go ahead.

MR. KATHEY: I've got a couple of superficial observations. The date, do you still want December 2016 on this document, at the very top?

DR. LANEY: No, and we need to update that.

MR. KATHEY: Okay, and then, in the second paragraph, the acronym for the council is misspelled a little bit in there, and it's right on the left-hand side, about five lines down, but I also had a question about the percentages, and maybe I missed something, but, when I add them up, they don't add up to 100 percent. Can you explain why that is?

MS HOWINGTON: Because these are the top ten of the percentages. If we looked at all of the species, that table is really, really big. I do have it, if you want to look at it, but it is not conducive to putting into a Word document, and so we had to kind of just cut it off.

MR. KATHEY: That makes sense. Thank you. Would it be maybe helpful to go ahead and put those total percentages for that top 10 percent, because it helps you to see just how much of their total diet those top ten consume, you know, add up to. I think, you know, it tells a little bit of a story there.

DR. LANEY: Thanks, Scott. I think that's a good suggestion. Anybody else have any other questions, or comments? Matt Kenworthy.

MR. KENWORTHY: Not having been here, on this panel, for the kind of beginning of this, did you say that the food web analysis was updated, or this was just a new addition for this document?

MS. HOWINGTON: So, you're referring to the tables in Appendix A?

MR. KENWORTHY: Yes, and the big spiderweb diagram.

MS. HOWINGTON: All right, and so the big blob, the big blue blob, that was already included in the policy. That was updated. The Appendix A used to be a different table, that we decided was not as informative as this analysis, and so that was replaced.

MR. KENWORTHY: Okay, and so I guess I was just kind of interested in what the big change is, you know, functionally about understanding of the system from the original to now, and I apologize if I'm the only one that is not familiar with that, being the new one still on this advisory panel, but I was wondering if you could speak to that a little bit.

DR. LANEY: Yes, Matt, and so that's a Lauren Gentry question, I think, but she's not on, and so I'll give it my best shot. What we asked Lauren to do was just to, based on her knowledge of any additional diet information she had received since 2016, to make any necessary changes in that food web diagram, and I'm not sure whether there were any significant changes or not. There just isn't that much diet information out there.

I'll defer to Kevin on that point. He may want to weigh-in on that, because he did due diligence in talking to the people that we know are doing diet work, and may have generated new information since 2016, but, as far as I know, I don't think there was a whale of a lot of change, but, as Kathleen indicated, Lauren had to do a lot of work by hand to manipulate all those little dots, and color coding, and turn it into a pretty new food web diagram, and so I think we can certainly pass that question along to Lauren and ask her if there were any substantial changes in the diagram. I don't think there probably were though.

MR. SPANIK: I'll add that I don't think there was a lot of new information, but kind of the way that it was investigated is a little different. It was kind of more the whole ecosystem for this whole South Atlantic, whereas, as you look at it now, it's kind of more broken down into the individual FMPs, and so maybe percentages that wouldn't have popped up on the wide level are kind of now able to be recognized, when you look at it on a finer scale for each individual FMP, and so that

kind of helps prey be more recognizable as important on that kind of finer scale for each individual FMP.

DR. LANEY: David.

MR. WEBB: Wilson, two or three meetings ago, when we first started talking about the bullet and frigate mackerel, specifically to dolphin and wahoo, it was in tangent with our sister council to the north wanting to even suggest that we were going to have some kind of management philosophy, or management policy, for that. These statistics here, under the dolphin wahoo, seem to be much lower than we were discussing at those meetings, based on the diet research that was being done. At one point, I thought we were talking about bullet and frigate mackerel being like 30 or 40 percent of the diet of wahoo and dolphin. Was that found to not be true?

DR. LANEY: No. As far as I know, that was the case, and I can't explain, at the moment, why those percentages are in the 9.3 range. Again, that'll be a Lauren question, I think, but, based on, and Trish may help me remember this, but, based on Steve Poland's MS research that he did at NC State, the percentage was in the 40 percent range, which is one of the reasons the council went along with listing them as ecosystem components, is because they were such a high percentage of the wahoo diet in particular, and not as high in the dolphin diet.

That may be -- Now that I think about it, that may be part of the reason it's not showing up as high a percentage here, because I'm not sure -- Kathleen, do you remember how Lauren broke this out of the table, because she has combined dolphin and wahoo.

MS. HOWINGTON: Lauren is online now.

DR. LANEY: Okay. Great. Well, I will defer to Lauren then.

MS. HOWINGTON: Lauren, you're unmuted.

MS. GENTRY: There we go. It takes a few seconds to let me unmute myself, apparently. Can you guys hear me?

MS. HOWINGTON: Yes, we can.

DR. LANEY: You're coming through loud and clear.

MS. GENTRY: One of the things that we discussed, for a lot of the numbers that you're seeing here, is that some of these FMPs include one or two species who have a very different diet composition from the majority of the species. I don't remember which species, or groups of species, in dolphin wahoo was throwing off the averages, but, certainly for dolphinfish, yes, Auxis mackerel is a large portion of their diet, and I think maybe highly migratory pelagics are in there too, but, for this first analysis that we did here, we used --

If a species was included in the FMP, and included in a group in the ecosystem model, because all of these diets are grouped together in one way or another, either by single species or by groups of species, like pelagic oceanic piscivores or something, and that includes probably six or seven

different species, and, even if there was only one FMP species in that group, that group's whole diet got included in this, because we sort of said that this is a methods document.

We were kind of going at how we would approach this, and then we said that, for each FMP, later we'll go through and actually go through the individual diets for each species, and pull out what's important to them, and figure out, you know, what to do with it, and which species are overrepresented in things, but I know that like for the -- What is it, and is it coastal migratory pelagics that's on there, and like cobia is in there, and cobia -- You know, 80 something percent of their diet is crab, and so, when we averaged it together, that skewed the results.

Some of these may not represent just one, and, you know, obviously, dolphin wahoo is a handful of different species, and so, for certain species, yes, Auxis mackerels are a huge part of their diet, and, for other ones, it wasn't, and so it averages out to be a little bit low, but that will all get sorted out once we really go through with a fine-tooth comb. Does that answer your question?

DR. LANEY: Yes, Lauren. David said that answers his question. Thank you very much. Hang on one second, Brendan, and so, Lauren, I don't think you were on earlier, but we have thanked you profusely for your contribution to this effort. We could not have done it without you. I hope you know that, and so thank you, thank you, thank you, so very much, to you, and to Chip, and to Kathleen, for sitting in with the workgroup. We appreciate it hugely. Okay. Dr. Runde, I believe you have a question.

DR. RUNDE: Well, it's hard to follow what Lauren said with anything more substantive, and so I certainly won't make an attempt at that. I was just going to add that Paul Rudershausen and Jeff Buckle and I have a paper. I don't think it's in review yet. Anyway, it’s an update on dolphinfish diets, from our collections at the Big Rock Tournament in North Carolina. I don't know if anyone's looked at that for this.

Nevertheless, yes, the kind of percent weight contribution of all Scombridae in dolphinfish has been pretty variable over time, but, for wahoo, which we didn't look at for this particular paper, it is a lot higher than for dolphinfish, and so that was all I was going to add, that it's certainly a species-specific thing here, and that's just another example of what Lauren was getting at with how it can be problematic to lump different species together into a single FMP, but that's the world we live in. Thank you.

DR. LANEY: Okay. Thank you, and I think the bottom line is it's complicated, when you start looking at an ecosystem this large, with this many species in it, with this many potential prey, and so we have Kathleen's indication that we will be working on this some more, during the course of the next five years, I think, and it hopefully will get less complicated, once we start looking at it on a species-by-species basis, or maybe not. Who knows? David, did you have another question?

MR. WEBB: I would just urge us to not lose the significance of a specific prey in a specific species, such as the wahoo and the mackerels, because it's -- You get a little disruption in those mackerels, and you're going to have a huge impact on -- Even though it's just one species, it's an important species, and so I just -- However we can make sure that we preserve that emphasis within the realities of a document like this.

DR. LANEY: Okay. Thank you. Yes, that's an important consideration, for sure, and, you know, we want to remember that one of the factors in listing the bullet and frigate mackerels as ecosystem components was the concern that a commercial fishery might develop for those particular species. For a lot of the prey species, commercial fisheries already exist for them, you know, like the penaeid shrimps, for example, and so, again, I think it's going to be interesting, as we work on this for the next four or five years, and just stay tuned for further developments. Let me go over this. Is this the final slide? I think this is the final slide.

MS. HOWINGTON: The end slide has a pretty turtle on it.

DR. LANEY: Okay. Yes, the end slide with the turtle on it. We did -- As we've already discussed, we did identify the top-ten prey groups for each fishery management plan, by percent by volume in diet, in Appendix A, and we are recommending further analysis of the information in Appendix A to identify the total importance of the prey or percent overlap across all of the FMPs, the number of times prey species are identified as a top prey item, the EFH, by life stage, of identified important prey.

Let me just insert a parenthetical statement there that it is probably going to be a challenge to do that by life stage, because, for a lot of the younger life stages, I don't know that the diet work has been done. I think that information probably doesn't exist, and so hopefully there's a tremendous number of future graduate students out there who might jump in there and do some of that work and identify those prey items for us, for those early life stages especially, because, after all, those are critical.

I mean, we all know a lot of these species produce a tremendous number of offspring. That's a strategy to try and ensure that enough of them survive to sustain the next generation. The mortality rates are, you know, in the 90 to 95 percent range, for a lot of them, but still they are eating something, and the ones that survive have successfully preyed on important things, that we probably would benefit by knowing about.

The last thing is other indicators that a prey item is highly necessary to a species diet, and so our final recommendation there is that we should investigate the integration of the habitat used by important prey species into the EFH user guide for the next five-year review, and, again, I'll pause there and ask if anybody has any additional comments, thoughts, or questions.

MR. KATHEY: Just one more thought here. Noting that the percentages are based on adult fish diets, and I don't know that that's explicitly, or whether it needs to be explicitly stated here in this document, because I was kind of wondering that as I was looking at these percentages. Is this through different life stages, or is it just adult fish?

DR. LANEY: I'll ask Lauren to weigh in on that one, but I think it probably includes, Scott, multiple age classes, because SEAMAP has been doing diets on anything they catch, and they do get a fair number, don't they, Kevin, of age-ones for sure, and maybe not age-zeroes, and so probably we would say it is reflective more of sub-adult, and adults, as opposed to juveniles, and certainly more reflective of those than early life stages, but, Lauren, do you have anything to add on that point?

MS. GENTRY: Yes, and just to say that it varies from species to species. For some species, we have multiple life stages represented in the diets. For others, we don't, and so we'll just have to take that kind of on a case-by-case basis as we go, but, when I was rounding up all of these diets throughout the years, I was trying to focus on finding multiple life stages, and a lot of the literature has multiple life stages, or multiple size classes at least were reported, but not for all of them, but it will be included if it's available somewhere.

MR. KATHEY: Yes, and I would just recommend including some statement about that in the document, to make it clear what those numbers represent, you know, a little bit more clear.

DR. LANEY: Good observation, Scott, and we can definitely add that qualifying in there. Kathleen.

MS. HOWINGTON: Then, Lauren, while we have you here, there was a question earlier about what was the difference in the big blue blob. What changed between the 2016 and the 2024 analysis? Was there a substantial update in information? Did you notice any large changes between the two?

MS. GENTRY: Not necessarily, and so the new South Atlantic model is much more highly articulated. It's 140 groups, versus thirty-some-odd groups, and it has new fishing fleets that weren't represented in the old model, but, for the most part, it's just a large ecosystem, and so your biomass is at the bottom, at your primary producers, and then your larger predators are up top.

There's not a ton, really, that can be gleaned from those spaghetti models, except just showing that fishing is occurring at multiple different trophic levels, and that's really the only thing that I could glean from it, that that's the same, regardless of year to year, and so no especially large changes, but they're really representing a different ecosystem that has more groups in it.

DR. LANEY: Okay. Thank you, Lauren. Anybody else have any other questions, or comments, about the food web? Thank you for those good suggestions, and we'll definitely implement those, and I think that's it, Madam Chair, for our workgroup report.

I will just say that I still am looking for additional literature, and, to the extent that we find stuff, I'll provide it to Kathleen, and the rest of the workgroup, and we can add in to either to the -- I think Lauren had indicated that -- I had sent -- I had broken out two papers, and sent those to her and Kathleen, and I think Lauren deemed at least one of those very worthy of citation, and so we've already worked that in, and, if we find additional ones, if you would give us the editorial discretion to, you know, add those in, as we find them, and that would be good. Otherwise, we'll just plug stuff into the references section, that would not be cited in the report, but would be there for people's information, if they want to try and track additional information down.

MS. CROWE: Scott, go ahead.

MR. KATHEY: I'm getting tired of hearing my own voice as well, and so, under the recommendations, there's some very solid recommendations there about the climate vulnerability assessment, region habitat assessment, but I don't see explicitly any call for an IEA, a NOAA integrated ecosystem assessment, and the Southeast, as we all know, is the only part of the United States that has not been done.

Now, maybe I'm a novice here, and maybe I don't know some politics here, but it seems to really beg the question of why hasn't that been done here, because all of these things seem to stream that direction, and so is there a reason it not mentioned here by name?

MS. CROWE: I don't know the answer to that, but I'm going to pass it to Kathleen.

MS. HOWINGTON: There is no reason why it's not mentioned by name, but I can put it in the recommendations. I think that's great, and I don't know why we don't have one. I would love one.

MS. CROWE: It's a great idea.

MR. KATHEY: So I would recommend, if -- Provided the panel agrees, that we suggest that that be done here, and sooner rather than later.

DR. LANEY: Yes, and I don't have any objection to that, and I can't answer as to why it hasn't been done already. I imagine that's probably a Southeast Center question, maybe. Trish is nodding her head. Matt, do you know? Can you shed any light on that?

DR. JOHNSON: I'm actually asking the question right now, because I know the IEA comes up in our conversations a lot, and so I don't know the status on it, but I thought there was something underway, but don't quote me on that, but I'll check.

DR. LANEY: Matt, for the benefit of everybody else, who may not know exactly what an IEA is, would you just briefly explain what one is?

DR. JOHNSON: Basically, it's an integrated ecosystem assessment. I think it's pretty much like Ecosim on crack, taking it out to the Nth degree, and pretty much every possible scenario out there, and offering up a few ideas that could be used to advance certain aspects of the ecosystem, and so --

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

DR. JOHNSON: Correct. It ties everything in from one side, from living to non-living to monetary, and it looks at it over time as well.

MR. KATHEY: I just want to add that it looks at socioeconomic, and cultural, and, I mean, it truly is integrated across both the social services as well as the ecological services, and so it's a soup-to-nuts analysis, and it's no small task, but it has been done in every other ocean region of the United States except this one.

MS. CROWE: Okay. Thank you. It sounds like we've had some good recommendations, and, as Kathleen mentioned earlier, one of the big questions is how to integrate this into the five-year review, which leads us to our next topic of discussion, which is the next five-year review, and Kathleen is going to talk a little bit about some of the long-term goals.

MS. HOWINGTON: All right. Like Stacie said, so we're finishing up this five-year review. We have updated the food web policy. I will be submitting a letter, basically with the

recommendations that you all have already seen, that have already gone to the council, and that's going to be going to NMFS, hopefully maybe by the end of the year.

That is the goal, is by the end of December. We do not have a Habitat Committee for the council this December, and so normally it would go to the council, and they would see it, and then it would go onward to NMFS, and so I'm trying to figure out how that's going to work without a Habitat Committee, but we'll figure it out, and so that will be going out soon. Then we'll be closing the book on this five-year review, and so let's start discussing the next one.

The next one, we're hoping to make some big changes. We have a couple of exciting projects coming up. The first thing that we're going to be working on is this working group that has now kind of volunteered to keep working, which I'm very grateful for. Thank you, guys, and so we're going to keep trying to work on how to integrate this information into the user guide. You all have already looked at this recommendation, and you all have already approved it, and so we're going to keep on keeping on with that.

The next goal is improving EFH level, and so this is going to be a brainstorming process. How do we do that? How do we go from level one, which is what all of our EFH is currently defined, to level two? Let's just start slow, and try and put in abundance into these. How do we integrate that? We need to do this.

We have EFH currently defined by fishery management plan, with, on occasion, if a fish is very unique, and doesn't have the same EFH as the rest of the fish in that fishery management plan, we will have an outlier, and, for existence, tilefish has its own EFH, that has been defined, because it uses different habitat than the other snapper grouper in the snapper grouper fishery management plan, and so how do we start doing this?

Again, we have five years. That's good. Do we pick an FMP like snapper grouper, that is huge, or do we pick a smaller FMP, like spiny lobster, where it's just the one species? Then where do we go for this information? Where is abundance stored? What would be the best place to look it up? Those are all my questions. Please give me all your ideas.

DR. LANEY: So I don't have an idea, but I did want to let you know, and, Simen, feel free to chime in as well, but we are fortunate to have, on the ASMFC Habitat Committee, a representative from both the Mid-Atlantic Council and the New England Fishery Management Council, and they let us know, last week, that they will be updating all of the technical EFH documents that they have produced through the years, and I think, if I remember right, Simen, they said they were going to probably contract those out, I believe. Do you remember? Was that the case? For the council's technical EFH documents, didn't Jessica say they were going to contract those out, I believe?

MR. KAALSTAD: (Mr. Kaalstad’s comment is not audible on the recording.)

DR. LANEY: He said yes.

MS. HOWINGTON: I believe that you're talking about the IRA projects that are upcoming, or is this different?

DR. KAALSTAD: I will admit I had to run into the other room when that conversation was happening, but I do remember that they are in the process of updating their species, or their habitat lists, yes.

DR. LANEY: These are like the actual technical documents that designated EFH, and they did it -- Remember the Mid-Atlantic and the New England Council did it differently than the South Atlantic Council did, because we did it broadly by habitat, and they did it by species-by-species, and so there's some very large documents out there, that are chock full of information, that they're going to be updating based on the literature that has appeared in the interval since those documents were prepared.

Most of them came out in the 1990s, I think, or maybe early 2000s. I would have to look at the dates on them, but I just wanted to let us know, as a Habitat AP here, that some of those species overlap with the South Atlantic, and so like spiny dogfish comes to mind, which spends a lot of time in the South Atlantic during the wintertime, and so there will be a lot of information that they're going to be developing that may be useful to us, as we do the subsequent update required.

MS. HOWINGTON: Right, and so that does lead me to my next slide, actually, as we are going to get some support in this. IRA Project 3 for the South Atlantic Fishery Management Council -- For those who don't know, IRA is the Inflation Reduction Act funding that we got.

The third project that we applied for was approved. The goals of this are to update information on species and fishery spatial distribution, compare EFH designations to updated species distributions, make recommendations for potential future EFH changes in response to climate change, and then improve the display of EFH information on the council website, and so the person who is going to be coordinating that is Lara Klibansky. She is online right now. She is going to be our main IRA contact. I think she's online. Maybe I'm just making stuff up. I'm making stuff up. Okay. So I apologize. I thought she was.

We are going to be getting some help with that, but you'll see this doesn't improve the level. This is just going to be clarifying our EFH definitions with any kind of new information that exists, and so these are two separate things.

The Mid-Atlantic and the Northeast councils have also received this funding, and the Gulf and the Caribbean. All of them got IRA funds. All of them are doing their best to try and come up with climate projects. You're right that the Mid-Atlantic and Northeast have EFH projects that have been funded.

There is a group called the East Coast Climate Change Coordination Group. They are the E3CG, because it's the worst acronym ever, and they are going to be meeting Thursday of this week. It involves all the executive directors and regional administrators for the councils and for the science centers, and they're going to be discussing a lot of those climate projects, as well as the IRA projects that are going on.

Lara is a member of that group, and so she is going to be coordinating with them, and, a lot of the stuff that the Mid-Atlantic and Northeast are doing, we're going to be doing our best to try and duplicate down here. On top of that, there is, again, the CEFI projects, that you'll be getting the little summary of on Wednesday with Holden, the Climate and Ecosystem Fisheries Initiative.

They are also looking at more EwE modeling, and doing a model for the Atlantic coast, and so they're looking at that right now.

We'll be getting a presentation on that in the next meeting, and so that could potentially inform information as well, and so all of that's all the new information we have, but, again, none of that has anything to do with -- It's not letting me go backwards. There you go. Abundance.

If we want to try and make our EFH level improve, this is an opportune time, because all of those people are also doing EFH analysis, and so hopefully we can steal some code, duplicate some methods that they have, and I'm doing my best to keep my ear to the ground for everything that they're doing and talk with all of them.

I'm part of the CCC Habitat Working Group, so I'm talking with Mid-Atlantic and Northeast and the Pacific, because they also got money, by the way. There is a lot of projects going on, but, for now, I want to try and focus on the South Atlantic, what we have, who we can talk to to try and integrate that information in, and what we think the process should be for this, because this is just an us thing for now.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. So, looking at the level definitions there, and based on some things that one of our Florida colleagues indicated during the Habitat Committee meeting last week in Annapolis, I'm wondering if some of the state agencies may not be producing some of this information that would be able to kick us from Level 1 up to Level 2, and Florida in particular. David, I don't know if -- Do you know Kent Smith, who's with Florida Fish and Wildlife Conservation Commission?

They have a unit, or a group, that is looking into ecosystem dynamics in five different estuaries, I think, and so it may be that some of the information that Florida, or other state jurisdictions, are producing might be useful in helping the council to go up to a higher level, and I don't know.

Then looking at Level 3, in terms of growth, reproduction, or survival rates within habitats, a lot of that information is derived from gray literature, graduate student studies in particular, and so I guess that's something we can be looking at during the course of the next five years, is to, you know, keep looking at the literature and try and find information about South Atlantic council-managed species that will kick us up a level or two, hopefully.

MR. MILLER: I'll speak to what Wilson was referring to about FWC. If we're talking about trying to find data, and information, about abundance and density numbers, we have a fishery-independent monitoring program up in northeast Florida, in the St. John's River system, and then we have a gap, and then it starts again in the northern Indian River Lagoon and runs all the way down to the southern end of the lagoon there, and so that would be the extent of data in the east coast of Florida, and that would encompass a majority of the coast with respect to where SAV is present throughout the IRL.

That is certainly information that could be used in this analysis, and there wouldn't be many challenges of acquiring it and incorporating it. I defer to the other states, as far as what programs they have, but that sampling would be good for density, because, you know, we use small and

large seine net, and so it's pretty good at catching just about everything, and so, if we wanted to do kind of a comprehensive analysis of things, that would be a good data set.

MS. CROWE: We were just wondering if other states did have similar things. Kevin, does South Carolina have similar data to that?

MR. SPANIK: Not that I'm aware of.

MS. CROWE: Okay. Anyone else?

MS. HOWINGTON: Okay, and so we're going to have some homework. Thankfully, we do have five years to look at this, and so this was the start, to see what we have. I would appreciate it if state representatives, and researchers, try and go and accumulate what information we know, and so, that way, during the next conversation, we can maybe establish a working group to try and get this started, and so see what we have, what data is available, and, again, if you have data available, and you're interested, we'll be establishing a working group during the next meeting. We have time, and we don't have to do it right now.

DR. LANEY: One other thought that occurs to me, and Chip is not in here right now, right. but the council's own study plans for some of the special management areas, and also the HAPC, could provide possibly some of the information that might kick us up to the next level, too. I think we just need to familiarize ourselves with what those management objectives, and goals, are, and what has been funded there, which may also help us out a lot during the next five-year interval as well.

MS. HOWINGTON: All right, and so that's some good information. We'll get started on that, and, like I said, we'll establish a working group next meeting. I've already kind of given a summary of IRA information, and so I'm looking forward to Lauren being able to give a little bit of an introduction on what's going on with that, and I'm going to be working with her, to make sure that that project is going forward.

I'll probably be reaching out and emailing all of you guys about that, and so just for the future, and there we go. Right now, we do have the RFP out, and so if anybody would like to respond to that, and I've sent it out to the AP. If you're interested, you have until November 15th to be able to complete that.

The last thing that I think should be a goal for the five-year review is the improving life stage information, and so we have some integrated into our EFH. That's how we have coastal stuff, SAV. All of that is, you know -- My pen just broke. All of that is typically a nursery. Sargassum is, of course, a nursery, and so that -- It exists, but we don't have any kind of migration in our EFH definition. It's one static blob. We don't really have a lot of life stage information, and so please discuss what data do we have available, and what we think our next steps could be with that.

MS. CROWE: Wilson, go ahead.

DR. LANEY: So, Kevin, MARMAP was all larval-based, right? Ichthyoplankton survey data, is that the only database that we have that would have any early life stage information in it?

MR. SPANIK: It's the only one in the region I'm familiar with. It's not a real long-term like time series thing. It's kind of bookended in the 1970s, I think, but we could look into it.

DR. LANEY: The other thing I'm aware of, Stacie, is there are at least two long time series of larval immigration data in the South Atlantic. One of them is North Inlet, which is South Carolina's long-term ecological reserve database. Help me out here, Alex. What's Dennis' last name, who is the PI in charge of that?

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

DR. LANEY: Yes, Dennis Allen, I think. I think that's right. Then the Beaufort bridge net survey is the other one, which is operated by the National Marine Fisheries Service in Beaufort, and I don't know who is in charge of that one at the moment. I usually talk to Fritz Rohde, if I have any questions about that, but he's not the one who's in charge of it, and so there are those two very long time series that look at ichthyoplankton immigration in through inlets, two inlets.

There's another one to the north, but it's out of our council's jurisdiction, and so it wouldn't be particularly useful, I don't think, and then there may be, again, an opportunity. I know that Chris Taylor, and that group at the Beaufort Lab, have been doing a whole lot of work looking at recruitment data and trying to explain the factors that influence year class success, in Pamlico Sound in particular, and so those are the only sources of additional life stage information that I'm aware of, right off the top of my head anyway.

MS. HOWINGTON: Okay, and so, again, these are the goals that I have created for the next five-year review, and so I wanted to reach out and ask you guys. Do you think these are realistic? Do you think that we can improve our life stage information, improve our abundance? Like I said, the IRA project has been funded, and so that will be with Lara, and so that's good. The food web working group is already good to go, and so then abundance and life stage. Do you think this is possible? Do you think this is good for a five-year review, and are there any other goals that you think we should set forward? Also, Simen and Laurent, there are two chairs available now, and so, if you all want to come to the U, you can. We'll get you a microphone.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Sure. I think they're reasonable, Kathleen. I think, once again, we just have to dig into the literature and see what's there, and one of the things we talked about earlier was what do these larvae eat, in particular, and, you know, what prey items do they require? We have more information on juveniles and adults, I think, than we do on larval food habits.

Then, as far as the eggs go, I guess the big question there would be, you know, what's climate change, increasing ocean temperature, increasing acidity, and what's that going to do to hatching rate success and survival, and I don't know, and Scott may know, whether there's been any studies done to start to try and answer any of those questions. I just don't know.

MR. KATHEY: No, I don't. I don't have any information.

DR. SPENCER: I have a question, and apologies, just because I'm new to the panel, if this has already been established, but are we ever doing targeted outreach to specific like academic labs?

No? Is that -- You know, because I'm thinking -- You know, you talk about looking in the literature, including some of the gray literature, but there's a lot of these ongoing data sets that maybe haven't been published yet, but we know folks at certain labs are working on them. I mean, is this something that we have done? There's just a couple of -- Like moving to Level 2. You know, I came from Florida International University, and there's a ton of different labs that are doing some of this work on some of the species. Is that something we do?

MS. HOWINGTON: As of this Wednesday, it will be.

DR. SPENCER: Oh, fantastic.

MS. HOWINGTON: So, on Wednesday, we're going to be discussing the Habitat AP's outreach communication plan, and so, Erin, I'm going to tag you first. You just volunteered to help start us on what we want to do. The truth is outreach and communication, for the Habitat AP, has not been something that we've been working on, but it is something that the council is interested in us helping develop, and so I have been in touch with the Outreach Communication Advisory Panel. They have given us some recommendations. I love that. That is not one they gave us, and so that can be added to a potential goal.

They've also recommended FAQs, and us creating a video on habitat, and the council's role and responsibility with that, but that's all something we can discuss on Wednesday, for like future plans, but thank you very much, because that is something we're going to start doing.

All right, and so then, like I said, any other goals we can add in? I will type that up now, outreach to academics, and, if you all think these are realistic, then again, what I would like to do is assign you all some homework of trying to find where we can look for abundance information, and trying to find now where we can look for increased life stage information, because those are two things that I would love to tackle.

Then hopefully, during the next meeting, we can establish two working groups, or maybe one, depending on how you guys want to try and tackle this, and then we have five years to try and get that done and integrated in and move ourselves up a tier, which would be great. That's all I have. We ended way earlier than I thought we would.

MS. CROWE: I think what I get out of that is if, in the meantime, anyone can start thinking of any resources that they could suggest, that would be a great way to start moving the goals forward, prior to the next meeting, when we outline more specific items. Okay, and, yes, that does move us forward.

MS. HOWINGTON: That was the whole afternoon.

MS. CROWE: Yes. There we go.

MS. HOWINGTON: That's good. Hopefully we'll end early on Wednesday. The next person to present is Paula. She is not feeling great right now, and so she's not even online. I think -- Can we do a fifteen-minute break, where we --

MS. CROWE: Sure. Do you want to go until 2.30? It's 2.13.

MS. HOWINGTON: Sounds good.

MS. CROWE: Okay. Let's take a break until 2.30, and then we'll circle back up and see what's next.

(Whereupon, a recess was taken.)

MS. CROWE: Okay, and so, before we get started here, real quick, Wilson has a question, a rollover from the earlier discussions.

DR. LANEY: Well, it's really more of a comment. Some of us were talking during the break there, and Laura, in particular, reminded me that the Navy has acoustic data, some of which might be shareable, and so I'll ask her to talk about that.

Then Laurent also had some thoughts, I think, of -- What we were thinking about was is it possible to use data derived from acoustic receivers to estimate densities of some of the organisms that might be of interest to us, and so I'll defer to Laura and Laurent to comment about that on the record.

MS. BUSCH: Thanks, Wilson. Yes, and so our Navy underwater shallow training range is off the coast of Jacksonville, Florida, and it goes from shallow water, and it breaks down over the shelf break, and we have 200-plus hydrophones, and so we collect data on that weekly, and it's unclassified data, and so it can be shared, and I mentioned to Wilson that we had to come up with a process to clear out all the snapping shrimp sounds, because they were overwhelming our recordings looking for marine mammals, and so, yes, that's definitely shareable.

DR. LANEY: So, Laura, I presume it would be beneficial if, perhaps working with Laurent, maybe we could come up with a list of organisms that produce sound for which we might be able to estimate density. I mean, would that be a good place to start, Laurent? First, because not all organisms produce noises that you can pick up with a hydrophone, I guess, and so my logic here is, if there are organisms out there that emit sound that we could pick up, then the question is, can you use those sounds to estimate densities of those organisms within the habitats of interest?

DR. CHERUBIN: Thank you for the question, Wilson. Right now, where the science is, it's almost -- It's not really possible to get density estimates from sound, right, but it's possible to get distribution of animals from sound, and most soniferous sound is produced in a frequency range that can be picked up by any hydrophone that exists at the moment, and so there's been some attempt to do that, I know with some of the grouper species, like the red hind in the Caribbean, where they try to estimate the increase in sound pressure level in regards to the amount of fish that is in the water.

I would say that some days it works, and some other days it doesn't, because what happens is that, even if more fish call, it doesn't get necessarily louder, and so it's hard to draw a correlation between density and sound pressure level. You see an increase, but it could be maybe the same fish is calling more, or there's more fish in the water. It's not necessarily, you know, strict like that, and so it's challenging, I would say.

DR. LANEY: Okay. Thank you both.

MS. BUSCH: I'll add to that, just real fast. A lot of the work that we've done, obviously, is looking for marine mammal, and trying to use passive acoustics for density, and they're finding that Q rate is what's important, knowing how often the animals call, but then what we've also found is that that Q rate is geographically tied as well, and so sometimes, if you have a Q rate for an animal, and that may be off the coast of California, but that Q rate isn't the same off the coast of Florida, and so that's one of the problems with using passive acoustics for density. It's knowing those Q rates and knowing them for, you know, seasonality, sex of the animal, and then where it is.

MS. CROWE: Okay. Any other comments on that? Laurent.

DR. CHERUBIN: Yes, one more thing. Then many of those sounds are unknown, and so we don't know what produces those sounds, and I would say now they'll detect just for fish sound, but they don't tell you what species it is. They know it's a fish, and they know it's a crustacean, but they can't tell you what species, and so we can identify -- Basically do a sort of what we call a clustering analysis, that will tell you there are so many different type of sounds, and species, but most of them are unknown.

DR. LANEY: So a follow-up, Madam Chair. So, Laurent, is it -- So that sounds like a need there. If we're going to use acoustics to try and estimate -- Well, even for distribution purposes, you have to know what species is making a particular noise. Is it possible in some of the marine aquaria -- Do they make noise while they're in captivity, and is it possible for you to use captive animals to identify the sonogram? I guess that's what you would be looking at of a particular species.

DR. CHERUBIN: Yes, it's possible, and a lot of the studies, the historical studies on fish sound, were actually made in captivity. Ladich, the scientist, has done a lot of studies like that, and there's actually an entire library, and I think that sits in Woods Hole, of the experiments and the sound recordings during those experiments in captivity that is available online.

We can go through and look at the spectrograms, look at the waveform of the signal, et cetera, to recognize the specific sound, but often what happens is the reason for the sound is sometimes different from what that reason would be in the natural world, and they may behave differently while producing the same sound, and so it’s -- When it comes to behavior, it's a different story, but we can definitely use that to identify the sound in nature, but I think, you know, most of the fish, the species, that have been studied were actually fisheries species, and so weakfish, trout, silver perch, and all of that species in the Mid-Atlantic, and then, of course, cod and those type of fish.

DR. LANEY: Yeah, and so it sounds like a lot of the cyanids have been studied.

DR. CHERUBIN: Yes.

DR. LANEY: Which makes sense.

MS. CROWE: Okay, and so we kind of moved through the agenda for today a little quicker than we anticipated, and so we're going to rearrange some of the presentations, so we make the best use of everyone's time, and so we appreciate Brendan and Avery for being willing to change their

schedule around and give their presentation this afternoon, and they are both online, and they're going to talk about offshore wind infrastructure coverage and the artificial reef footprint. I think Kathleen is giving you control, and you can go ahead when you're ready.

DR. RUNDE: Thanks, everyone, and so, while Avery is getting that screen-share going, I just want to thank the advisory panel for allowing me to invite myself and Avery to give this presentation. Avery is going to lead the presentation here, but, just to give a little background, and I'll let Avery introduce herself, but you all know me, because I'm on this AP, and I work a lot on offshore wind topics, and I had the pleasure of working with Avery on a past analysis about the footprint of artificial reefs in the United States

That will be touched on in this presentation as well, but this was an idea that we had to extend that analysis, to take a look at how much footprint the offshore wind infrastructure will likely cover in the coming decade or so, and so, with that, I'll toss it over to Avery.

DR. PAXTON: Thanks, Brendan. Can you double-check that you can hear me, please?

MS. CROWE: Yes, we can hear you.

DR. PAXTON: Great. Okay, and so thanks for that intro, Brendan, and let's see if my computer will work. There we go. So, as Brendan mentioned, the presentation today is couched in the idea of artificial structures, and we're all familiar with the phenomenon of increasing numbers of artificial structures in the world's oceans.

These can include offshore energy infrastructure, oil and gas infrastructure, aquaculture, and then this is one of my favorite examples. This is an aerial image, in the bottom-left, off the coast of Dubai, where each of these geometric constructs -- Those are human-made islands. Then there's also artificial reefs, and so one of the questions that Brendan and I, and a team of others, have had recently is what is the footprint, or the area of seafloor, that artificial structures cover in the United States, and, today, we're going to focus on offshore wind, but we're going to frame our results, or put them in context, of those from a prior analysis that our team conducted on the artificial reef seafloor footprint.

When we think of the footprint of offshore wind infrastructure in the U.S., here we have our idealized wind turbine. We have the turbine base. We have the apron of scour protection, and, for this analysis, we assumed monopile foundations, and there are obviously pros and cons of that assumption that we'll go into throughout the presentation today.

The type of footprint that we're talking about, there's multiple flavors. I'm showing you here, in red, the area that we refer to with particular footprints, and so this area in red here would be the turbine footprint on the seafloor. We could look at the scour protection footprint on the seafloor, or we could look at the combined footprint.

The other aspect that, especially for offshore wind, merits consideration is the footprint of the turbine throughout the water column, and so what Brendan and I did is we calculated these footprints for planned and, in some cases, being constructed, or already constructed, windfarms off the coast of the United States.

This map, in Panel A, gives you the full overview. If we break down each region according to colors here, with the rest of the subpanels, we can see that, off the coast of New England, there are multiple areas that have been leased in the ocean for offshore wind development. Each of these areas is one of the darker-colored polygons. If we look in the mid-Atlantic, see the same thing. If we look in our neck of the woods, in the South Atlantic, we can see several areas that have been leased, the Gulf, and then several areas in the Pacific as well.

As I mentioned, we assumed monopile foundations and. in the Pacific in particular, these calculations would certainly be better informed if they were with floating turbines, and it has been challenging for us to get information on the specifications for floating turbines, and so we're actively working on updating this.

The other thing to note here is that this analysis was completed in early September of this year, and so it does not, for example, yet include the Gulf of Maine, which many of you are familiar with, was recently leased.

What we did is we sourced from construction and operation plans and other literature, publicly available online information first, about the leased area of the seafloor, and so you can see here that the Southeast, compared to some of the other regions, has a relatively smaller area of the seafloor, in kilometers squared, that has been leased, with the Mid-Atlantic, followed by New England, coming in highest. If we then think about this in total, across all of the regions, we're looking at about 13,000 kilometers squared of area that's been leased for offshore energy, or, well, offshore wind specifically, which is about the size of the state of Connecticut.

Now, if we get into the nitty-gritty, this is where we really use the finer details in the construction and operation plans, which outline the envelope for the specifications of particular wind energy development projects, and so what we found -- I'm going to set this up. I'm going to show you the type of footprint that we're talking about, with the icons in the bottom right of each of the figures I'm about to show. Here, we're looking at the turbine seafloor footprint, and I'm going to show it by region, just like I did for the total leased area.

If we look at the regional values for this turbine seafloor footprint, we see that the Mid-Atlantic comes in highest, followed by New England, Pacific, Southeast, where we are, and then the Gulf of Mexico. One thing you'll note is that the shading of these bars is indicative of our calculation approach for estimating these footprints.

Some of them we refer to as measured, in which case the construction and operation plans had actual values associated with the planned or existing turbines. In other cases, this information was not provided, and so we used a data-driven approach to estimate what these footprints would be.

Especially for those who are NFL fans last night, based on the Commander's Hail Mary victory at the end, I think it's suitable for an analogy to think about this total area of the seafloor that the turbine bases themselves would cover, which is about 0.53 kilometers squared. With an analogy of U.S. football fields, it's about a hundred of them.

If we look at the scour protection seafloor footprint, we see the same relative trend by regions. Note the difference in the X-axis scale here. We're going up to about eight square kilometers, in the Mid-Atlantic, and you'll, again, see the Southeast here, with just over one kilometer squared.

In total, the scour protection seafloor footprint nationally would be about 3,300 U.S. football fields, or 18.1 square kilometers, and, if we look at the water column footprint, we're looking at just over six square kilometers. Again, the same regional trend, and if -- This analogy is a little bit more shaky, but, if you were to convert this into football fields, you're looking at about 1,200 United States football fields.

One of the things that Brendan and I wanted to do, when chatting with you all today, is to summarize some of these values specifically for the Southeast, and so we have here rows with particular lease or wind farm areas. We have the size of that wind energy area that has been leased, the number of turbines maximum, as per the construction and operation plans, or other plans at this point, and then how much that would be if we think about the structured footprint, which would be the turbine base plus the scour apron and the vertical footprint separately.

You can see that the Central Virginia Offshore Wind areas -- Those are the highest, in terms of their structured footprints in the Southeast U.S., and they also tend to have the highest number of turbines, which scales correctly, and so one of the things we wanted to do was to put these findings from our analysis of offshore wind footprint in the context of artificial reef footprints in the United States ocean, and this was an analysis that was co-led by a colleague of mine, D'amy Steward, who is now at NOAA as a Canals Fellow.

This was a massive project, that involved collaborations with state artificial reef managers, and others from academia and nonprofits, and what we did is we looked at the cover of artificial reefs in the U.S. ocean. What I'm showing you here is these are the centroids of areas zoned or permitted for artificial reefs.

What we did is we looked at the area that had been permitted, first of all, which is about 5,800 square kilometers. You'll notice the Southeast here in this orange color, and then, if we looked at the total of this, this 5,800 kilometers of permitted zones for artificial reefs, that's about the size of Delaware to Rhode Island. To put that in comparison, we're looking at nearly double the permitted area, or zoned area, for offshore wind energy through the wind energy areas that have been leased, or have been identified, and so that's about 13,000, again, for comparison.

If we look at the actual footprint of artificial reef structures on the seafloor, we see that these structures total just over nineteen square kilometers. You'll notice, again, the Southeast here, and, if we look at the entire United States, we're looking at about 3,600 U.S. football fields.

Now, to give that comparison lens, if we look at the offshore wind footprint, in solid here, versus the artificial reef seafloor footprint, in hashed, per region, we see some interesting trends emerge. We see that in New England, for example, the offshore wind footprint will likely be larger than that of artificial reefs, by quite a bit. The Mid-Atlantic, the same thing. The Gulf of Mexico, opposite.

The Southeast U.S., where we are, it looks like artificial reef footprint right now is higher than the projections for offshore wind footprint, and so, on a national scale, if we synthesize this just a little bit more, to put the numbers together, wind, by 2030, we estimate will be just shy of nineteen square kilometers, or about 3,400 football fields, whereas artificial reefs, as of 2020, when that analysis was wrapped up, are pretty much on par, right, and so it looks like the wind footprint is

about 0.96 times the artificial reef seafloor footprint, and, again, this part of the analysis right here, for the comparison, is seafloor only.

So, to wrap it up, the implications and take-homes, first, I think the major factor of surprise here, for Brendan and I, when we were going through this analysis, was that the seafloor footprint of offshore wind infrastructure will likely be similar to that of artificial reefs. This was surprising, to me personally, because of the temporal scale, wind over approximately a decade and artificial reefs for over a century.

In spatial scale, there are some similarities and some differences, of course. Oftentimes, with wind, it will be in a gridded fashion of turbine arrangements in a concentrated lease area, whereas artificial reefs can certainly be widespread in their location of their permitted zones, yet, within one of those permitted zones, you can certainly have them in a relatively concentrated configuration.

The leased area for offshore wind is over two-times greater than that of the artificial reef zones, and this seems to imply that the burgeoning offshore wind development in the U.S. will likely result in an unprecedented influx, and so that rate of introduction of artificial structures into the ocean, and this really confirms, and raises the ante, on needing to understand the ecological risks and benefits of offshore wind infrastructure installation, especially here in the Southeast, and so, with that, I will wrap up, and Brendan and I are happy to both field questions. I do want to thank multiple colleagues who contributed to these analyses, both for the offshore wind footprint and for the artificial reef footprint.

MS. CROWE: Thank you, Avery. That was great. A lot of good information, and we have some hands raised in the room, and so I'm going to start with Wilson.

DR. LANEY: Thank you for the presentation, Avery. It was very much appreciated. Perhaps the next logical question, and one I imagine you all are already thinking about, is what are the habitats that are there now that would be replaced by the structures that will be in place for wind turbines, and can we say a whole lot yet about the sorts of organisms that would be benefited, versus those that would lose? I mean, anytime we do anything in the water, there's always going to be winners and losers, usually, and so are you thinking about that, or have you already started looking at the types of habitats that would be displaced by the structures themselves?

DR. PAXTON: Yes, and, Brendan, do you want to answer that?

DR. RUNDE: Yes, sure. So, Wilson, in general, and I don't work for a wind developer, but, in general, the offshore wind infrastructure that we're talking about will displace sand habitats. For a number of reasons, it's not beneficial for offshore wind developers to build on anything other than sand.

There's their own time, effort, and money, and, also, there are, of course, EFH consultations, and environmental assessments, and things of that sort, that all must be completed when an offshore wind project is being leased and permitted, and so those hurdles -- They don't want to make it any more difficult for themselves to clear those things, and so I personally am not losing a whole lot of sleep over the habitat displacement. Certainly there will be winners and losers, but we're talking about sand habitats, which my observation is we've got a lot of.

DR. LANEY: Thanks, Brendan. I'm not -- Go ahead.

DR. PAXTON: Thanks. I was going to chime-in there, Wilson, with a slightly different perspective. While I agree with most of what Brendan said, I do still think, and NOAA Fisheries is working hard to try to understand how wind development, in some of these areas, may have cumulative effects throughout the ecosystem, and we're thinking about understanding how this may change connectivity, right, and how it may affect habitat displacement, or replacement, like you mentioned, and so I think there's a lot of unanswered questions there.

DR. LANEY: Yes, and the only comment I was going to make was, relative to there being, quote, a lot of sand out there, unquote, I think some of the communities that are engaged in beach nourishment, as it's euphemistically called, might have some dispute about that, but I get it. Yes, there is a lot of sand out there, and it's not necessarily where the beach communities would like for the sand to be.

I had a colleague, early in my career with the Fish and Wildlife Service, named David Rackley, who some of you may know. Dave was always concerned about the creatures that lived in the sand, which he felt, you know, got short shrift, from those of us who are recreational anglers in particular. There is a whole suite of fauna that is adapted for living in sand, and so those organisms do get displaced. Then I guess the winners would be the ones who like hard substrates on which to settle, or feed, or so forth and so on, and so, yes, I look forward to you all doing additional analysis to hopefully look at who the winners and losers would be in this exercise that we're engaging in.

DR. PAXTON: Definitely. I completely agree with you, Wilson, and one of the things we're thinking about is, I mean, invasive species, right, and facilitating the spread of invasive species with some of these, but I completely agree with you on the value of these sand habitats, especially off the coast of North Carolina. The shoals are a key area of concern with wind development.

DR. LANEY: Yes, and one of your and my favorite species, Atlantic sturgeon, I think are particularly associated, in some cases, with those sand shoals out there, and so that reminds me to ask you if you got all the data that you need for that modeling exercise that I know you're working on as well.

DR. PAXTON: We did. Thank you for helping point us in the right direction, and, yes, Lisa, who I believe is on the line, was able to help provide the rest of those data.

MS. CROWE: I saw David's hand and then Laurent.

MR. WEBB: Thank you. This panel has had some conversations about this in the past, and not only do the windmills themselves present structure, but there's a lot more structure with the transmission lines, and that's all on the bottom, and, in presentations we've received from BOEM in the past, most of these infrastructure fields have to be stabilized.

They can't just lay the cable on the bottom, and so they're talking about concrete mattresses, to keep trawlers from snagging them, and storms from moving around, and we had a discussion, in one of the meetings, about, well, what happens when you put this stuff on the bottom, and now

we're creating essential fish habitat, with soft corals, and hard corals, that start growing on the mattresses, and one of the huge differences, that jumps off the page, about an artificial reef, or one of these windfarms, is the windfarms are going to have to be decommissioned.

They have a lifespan, and so you put an artificial reef out there, and nature takes its own decommissioning process over time, which doesn't involve disrupting anything, but these things have to be dismantled, and removed, or at least in theory they have.

My concern was, and we brought this up at a couple of meetings ago, is in the transmission lines, and what are they? You know, what kind of insulation, what kind of chemicals, if any, are inside? What kind of materials, and metals, are used, and if we get to the point where, in the decommissioning, we don't want to take up all the concrete mattresses, because we have now created essential fish habitat, what's in there that's going to deteriorate over time, and maybe cause a huge ecological crisis?

I'm not suggesting I have any answers, but these are things that I think are critical that we get the answers to, because these things fail, and they have a lifespan, and they're going to have to be dismantled at some level, and so, when we put the stuff in the water, we're going to have all kinds of stuff growing around, and we're going to create new habitats, and then are we going to say we're going to make an exception, and we're going to destroy essential fish habitat, because it's artificial? These are pretty significant conversations I think we have to have at some point.

DR. PAXTON: Thanks, Dave. That's a really important point. I will say that, first of all, this analysis that Brendan and I presented did not include estimates of the seafloor footprint that would be occupied by transmission cable corridors or the portions of those that would be covered in concrete mattresses. The other thing I should say is that this does not include offshore substation infrastructure.

Then, as for the details of your question, that portion of exactly what the transmission cables are composed of, that is outside of my area of expertise, and so I'm going to hold on commenting on that portion, but I think there may be others on the line who are more familiar with that, who are welcome to chime in.

DR. RUNDE: If I can just add, and thanks again for the for the comment and question, David, that it is unknown the extent to which the transmission cables will be exposed and require mattressing. It's the prerogative of the developers to bury those cables. Generally, there's either a one meter, or a 1.5 meter, burial depth requirement, and, if they bury them, they don't need to put mattressing on them, and so they don't necessarily know exactly where they will have to be on the surface, and then mattressed, until that process is underway.

As I think most of the people in the room are aware, many of these projects are not yet at that stage, and so, once again, it was outside of our scope to quantify that, but I think the amount of mattressing on the seafloor will be very, very small in comparison to the amount of scour protection, that Avery covered in the presentation today, that will be around the base of the turbines themselves. That's where most of the seafloor structure will come into play, and you're absolutely right, David, that we did discuss the decommissioning process and what that might look like twenty-five or thirty years down the line.

I think everyone is sort of anxiously awaiting clarity on what may happen, or what may not happen, as far as getting these things out of the water when the time comes, and so, again, outside the scope of our analysis, but certainly very, very valid.

MS. CROWE: Laurent, go ahead.

DR. CHERUBIN: Hi, guys. My first question is about, when it comes to understand the downstream effects of those structures, right, and we've had artificial reefs in the water for, as you mentioned, more than a hundred years, and isn't there a lesson there to learn? I mean, I guess we have, you know, what the artificial reefs are providing is a baseline of basically the impact on the environment and the surroundings, and is this used in a way to sort of understand, or assess, what the turbine could do to the environment, because they act as well as an artificial reef?

DR. RUNDE: Thanks, Laurent. If I understand the question, you're asking if artificial reef science can be used as a sort of proxy for what we expect to happen with artificial -- I'm sorry, offshore wind infrastructure?

DR. CHERUBIN: That's right.

DR. RUNDE: I think, in many cases, yes, especially for the structures that are horizontal, or low relief, right, on the seafloor, and there are some analyses, some observational studies, underway, and I'm aware of one small experimental study with different scour protection materials, to take a look at what the successionary processes are around these structures.

I'll also point out that, in the Atlantic, there are very, very few structures that have full -- What I'll call full vertical extent, that extend from the seafloor to the surface, and so we know, from some of Avery's work, and she can expand on this if she chooses to, that the fish communities, in particular, around artificial structures that have high vertical extent tend to be different, and those ecosystem processes tend to be different, than those around artificial structures that have low vertical relief.

We're talking about a couple of thousand structures that extend from the seafloor to the surface, and so there's some information from, for example, the Gulf of Mexico, with oil and gas platforms, and from the North Sea in Europe, for offshore wind infrastructure, on how the ecosystem responds to these types of structures, but there isn't a whole lot for the South Atlantic, because there just aren't a lot of these structures. There's a couple of light towers, and things like that, but certainly not on the order of magnitude that we're talking about.

DR. CHERUBIN: Thank you.

MS. CROWE: I'm going to go Simen and then Wilson.

MR. KAALSTAD: Thank you. I was just curious, for a point of clarity, and so the footprint, in this demonstration, is sort of based on the size, or the area, of the physical structure, but I was wondering if you guys have sort of considered also that -- You know, that artificial reefs have a significantly greater structural complexity to them.

I mean, you mentioned the vertical aspect of the turbines, but I'm wondering if it's worth considering. You know, is this a one-to-one comparison, when artificial reefs sort of have that intention of providing value, or at least in the structural complexity sense, and if then -- You know, does the wind turbine provide that same value, if you're just going off of, you know, aerial coverage, or physical coverage? I guess my question is is it a valuable comparison, if it's just based on physical size. Thank you.

DR. PAXTON: Yes, and that's a great question, and I honestly don't know the answer. I think, to me, it certainly is still a valuable comparison, if we're thinking about footprint, but you hit the nail on the head that this doesn't consider the structural complexity, right, and we're scaling it down to seafloor footprint, and for wind turbines only, but not the artificial reefs, the water column vertical footprint, and so I think there is work that could be done to try to understand what the vertical relief is of some of these artificial structures.

That information isn't readily available, for most of the states, whereas footprint information for artificial structures, artificial reefs specifically, was readily available from states, largely because of habitat mapping, or, in some cases, estimations and knowledge of what those structures were, what their pre-sinking dimensions were, and so it's a fair, and I think important, question, and I think that's a key area of research need, is the way I see that, to understand.

Even going back to the previous question of if comparing artificial reefs is fair for offshore wind, given that, in many cases, they have a completely different structural configuration, and many other physical attributes. I think the most similar component, and this adds on what Brendan said earlier, would be equating artificial reefs to the scour protection around wind turbines, and, to echo what Brendan said, a majority of the wind turbine footprint was composed by that scour apron itself.

DR. RUNDE: Avery, if I can just chime-in, and also in response to Simen, and I don't want to get too circular with the two of us asking each other questions, but isn't it true that most artificial reefs in the United States are comprised of either concrete modules, or some type of rock, which are fairly analogous in terms of structural complexity, to what we're talking about with scour protection?

DR. PAXTON: Are you asking me?

DR. RUNDE: Yes.

MR. KAALSTAD: You were asking me, correct?

DR. PAXTON: Brendan, I'm pulling that up now, and, in the United States, most of the artificial reefs have been composed, yes, like you said, of concrete, or rock, in many cases.

MS. HOWINGTON: We're getting some heads shaking around the table. We are in disagreement with you, Avery.

DR. PAXTON: Okay. Well, here, and let me share my screen with you all.

DR. RUNDE: This should be fun.

DR. PAXTON: Hold on. I don't seem to be able to share my screen anymore, Kathleen. Can we change that? Okay, and so let's see here. Make another attendee presenter. Share screen. Getting there, folks. I promise. It's still not letting me do it.

MS. CROWE: We're going to let Matt weigh-in, while you all figure the screen out.

DR. PAXTON: Okay.

MR. KENWORTHY: Hi, Avery. This is Matt Kenworthy. Thanks for all this information and the presentation.

DR. PAXTON: Hi, Matt.

MR. KENWORTHY: I think what some are interested in the room about is, you know, in some places -- You know, I see Paul shaking his head about Georgia. There's a lot of, you know, sunken ships as the artificial reef structures, whereas other places might be more focused on, you know, concrete pipes, concrete rubble, bridge debris, and stuff like that, and it was either you or Brendan mentioned some of your research in the past showing some differences in community structure between low-profile and high-profile reefs, and so I think this might help the conversation.

It seems like my understanding of some of this offshore wind infrastructure is the footprint would be composed of a lot of rock, which might be more comparable to the low-profile nature of some of that research that you've done in the past, and so maybe you can speak a little bit more of the community differences, and ecosystem function, and differences between, you know, sunken ships, barges, tugboats, versus, you know, pipes, bridge rubble, things like that.

DR. PAXTON: Yes. Sure, Matt, and it's great to connect with you here, and so I'm going to answer your question by way of sharing this particular figure. This is from the paper that our team --

MS. HOWINGTON: We still cannot see your screen, and so just pause, real fast.

DR. PAXTON: Really?

MS. HOWINGTON: Yes.

MS. HOWINGTON: Bummer. Okay. Let's try again. It keeps popping up and then disappearing. Let's see. No one can see your screen. Thank you. No. No.

MS. HOWINGTON: We're about to see your pretty face.

DR. PAXTON: Yes, I noticed that, and I was like maybe I'm clicking the wrong thing. All right. Well, anyway, and so I don't know how to share my screen again.

MS. HOWINGTON: I'm taking control away. I'm going to share my screen.

DR. PAXTON: All right. Perfect.

MS. HOWINGTON: So we're done with that, and then I'm going to send it back to you, and, if it doesn't work, then I'm going to send it to Brendan.

DR. PAXTON: Okay, that sounds good. Okay, here we go. Show my screen. Can you see my screen now?

MS. HOWINGTON: We cannot.

DR. PAXTON: Okay. Brendan, can you pull up the 2024 paper?

DR. RUNDE: Yes. I've got it. I know what you want to share.

MS. HOWINGTON: All right. You're getting a prompt to share your screen, Brendan.

DR. PAXTON: Man. Sorry, everybody. I promise I know how to use the computer.

MS. HOWINGTON: All right, Brendan, and we can see your background.

DR. RUNDE: What about that?

MS. HOWINGTON: There you go.

DR. PAXTON: Perfect. Can you zoom-in to that Figure 3? So this is what I was talking about, Matt, and other folks, and so this is a national analysis. I think this part, that part "national" is key here. We're looking in kilometers squared, on the X-axis, which I think Brendan's view has cut off here, so that we can see the labels a little bit more.

We're looking at the footprint of concrete, in that top panel, metal, miscellaneous, which includes rock, as the first row, and unknown, and so the statement I made previously, that most of the artificial reefs are largely concrete, rock, and, in many cases -- Metal was the one I don't think I said. I can add up the bars here, at another point, but those are certainly far and away the most popular types of materials.

Matt, now getting back to your question, as far as differences in the fish communities that we have seen on low-relief artificial reefs, versus higher-relief, with those-low relief typically being concrete pipes, and the high-relief typically being large metal vessels, we do tend to see that there are oftentimes higher abundances of water-column-associated fish on the high-relief structures than the low relief structures. That's one of the big things we've seen.

We've also seen, right around the biogeographic transition zone, or a little bit south, I guess, depending on where your definition of that is -- In the Onslow Bay area, off of North Carolina, we've seen at fish at their climate range edge, so largely tropical, and some subtropical, species tend to have higher numbers on the artificial structures, rather than the natural structures.

One of the, I think, really exciting bodies of work that's coming out is led by Ryan Tharp, a PhD student at NC State University, working in collaboration with Jeff Buckel, his PhD advisor, and other folks from NOAA as well, and Ryan has tagged, and tracked, using acoustic telemetry,

multiple water-column-associated species, and more demersal species, on some of these artificial reefs, and he's seen pretty stark differences in their habitat utilization patterns.

I think there are quite a lot of differences that seem to be driven by, or at least correlated with, the vertical relief of these structures, and so I think, bringing it full circle, to me, the scour protection seems like -- If I had to guess, it would probably function similarly to some of those concrete structures. What I don't know, and don't have a good understanding of, and I don't think anybody does, is how, when you put a vertically extensive turbine base in the middle, how that may change the equation, and so I don't know. I don't really know, but I think it's an area of future inquiry.

DR. RUNDE: I'm just going to scroll to the top here, so people can see what document we're looking at and know who in their state they can lodge their complaints to. That last part was mostly a joke.

DR. PAXTON: I'll give you a slight laugh there.

MS. HOWINGTON: You're getting some giggles in here.

DR. PAXTON: Oh good, and so, Matt, did that answer your question?

MR. KENWORTHY: Yes, it certainly did. I think adding that context in, as some people are making notes in the room of, you know, there's a bunch of different structures out there that are being used for artificial reefs offshore, and I think providing a little bit more detail, and predictions, or lack of predictions, which is understood, on kind of what the response might be with these different types of structures is helpful, and I think different states use different approaches for what they want to target with their artificial reef structures, and it's good to be thinking about all the different scenarios and materials being used.

DR. PAXTON: Definitely, and then I'm happy to do additional calculations, if folks want, for the Southeast. We do have those data available, and those data are also open-access, for the most part, except for one state, where we are not able to publish locations, but that's outside of the Southeast.

DR. RUNDE: Folks, I'm going to quit sharing my screen, but I'm going to send this paper. I think maybe Kathleen already has it, but I'm going to send this PDF, so she can send it out to the AP.

MS. CROWE: Thank you, Brendan. Wilson has a comment.

DR. LANEY: Well, it's a comment and a question. I would not be true to my Fish and Wildlife Service career if I didn't ask, but what about the portions of the installations that are above the waterline? You know, there's air up there, right now, that's free and clear for flight by bats, birds, and butterflies, are the three things I usually think about when I think about wind turbines and possible impacts, and so has anybody actually looked at that? I'm guessing you're going to tell me that's beyond the scope of your investigation, since it focused on the sub, you know, water subsurface aspects of these installations, but is anybody looking at the aerial part of them?

DR. RUNDE: Way outside the scope.

MS. CROWE: Laurent, go ahead.

DR. CHERUBIN: Yes, and so there's a study that came out, not so long ago, and I don't remember where, and I can look for it, but it's about how they are now putting cameras on those turbines that actually take images every so often, and, using AI, they are able to recognize the presence of birds, and they stop the turbines during migration time, and so they identify migration time, stop the turbines when the birds are flying by, and then we stop them, and so this is -- I think it's a prototype somewhere in Europe, but there's more detail about it, but that's what I read recently.

DR. LANEY: Yes, and thank you, Laurent. I was -- I had read the same thing, probably. I was aware that that technology is coming into play now, and I -- You know, you would think, okay, these things are tall, skinny things, with propellers on them, and so they probably don't take up a large volume.

If we think about converting, you know, free and open cubic meters of air, to now solid things that things could run into, it's probably not very much, but I think the key thing is where they're located relative to those migration corridors that we're all interested in protecting, I think. I know that the Fish and Wildlife Service has done some modeling of those, but I think more in a terrestrial environment than in the open ocean environment, and so that may be an area that's productive for some future research.

MS. CROWE: Thanks, Wilson. Alex has something to add.

DR. SCHNEIDER: I was just going to add, for the interest in the bird species, those migration paths, known abundances of birds and bats, are considered in the sighting process of offshore wind, and a lot of the windfarms along the east coast -- You can find, in either the construction and operation plans, or in the terms and conditions of those leases and construction operation plans, requirements for monitoring of a variety of different bird species, and those reports associated with the various farms, and so airspace is definitely included just as much as the water space. Thank you.

MS. CROWE: Thanks, Alex. Do we have any other comments, or questions? Kathleen.

MS. HOWINGTON: Matt, go first.

MR. KENWORTHY: You can go.

MS. HOWINGTON: Mine is going to kind of lead us down a path.

MR. KENWORTHY: Hi, Avery. Matt Kenworthy again, with another question, and so this exercise that you and Brandon are working on is looking at just the structural footprint. What do we know now about kind of the functional footprint of artificial reef structures, and so kind of expanding beyond the physical structure itself.

You know, how much are they providing additional habitat, probably more for like migratory species, and that that might expand a little bit beyond just the structure itself, and, if that is a wide area of increased functional footprint, is there overlap, or potential for overlap, between these wind turbine structures, in these proposed wind turbine areas, or are they still going to operate kind of as isolated structures in the area? Does that make sense?

DR. PAXTON: Yes, and I lost you on the last sentence of -- Say the last sentence one more time for me.

MR. KENWORTHY: Well, I was wondering, if these artificial reefs kind of have a wide functional footprint, is there potential that they're overlapping in some aspect? I can't remember the proposed distances between turbines, but is there a potential that they're isolating, or operating in isolation, or is there potential that they're kind of creating one combined functional footprint?

DR. PAXTON: Oh, interesting. Okay, and so I have a few thoughts on that. That's a really solid question, and so, first of all, the turbines, when they're installed, will likely be in a grid pattern, and typically -- Alex, please correct me if I'm off on this, but I think typically they're about a nautical mile. I may have the wrong unit there apart, and I think that is dependent upon the fine-scale siting within a particular wind energy area for the turbines, but, Matt, the ecological component of what you brought up -- I think of a functional footprint, versus the actual footprint, is really key, and a colleague of mine, Ana Bugnot, and she's from Australia, and I can send this paper around afterwards, but, in 2021 Anna and her team published an article. It's called *Current and Projected Global Extent of Marine Built Structures and Wind Development*.

At the time they did their analysis, the U.S. was nascent, and so there wasn't much information there for the U.S., but what Ana and her team did is they calculated that physical footprint, but they also calculated almost a halo of influence, which, to me, is maybe equivalent to that functional footprint, and so I think there is a difference there.

I don't entirely know how I would go about calculating a functional footprint for some of these wind turbines, but I could imagine, if the functional footprint is large enough, you could have turbines within a grid configuration overlapping in functional footprint with one another.

I will say that, from some of our artificial reef work off the coast of North Carolina, we did look at fish abundance, and density, as you radiate away from an artificial structure, and what we found is that -- I think it was 97 percent of the fish were oftentimes within a ninety-meter radius from the structure, but certainly that does not account for the location of species that may be moving through the area, migratory corridors, things of that nature, and so a long-winded way of saying, yes, functional footprint is very valuable, and it’s something that I think folks need to be thinking of, and that certainly scales up to help us understand what the potential cumulative impacts may be.

MS. CROWE: Alex, did you --

DR. SCHNEIDER: I'll just quickly add to that, and you're right on the money with one nautical mile tends to be the baseline for separation between the turbines. That's generally for navigational safety. There are a few leases who have a smaller grid span, depending on the size of their turbines, but there are some researchers, at SMES, who are working on connectivity between turbines, and between windfarms, for fish utilization. I'm not sure how far along they are into their research, in terms of producing a data product, but they are a couple of years into their project.

Then it's becoming more and more popular, within these monitoring and reporting schemes, to look at before and after gradient designs, instead of before and after control impact designs, to get an idea at how communities and utilization changes as you move away from that turbine base.

DR. RUNDE: If I can just jump in with one further comment, in response to Matt's question, which I think is a great one, and the functional value of offshore wind infrastructure depends on your lens, and so it depends on your species, and the timescale over which you're looking, and so you can think of three different lenses for geography.

You can think of the turbine scale, the project scale, and then the regional, or project-to-project scale, and how those -- How a species perceives, or uses, those different structures as habitat depends on -- Like you can think of how a black sea bass would use it. It differs from how a greater amberjack would use it, and it differs from how a dolphinfish will use it, and then that changes whether you're thinking about day-to-day, or week-to-week, or season-to-season, and so there are just dozens, or more, study ideas that need to be conducted before we have any sort of evidence to make progress towards answering these questions, and so, Matt, I hope you have the purview to jump in with both feet on some of those things.

MR. KENWORTHY: I don't have anything else to add, but I appreciate the thought both of you applied to that. I haven't really thought about like that functional aspect of it, until kind of listening to this talk, and so I appreciate your reflections and expansion on that.

MS. CROWE: Wilson has a comment, or a question.

DR. LANEY: Yes, and I was just going to -- I mean, Matt's comments prompted me to think about functionality in a slightly different way, and that is, you know, again, and thinking back to the winners and losers characterization, is those species -- There will be a lot of species that I suppose use it for cover, the way we think of it in terrestrial ecosystems, you know, a crevice in the scour protection in which to hide.

There will be many other species that use it as foraging habitat, because they're going to come there looking for prey to consume. There will be a few maybe that use it for breeding habitat, you know, for reproduction, and so it would be interesting, Brendan and Avery, for somebody to take a look at the whole suite of species. I guess, and again, going back to the artificial reef discussion, you could get some idea of the suite of species that will use these structures based on what's already using existing artificial reef, or similar materials anyway, and perhaps characterize functionality from a prioritization standpoint, and that those that would use it for breeding, and reproduction, might benefit more than those that are just using it for cover and foraging habitat.

Those are the three main categories of functions that came to my mind, when I started thinking about functionality, and there are probably others that could be added to that list, but, again, as you said, Brendan, there's lots and lots of studies that could be done in the future to try and get at some of these functionality questions.

MS. CROWE: Thanks, Wilson. Anyone else have any comments, or questions? Kathleen.

MS. HOWINGTON: All right, and so this is more for the AP. Brendan and Avery, thank you so much for giving that talk. That was absolutely phenomenal. I have been a part of some of these wind infrastructure planning committees, and it has been very interesting to watch how much information goes into the leasing prior to being able to actually start building some of this

infrastructure, and so the first thing I did want to double check is the Central Atlantic call is not involved in this study, right, Avery, because that hasn't been leased yet?

I'm assuming no, but, when I'm writing these papers, and when I'm producing, or giving data to these groups, how do we protect the sand species? Now, one of the answers is easy. If it's tilefish EFH, we got that down of exclude this, but that is a sliver of deepwater, and most of the development doesn't occur in that area, and so, for instance, for the central Atlantic, the tilefish EFH was not in their call area, and so that wasn't something I could utilize to protect sand bottom.

I'm seeing heads nodding of how, when they're doing a call for comments, how, when they're doing these data analysis meetings, do, we as a group, protect not just the coral, but then also these sand areas that are EFH to the sand-dwelling species?

AP MEMBER: I have a question that I'm hoping someone in the room, and maybe you, Alex, knows the answer to. For the specific leases, to what scale of like habitat characterization, and like -- You know, at what scale are we seeing what is exactly there before any building begins?

DR. SCHNEIDER: Yes, and thanks. I can shed a little bit of light on that. It's an impressively fine-grain-level of detail for the benthic characterization of those leases. It spans a really wide range of data. They do a lot of geotechnical, geophysical, and benthic sampling, and so the developers have a really good understanding of the resources that are there. They do grab samples, optical videos, all sorts of different types of surveys. It's impressive, the campaigns they put on, and so very high level of detail, yes.

AP MEMBER: That's awesome, and it also makes a lot of sense. Then I guess the question that we would have is who is -- What is the biological knowledge of the folks that are looking at the -- Because presumably, if there's someone that has a background in ecosystem biology, and things like that, that part of the stamp of approval -- It's already gone through saying making sure that the things are protected, and it's not essential habitat, but do we know the answer to that?

Like, obviously, there's a lot of geology, and sediment expertise, that goes into that, but I'm assuming there's also a lot of biological expertise as well. Okay, and so that should make us feel better, right?

DR. SCHNEIDER: Hopefully.

MS. HOWINGTON: So, just giving the quick example of what I've been able to be a part of, we had a marine spatial planning meeting in March of this year, where it was state representatives, and researchers from all over, and it was a two-day workshop, where all we did was they would pull up -- Basically, before the meeting even started, they did a Google search of what fish live here, what Army bases are in here, what are the transits, where are the fishermen, and they would pull up that, all right, and so this is what military infrastructure we have in here, and, almost instantly, four or five hands would go up and say, nope, you missed spots, and stuff, and they would fill in the gaps.

By the end of it, we had sticky pages all over every wall of here's all the data you've missed, and here's all the people you need to contact. All of that then went into when BOEM released their central Atlantic call for comments. One of those things was an Excel spreadsheet of this is the

information we're looking at, and so I can actually pull that up for you, and show you where to find it, where you can see all of the information that's getting integrated in, what years it is, who their contact is, where they're pulling it from.

That we then commented on and said, you're missing these pieces, and you excluded this, and you need to include this, and so there's a lot of information that goes into leasing these. I will say, I don't know how much, for the call for comments, and this is a question more for you, for Alex, of -- Like one of our recommendations was, anytime there's a coral HAPC, or a known coral location, known artificial reef, to give a boundary, make certain that it was safe, that it's not going to have a sediment plume. How powerful is that recommendation? Does that get taken into account, or is that like, oh, yeah, that's neat?

DR. SCHNEIDER: Yes, those calls for comment from the public are definitely considered. The extent to which they're considered can vary, based off of the quality of comment that's given. If you, you know, submit a comment that says, hey, we really like this area, and don't develop here, that might be weighted less than, you know, a full here's the data, and this is what's being used here, things like that, but, when we get comprehensive letters from various entities, whether it be at the call stage, at the leasing stage, those are definitely taken into consideration.

If you're curious to the extent that they might be looked at, I would recommend taking a look at the difference between the potential sale notice and the final sale notice for the leases in the Gulf of Maine. They show a pretty substantial reduction in acreage by lease for a variety of different reasons, but all of those changes came from the public comments that came from the potential sale notice, and so those comments do not go unread, and they do not go unresponded to, and they're definitely heavily considered by both subject matter experts at BOEM and then the BOEM leadership.

MS. HOWINGTON: Then I return to my initial question of how do we protect sand species during these? Is there a sentence that, in future letters, I can say, during your surveys for this, if you see an abundance of, then avoid that area, something like that?

AP MEMBER: I don't have a recommendation, but this is more of a question. Are you focusing mostly on the sand, and fauna, or what is present there, or are you thinking about the sand as a functional habitat in general?

MS. HOWINGTON: Functional habitat.

AP MEMBER: Because, when I hear that question in this topic, I'm thinking more about the sand areas, corridors for life history, you know, migration of species from inshore to offshore habitats, and that's the first thing that comes to mind, is where is an appropriate place to apply protections for, you know, transitional habitat from juvenile and early life stages to adult habitats and either artificial or natural structures offshore and beyond the proposed leasing areas, and I think that is coming through, you know, tagging studies, you know, various tagging studies that are being done.

I know there's been a lot on different species. I'm not the expert in that, and so I'll defer to others, but that's the first kind of functional -- Or protection for, you know, function of the bare sand habitat that I would think to be a priority. I can't speak much to what the end fauna and, you know, potential prey species that are in there, and so I'll defer to others on that.

DR. CHERUBIN: Yes, and just a quick comment. I mean, we have something on beach re-nourishment, right?

MS. CROWE: Yes.

DR. CHERUBIN: So we could use the same sort of like policies, or criteria, to address that in that policy.

MS. CROWE: Yes, and I completely agree with Laurent, and I had just kind of elbowed Kathleen and said the same thing, that we need to look back at our beach nourishment policy that Cindy and others worked so hard to revise recently, as far as the end fauna and potential prey species that would be in those sand areas. Wilson.

DR. LANEY: So, to Matt's point, and Laurent's point, and Kathleen's point, one of the first things I try and think of is, okay, who's living there, and what are they doing, and going back to the functional things we just talked about. Some of them, you know, live in the sand. They are -- The sand is also not only their home, but it's also their foraging habitat, and I'm thinking about lettered olives, for example, or horse conchs, or whelks.

There's a whelk fishery, and not under council jurisdiction, but there's a whelk fishery out there, and those animals live largely in sandy areas, and then there are other more highly-mobile animals that are preying on those same macrobenthos that live within the sand system.

Again, it's another complicated thing, as to, you know, how you protect them. In this case, I think Alex has made the point that BOEM does an extremely detailed analysis of what's there, and what the potential impacts are, and so, ultimately, I guess it comes down to a societal decision about whether, you know, sustainable wind energy is worth more than those animals that live in the sand, and depend on sand as a habitat, or those animals that feed upon the sand as a habitat.

I mean, in the ultimate analysis, at least if that's the way the Corps of Engineers analytical system works, if it's in the public interest, it may get done, regardless of what the ecological impact of it is, and so the short answer is I don't know. I mean, you know, I think the more we understand about who's living there, and who's dependent on that habitat, then the better informed a decision that we could make. That's where I would go with it, I guess.

MS. HOWINGTON: Okay, and so I know we just -- Sorry.

MR. WHITAKER: I'm having a difficult time getting my arms around this, but, you know, I have the opinion that, without dealing with our energy problems, we're going to have a whole lot more trouble than anything that we can talk about in terms of impacts to sand habitat, but, with regard to sand habitat, I would like to know, is all sand habitat the same?

Certainly in corridors, it's different, and probably more valuable than other areas, but is it -- What's the variability in the sand, and the infauna that's in that sand, and is some more particularly valuable than others? I know we trawl for rock shrimp offshore in South Carolina, on twenty-two fathoms,

or fifteen fathoms, of sand bottom pretty much, and they're very spotty. Scallops are very spotty about where they're at.

There are a number of species that inhabit sand bottoms that are sort of patchy in the distribution, and so, you know, I would like to know, and hat is the percent of actual footprint of sand habitat? What is the percent of that by region? Is it 1 percent, 2 percent, 50 percent? In other words, sort of -- I don't want us, as a society, to stop something that's very, very important to mankind, based on something that's only 0.5 percent of the impact on that sand bottom, if you understand what I'm saying. I may be a voice in the wilderness here, but I'm very much in favor of taking the greater view of this. Thank you.

DR. LANEY: I think you ask a couple of very excellent questions, David, and my response to your question about whether or not sand is sand is probably not, and the reason I would say that is, and Avery may want to speak to this, the data that we derived on Atlantic sturgeon, during the cooperative winter tagging cruises, revealed some sturgeon hotspots out there, and one of the things I know about sturgeon is that they do forage in sand habitats.

They have this really cool suctorial mouth, that's like a vacuum cleaner, and they can suck mud shrimp, for example, right out of their burrows. I have to acknowledge the National Marine Fisheries Service, too. Lisa Wickliffe, and Fritz Rohde, and Ken Riley, and others, used all of our Atlantic sturgeon data to produce this really neat heatmap that's in that 2019 publication that most of us around this table are familiar with, and so thanks to them for doing that.

You can clearly see, on that map, that there are these areas of concentration, and there were other such areas identified off the Mid-Atlantic, and New England, areas as well, by other researchers, and we included all those in the ASMFC's Fish Habitat of Concern designation for Atlantic sturgeon.

I would say, at least based on the data that we have in hand, one sand area is probably not the same as another sand area, at least as far as an Atlantic sturgeon is concerned for foraging purposes, and then there was another point I was going to make, which has escaped me now while I was talking about Atlantic sturgeon, but Avery is currently working on a model for Atlantic sturgeon distribution offshore, and she may want to comment on -- I know the other point I was going to make.

The data, and how much sand is out there, and I think it's the USGS, and we had a student at East Carolina University who looked at our entire cooperative winter tagging time series of data, and not just for striped bass and Atlantic sturgeon, but for every other species that we encountered when we were using the trawls out there, and so there is a database that shows the substrate types offshore, and maybe Alex could speak to that too. I think USGS did that work, and, as she pointed out, each of the individual wind lease areas has that work ongoing as well, and so there's a lot of detailed information out there, and somebody, and not me, but somebody could probably answer the question that you posed as to how much sand is out there.

MS. CROWE: Avery, I see you have your hand up if you want to go ahead.

MS. HOWINGTON: She's an organizer now, and she can unmute whenever she wants. We cannot hear you Avery, but you are unmuted.

DR. PAXTON: Yes. Testing, can you hear me?

MS. HOWINGTON: We can hear you now.

DR. PAXTON: Oh good. Brendan was asking if I wanted his headset, since we're in the same building, and so I wanted to say, for the sturgeon data, so Wilson is correct. We have been working with sturgeon subject matter experts, to incorporate data from fisheries-independent surveys, about 1,600 observations of sturgeon, fisheries-dependent data, with about 4,300 observations, and electronic tagging data, with about 2,000 observations.

We've developed a maximum entropy model to predict areas of high sturgeon habitat suitability, and that will be provided to BOEM, from NMFS, as one of the data layers that NMFS is providing to help inform the overall spatial suitability modeling efforts for offshore wind in the Central Atlantic 2 call area.

The other thing I wanted to say, and this goes back to part of a prior conversation, that I think Matt and others had brought up, thinking about especially important sand habitats, and the concept of migratory corridors, and I wanted to flag for folks that, just like SAFMC submitted public comments in response to BOEM's call for information for Central Atlantic 2 call area, NMFS also submitted a package.

That's now part of the public record, and one of our recommendations to BOEM was that migratory corridors, extending out from the North Carolina shoals in particular, and so Diamond Shoals, Lookout Shoals, Frying Pan Shoals, at biogeographic breaks, be removed from consideration for offshore wind development, based on the rationale that they provide migratory corridors, just like Matt said, for many species, and that wind development in those areas may create a barrier to migration, and so I wanted to flag that as a contribution to part of this discussion related to sand, related to migratory corridors, and then the previous sturgeon piece, and so I hope that's helpful information.

MS. CROWE: That is helpful information, Avery. Thank you. Alex, did you have something to add?

DR. SCHNEIDER: Yes, and I was just going to add a point, going back to the conversation about sand. Based off of both BOEM and NOAA benthic habitat mapping guidelines that are provided to the developers, one of the data layers the developer produces is based on the CMECS classification, which I just had to re-familiarize myself with that acronym, but it's the Coastal Marine Ecological Classification Standard, and, just as an example, they have probably at least four, that I can think about at the top of my head, different types of sand classifications, medium sand, coarse sand, fine sand, and combinations of those as well. The question of which sand is the most valuable to protect, understanding the language that the developers use, is definitely valuable in pinpointing those locations.

MS. CROWE: Thank you. Scott.

MR. KATHEY: So we talked a little bit about this at the last advisory panel meeting, and, in those discussions, we were told essentially that the assessment of the existing habitat is usually done in

a six-month, to maybe up to two-year, period of characterizing the habitat that's going to be impacted.

The projects are going to last thirty years, generally, and then the question is going to come of what do we do at the end? Do we leave that material there, because now it's been encrusted, and it's been studied for thirty years, and so, when you get to the end of that thirty-year process, you're going to have thirty years of very fine-grain data on the new introduced habitat and all the benefits of it.

You'll have -- You'll be stacking that up against six months, to maybe two years, of cursory review of the existing habitat that was there before, and then you're going to make a management decision. It's going to be heavily weighted toward leaving that infrastructure there, simply because there's going to be a data bias, a tremendous data bias, towards that, unless the proponent of the project is also required to study the surrounding sand habitat with the same intensity as they have the hardened structures that have been placed there.

You had asked the question, Kathleen, of what are some recommendations we could make, and I think that should be factored in. If you really want a fair analysis, at the end of this, as to how it's been impacted over time, both habitats need to be studied, and not just the one that's favored, because it will be favored, if it's installed, if there's been a policy decision to do that. So, for a fair analysis at the end of the process, I think they both need to have the same level of attention, so that we know what we're dealing with and can make a much more informed decision.

Another thing that concerns me is, if you've made that policy decision, that this is good for the public in the long run, you know, we need the energy, whatever, and that decision's made, and there's winners and losers, as Wilson was saying before, and there always are in these things, but what are we promoting that we don't want to promote as well, and I'm thinking invasives.

You could look at the habitat itself as an invasive. If we're creating this new habitat, in what was a monoculture, and now you're creating, you know, rugosity, and you're introducing something that wasn't there before, it's going to change the nature of that local ecosystem, and so we're -- We're talking about spacing these out, you know, a nautical mile apart, because of navigation, and, well, okay, and so, if we have shipping coming through, and they're dumping their ballast, what used to be a monoculture, a sand monoculture, any organisms, invasive organisms, that are being introduced from that ballast water would normally not have any hard substrate to attach to, but now they do.

So, after thirty years, you could have created a whole new list of species there that weren't ever there before, and you really don't want them there, but they've now taken hold, and you're not going to eradicate them, and how much analysis goes into that?

I think these are questions that should be asked on the front end, rather than us asking them on the back end of what happened, and we should be looking at what could happen as well, and what's the likelihood of that, and what would the long-term impacts of that be, because, if it's a monoculture of sand, it's almost like a defensive barrier against certain invasives, but, once we've set up the stepping stones a mile apart, then that could change the equation.

MS. CROWE: I think that's a great point. Anybody have any comments on that? Matt.

MR. KENWORTHY: Not a comment to that. I think that's a very fair point, and I appreciate you bringing that up, but I was going to go back. It's probably a question for Wilson. I don't know if Lauren's still on the line or not, but are there sand habitat, benthic organisms, incorporated into the food web model?

DR. LANEY: If Lauren is online, I would defer to her on that, but I just, real quickly, to prime the pump, so to speak, I think the answer is yes, because I know sand eels, in particular, are a very important prey item, and maybe more so in the Northeast than here in the South Atlantic, but I think the answer is yes, but I'll defer to Lauren.

MS. HOWINGTON: Lauren, go ahead.

MS. GENTRY: Thanks for the question. Yes, in fact, there are. They're not broken out into their own group. Mostly, in these ecosystem models, we break them out by water column habitat, and so benthic versus pelagic, and then their trophic associations, and so either piscivores, invertivores, and there's another one that I'm not remembering right now, but we do, in fact, have infaunal crustaceans, I think polychaete worms, ad other things like that, and so, yes, those are included in the model. Maybe not all together, but they are there.

MR. KENWORTHY: So I guess, in connection to the questions you were asking earlier, Kathleen, about how to evaluate the sand value, I don't know if the answer's in there, but a deep dive into the food web, and connections to those various organisms that are providing good food web connectivity, might be something of interest to explore. I'm not saying with expertise that there's a definitive connection there, but it could be of interest.

MS. CROWE: Paul, yes, go ahead.

MR. MEDDERS: Thank you. I'm going to parse out what Scott said a little bit, maybe, and maybe I misunderstood Scott, and so, if I did, I apologize in advance, but the use of the word “invasive”, if you mean that a species is going to come that is outcompeting, and non-native, and all of those things invasive, that's a fair assessment, but, as a guy that builds artificial reefs, and I read about some of the studies where it’s thinking are artificial reefs having invasives move around, and it may just be the term is the wrong term. It may not be that it's invasive.

It may be that climate change is happening, and things are moving. I was at a meeting, the other day, and, actually, Matt was there too, and they were talking about the fact that we have mangroves in Georgia now, and everybody is making a big deal out of it, but the mangroves don't know what the Georgia line is. They know what the temperature of the -- Or whatever makes mangroves move around, and those folks that are excited about the movement of mangroves were real careful to want to make sure the term wasn't used that those mangroves are invasive, meaning that we want to go out and kill them, like we do something that truly is invasive, right, so we don't get the public upset about it.

So that -- I can respect that thought, if there legitimately is something coming in, like a pink barnacle or something, and those new locations are allowing it to bounce to where it wasn't, and then that's a problem, but, if it's just that fish species that are maybe expanding their range, or maybe naturally there are moving around, then that's not a problem. That feels a lot like what are

-- This is Paul's opinion now, but that that's what we do in artificial reefs, what we're trying to accomplish, and so, if I misheard you, but I just wanted to clarify that.

MR. KATHEY: Yes, and so I think we're not talking about artificial reefs that are propagating species that are already here. We're not talking about range expansion. We're talking about invasive species that are now displacing natives, and disrupting the natural ecology of the area, and so that's how I would define it.

MR. MEDDERS: So, that's fair. If that's allowing them to jump along, I would go along with that, but it's --

MR. KATHEY: I think a lot of these species are particularly coming in on container ships from Asia, and they discharge a ballast, and you have these species show up. I mean, I worked for Monterey Bay National Marine Sanctuary for twenty-eight years, on the west coast, and San Francisco Bay is gone. I mean, so many invasives have taken hold in that bay, from the ballast water from those ships discharging into the bay, and it's a shallow bay, and they'll never turn the tide on that.

I mean, they've taken hold there, and it's almost impossible to turn that back around, and so that's the kind of thing. That's one thing that we saw on the west coast, was you've got to prevent it, because, once they get a toehold, if there's no natural predators to them here, then it's almost impossible to reverse it, and they just continue to propagate.

MS. CROWE: Wilson.

DR. WILSON: So I just wanted to thank Scott for expanding my horizons. I like that metaphor about thinking of, you know, hard substrate as an invasive habitat within a monoculture of sand, which I think is kind of legitimate to think about it that way, and then, if you think about it that way, it goes back to the winners and losers discussion.

There's going to be some native species that are winners, because you're providing that hard substrate for settlement, and foraging, and possible reproduction, but you also, as he noted, provide that same substrate for potential true invasive alien species, you know, non-native species coming in from somewhere else, in ballast water that before wouldn't have survived, because there wasn't a habitat for them to survive on, and no, there is.

MR. KATHEY: Right. That’s an introduced species that becomes an invasive.

DR. LANEY: Yes.

MR. KATHEY: I mean, because it could be introduced, but, if it can't propagate, it just dies out, but, if it can, now you've got an invasive.

DR. LANEY: Exactly, yes, and so I hadn't thought about that, thought about it from that angle, and so that's great. Thank you for sharing that, and the one that I can think of, Paul, that I know we talked about a long time ago, within this advisory panel, is that orange cup coral, or something like that. That is one that came in that could possibly, and I don't know -- I don't remember what

the range of it was, but that's one that could possibly, you know, take advantage of hard structure being put in these sandy areas.

MR. KATHEY: Within Gray's Reef National Marine Sanctuary, the only place we've seen orange cup coral was on the, ironically, the NOAA data buoy, because it's the only hard structure. Well, you've got -- We do have live bottom reef down there, but, at the surface, where this stuff was introduced, you know, it's a stationary hard surface for it to attach to.

MR. MEDDERS: I think the point you made, Wilson, was more that we're using the word "invasive" when you go from sand to some hard structure. That's where -- I get something coming in that really shouldn't be. That's the one where -- Because now we're applying our value to do we think sand is more important than artificial reef, or hardened structure, or whatever, and we do that all the time.

We always manage for whatever thing is most important to whatever you're managing, I guess, and I don't know, and that's a legitimate concern, and so I think that word, the word "invasive", in the sense of it was sand, and now we've put some rocks here, to armor something, and some things grew on it, and it is invading, by the definition, but it's not the way we use "invasive" in the sense of an invasive species, I think. I guess that's where my brain was kind of --

MR. KATHEY: I think it'd be more fair to say it's introduced, because it is. It's introduced.

MR. MEDDERS: It changes the ecosystem.

MR. KATHEY: Right, and whether it's invasive remains to be seen.

MR. MEDDERS: But you're right, and we went through that. We had pink barnacles, and, I mean, we all had them, but we had pink barnacles, and we had a lot of concerns about pink barnacles, and we really thought it was really bad, and something shifted, and we still see them, but not like we did. It's a weird thing, but, yes, there is certainly those concerns of stuff coming down those ships, and I totally agree with that. That's a bad thing, yes.

MS. CROWE: Okay. I'm going to jump online for a second. Paula has her hand up, and so, Paula, you can go ahead.

MS. HOWINGTON: Paula, you're self-muted. If you're talking, we can't hear you.

MS. KEENER: I am so sorry. It's the cold medicine, and so I hope to be there with you guys tomorrow. So, anyway, great discussions that I've heard today. Going back to the issue of soft bottom sand habitats, I started thinking about the council's beach renourishment policy, and I've been looking through that. I wonder if the Corps, or any other entity, has done studies looking at what the effect of pulling sand from one site to another. I have no idea what type of research, or preliminary work, goes on there from looking at protection of the sand habitat itself before it's put on the beach.

MS. CROWE: So, Paula, I'm going to jump in and just say that, at DNR, for years and years, we did environmental impact studies on dredge borrow areas, looking at benthos and the impacts of removing the sediment and placing it on the beach, and how long it took for the borrow area to

recover, and it is found to recover pretty quickly, depending on the sediment characteristics, and, you know, in relation to that, what organisms move into that sediment type.

I was actually just commenting, with the mic off, to Kathleen that, although these conversations we're having are great, and we need to look at the sand, and what's living in the sand, and what prey items those are, and what fish species are utilizing those prey items, one of the issues we run into, on the state side with stuff like that, is getting a permit applicant to be required to monitor the sediment in order to get that data, and so I guess the short answer to that is I personally don't know how much data there is available, other than some historical studies, but it would be interesting to know if some other states had similar studies and any data that they could share on that.

MS. KEENER: Yes. Thank you. Agreed.

MS. CROWE: Laurent and then Wilson.

DR. CHERUBIN: Yes, and so we heard about, you know, the potential for introducing new species that may find wind turbine arrays as a good habitat for them, right, and so it begs the question as whether we should have also, in our policies, some statement about discharge of ballast water away from those areas, to prevent those events. I mean, we have to think upstream, if I may say, right, and, if we don't want that problem to happen, because we can't fix it, obviously, once it starts, but we can prevent it from happening. Maybe we should think about policies that would force those ships to discharge away from those areas, knowing the oceanographic conditions, so that we know that dispersion won't take that water back to those sites, but take it away.

MS. HOWINGTON: I think the issue you run into there is that our policies are used for EFH consultations. I don't think release of ballast water is going to spur on an EFH consultation, but we used to put it in there as a recommendation. I just don't know how it would then be communicated to captains of these ships that this is something that you need to do, and I don't know how -- I mean, as a Habitat AP, I don't think we have another way of communicating that.

DR. CHERUBIN: But there should be areas that are prohibited to discharge, right? There are, and so you mentioned EFH, and there's a designation of EFH for those turbine habitats, and then that should help. Maybe my view is very simplified, but --

MS. CROWE: Wilson, did you have a comment?

DR. LANEY: Yes, and I certainly think we should take a look at the beach nourishment policy, for sure, to see if we get any ideas from that, but the one thing I guess I would note, or at least the perception I have, is that that suite of macrobenthos that live in the surf zone, or the swash zone, is probably somewhat different than the macrofaunal assemblage that we're talking about offshore.

Maybe Avery can shed some light on whether or not there's a body of literature that deals on, you know, who lives in the sand, and what they're doing out there, and who's eating them and all that sort of thing. I'm guessing that there's probably a good bit of difference between the offshore subtidal sand habitats, especially those that are further offshore, and the community that we were thinking about trying to protect with our beach nourishment policy. That's one thought that comes to mind.

The other thought is, again, more related to our previous discussion with David Whitaker about, you know, sand not being sand, and there are different types of sand, and looking at the distribution, is, you know, all sorts of questions come to mind, like what proportion of sand habitat do you need to maintain a healthy and sustainable community offshore?

I think we start to get into ecosystem design considerations, and ecosystem-based management considerations, and, Alex, are those considered in the BOEM review process? I mean, is anybody talking about ecosystem-based management, and how that needs to be integrated into turbine installations as well as other areas offshore?

DR. SCHNEIDER: The environmental impact statements that go along with a construction and operation plan for a lease definitely cover all aspects of ecosystems, including invasive species are included as an impact factor in those environmental impact statements. A lot of the leases also have monitoring of invasive species, whether that be at the benthic level or targeted invasives, depending on the lease. Like the Virginia offshore wind farm, for example, has a term and condition in their lease about monitoring for lionfish at their site.

All of those ecosystem-level factors are considered. To the extent that they're integrated, I can't necessarily speak to that. As I mentioned, I'm in the Office of Renewable Energy Programs, but BOEM also does have a Marine Minerals Division that works on sand resources in the outer continental shelf, specifically including a sand inventory, I believe, and so, if you're interested in those resources, those are located on the BOEM website, under the Marine Minerals Division. I can't speak to them myself, but I can put you in contact with people, if you are more interested in those.

MS. CROWE: Okay, great conversation. I think we got a lot of food for thought, and regular food.

MS. HOWINGTON: Good timing.

MS. CROWE: Yes. Do you want to --

MS. HOWINGTON: All right, and so do we have any other comments? That was a great conversation, and is there anything else that we want to add?

DR. RUNDE: Kathleen, this is Brendan. Can I throw one more thing on the table, that hopefully won't derail us too much?

MS. HOWINGTON: Sounds great.

DR. RUNDE: Yes and so, just on the topic of how much seafloor, in terms of percentage of seafloor out there, will be covered by offshore wind, and I can provide citations for this, but the -- So, with artificial reefs, the actual footprint of hard structures, from the paper that I shared with Kathleen, and she can share with the rest of you, the actual percentage of continental shelf footprint that's covered by hard structures, from artificial reefs in the United States, is around 0.01 percent, and so that's 1 percent of 1 percent.

We saw, from the presentation that Avery delivered a little while ago, that the offshore wind footprint will be right around the same order of magnitude, or a little less, actually, than artificial reefs in the Southeast, and so we're looking at, again, still way, way less than 1 percent of the continental shelf.

For reference, also in that paper is a citation for a different paper that shows that the extent of natural reefs in the Southeast is around 3 percent of the continental shelf, and so what's left is primarily sand habitat, and, once again, I'm not trying to derail us and talk about this sand versus that sand, but, when we're thinking about the actual conversion of seafloor, from what it is now to what it will be when offshore wind infrastructure is there, it is a tiny fraction of what is out there, and so, yes, a caveat here and there, but, yes, I just wanted to put that out there. Thank you.

MS. CROWE: That is a good point. Thank you, Brendan. Scott has one more comment.

MR. KATHEY: Laurent brought up the idea of having ships not discharge their ballast near, you know, a windfarm, and, while we could not enforce that under EFH, or Magnuson, against vessels, the U.S. EPA enforces the Ocean Dumping Act, and they could potentially -- It would have to be a rulemaking from EPA, but do that for certain areas, and so that would have to be a coordinated effort between NOAA and EPA for that kind of thing, but they could, because EPA, and the Ocean Dumping Act, even regulates the discharge of cremated remains under that, and so, when you're down to that small of a discharge, compared to potential invasives, that's the level at which they go to.

MS. HOWINGTON: So then, I love that idea, and who would be a contact to try and get that ball rolling?

MR. KATHEY: I know, on the West Coast, I worked with an individual for twenty-five years who that -- They kind of rode herd over Ocean Dumping Act regulations, and so it would just be finding that their counterpart here on the East Coast.

MS. HOWINGTON: Okay. All right. So then, for action items, which we don't have a lot from this conversation, but I do think it has been amazing, and maybe adding the corridor section to wind policy may not be the most efficient way of doing that. Maybe an action item can be staff tries to identify an EPA contact to -- Okay. Tries to find EPA contact for east coast to initiate conversation about ballast water dumping and windfarms. Cool.

MR. KATHEY: I would just like to add that, even if you had a regulation like that, if ships are in peril, if they're in a bad storm and they need to lighten their ballast, they're going to discharge, and so it won't matter if they're in a restriction zone or not, and no court in the land is probably going to take them to task over that, if their vessels in peril.

Now, they need to be able to demonstrate that, but there could be instances, but we're talking about volume here too, and we're talking about, you know, the right amount of volume of introduced water with invasives in it and the right conditions. I mean, all these things have to kind of come together.

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

MR. KATHEY: Right. Right. Exactly, but it would at least reduce the chances, if you had that kind of a regime in place.

MS. HOWINGTON: All right, and so then the other action item I have out of this is to relook at the beach nourishment policy, to add in recommendations for sand protection, monitoring, and I have movement in here. I don't know why I put that in there. That was from our conversation. Does anyone want to help me wordsmith that, because I would love it if you would.

MS. CROWE: Scott, I think you had made some comments about pre-windfarm data, something along those lines. I don't know if you want to add something about that.

MR. KATHEY: So you said you had movement.

MS. HOWINGTON: Yes. All right. So, if you look up there, I'm going to zoom-in, real fast, so we can wordsmith this as a recommendation. All right. Look at the beach nourishment policy to identify -- Or to require developers to identify pre-windfarm data on surrounding sand habitat.

MS. CROWE: I think longer-term. Scott, maybe you can help us pull those words together.

MS. HOWINGTON: Yes. Help us out.

MS. CROWE: Longer-term monitoring on surrounding habitat, so you have a more robust baseline data set, something along those lines.

MR. KATHEY: Right, and I'm not sure how beach nourishment came in there, because I was speaking more toward the windfarms.

MS. CROWE: I think it was just because we had some language similar to that in the beach nourishment policy.

MS. HOWINGTON: Yes.

MR. KATHEY: Okay, and so I was basically saying that so that you can have an equal balance of data between the thirty years of study on the introduced habitat with thirty years of study on the native habitat that was there before. You know, you're basically going to have to get out away from the project area, but, that way, when policy managers thirty years from now have to make a decision, they've got an equal balance of data on the function and the benefits of both, when they're trying to decide do we leave this infrastructure there.

I worked in salvage of vessels out on the west coast for twenty-five years, and we're talking about vessels sixty-five feet, and the agony, and the pain, that it took to pull up a sixty-five-foot steel-hull vessel from 300 feet of water, and we're talking about massive structures out here. The inclination is can't we just leave it? I mean, so there's already kind of a bias. It's very expensive, and it’s risky. You’re going to -- If it's been there for a long time, are we going to do more damage than good? I mean, there's already a bias towards just leave it. It's the easy, simple thing to do, but it -- But, you know, there should be at least an equal assessment of that native habitat, so they don't get kind of --

MS. HOWINGTON: All right, and so what I have here, and now this the question is do we do the beach nourishment policy or do we do the energy policy, because that involves all this wind development. Would that be a more appropriate place, but what we have is we look at, insert policy here, to require developers to ensure data on native habitat, including sand habitat and introduced habitat after development, are equivalent. Okay, and so then, insert policy here, which one?

MS. CROWE: I think it sounds like energy policy.

MR. KATHEY: Rather than "after development", "at the end of the project lifespan", right, because after development might be, well, is that just a year after they developed it? I mean, it's a little ambiguous, to me.

MS. CROWE: Matt had a comment.

MR. KENWORTHY: More of a question. Is the beach, and the beach nourishment, policy -- Is the area that we're focusing on in that policy the same as the wind energy area, and so would we actually really need a revision, or a relook, at the beach re nourishment policy, in terms of this?

MS. HOWINGTON: May I make a recommendation? I think we've been talking about the beach renourishment policy because we've been talking about sand, and we have language in that policy that is very equivalent to what we've been discussing, but, since we are discussing this in the context of wind development, and offshore infrastructure and energy, we do it with the energy policy, which, again, Paula is rolling her eyes at me right now, because we just finished that, and we try to add in one recommendation in -- There's a monitoring section, and we can wordsmith this, during this presentation, and finish this up at this meeting. Paula. Jordan has her hand raised. Paula, you go first because, you know, you're the one who --

MS. KEENER: No, and I'm ready to -- I think I'm going to present, and so I'm waiting for you to tell me when to do that.

MS. HOWINGTON: Okay. Jordy.

MS. WOLFE: Hi there. I was just going to go ahead and bring it to the council's attention that NMFS and BOEM have already developed a guidance document. It's a recommendations for mapping essential fish habitat that the developers and BOEM follow, and it provides very detailed steps for mapping seafloor habitat and documenting all of the different habitat types and the benthic sampling and the survey plan documents that the developer is supposed to submit to BOEM, who then submits it to us for consultation, so that there is a complete consultation packet submitted.

There is already extensive guidance that NMFS has developed with BOEM, and so whether or not the AP uses the formal language, and information, that's already in that document to satisfy a policy, and that might be easy, or I would want to make sure that anything in the policy does not contradict what is already provided by NMFS to BOEM.

MS. HOWINGTON: Can you provide us a document that we could cite, or something like that, so that we make certain that we are working together?

MS. WOLFE: Yes, it is -- Yes, and I'll send you the link for it, but it's available on the NMFS website as well as like the BOEM EFH portal.

MR. KATHEY: So, Jordan, you're speaking about a mapping effort, correct, a mapping effort to establish what habitat is there and the nature of that habitat?

MS. WOLFE: Yes, mapping the seafloor habitat and the proper characterization of the benthos within the lease area for every specific wind project.

MR. KATHEY: So all that does is verify the type of habitat that's there. It doesn't look at the function of that habitat, or the ecological significance of that habitat, correct?

MS. WOLFE: No, that's not correct. So, for the purposes of the EFH consultation, all the benthic habitat types throughout the project area have to be accurately mapped, and so that includes the benthic substrates features that should be mapped using acoustic data, and so the bathymetry and backscatter, sediment grain site analysis, optical imagery, and then they have to delineate and characterize the complex and sensitive habitats that are more valuable, or more vulnerable, to project impacts, and, as part of that EFH assessment, they have to analyze the impacts to every individual habitat type from every specific project action, and so how would EFH be impacted by the release of ballast water, how would EFH be impacted by pile driving, and scour protection, and so on and so forth. Every identified factor is applied to every habitat type that they have delineated, and characterized, within the project area.

MR. KATHEY: So that's predictive modeling, is what you're talking about, correct?

MS. WOLFE: No. They have to go out and do the sampling, and the sonar, and the bathymetry, and they have to do all of that sampling. It takes years for them to conduct that analysis.

MR. KATHEY: Okay, and so, in our last meeting in April, we were told, by the presenters, that they would be looking at the introduced environment, if you will, for the thirty years of the project. It would be an ongoing effort, and so are you saying that they would also be required, during that thirty years, throughout that thirty-year project lifespan, to look at the habitat that was displaced, and study it with the same amount of fervor that they're giving to the introduced habitat?

MS. WOLFE: I don't know if I particularly understand your question. Are you asking if they are required to monitor the preexisting habitats that are adjacent to the artificial?

MR. KATHEY: Yes, that's correct.

MS. WOLFE: So they do have to do long-term monitoring, but then they also provide monies to the science centers, and so the science centers can conduct long-term monitoring of the adjacent habitat types, as well as the habitats that are introduced, if we're going to use the same language that you're using, and so there's like dual efforts going on.

MR. KATHEY: Okay. So their long-term monitoring requirement, that's typically imposed, is to monitor the habitat that they have created, but not necessarily the habitat that was displaced, or the type of habitat that was displaced in the near vicinity. Their focus, the project sponsor's focus, is

what they've installed and to study the ecological processes there on that installed structure, correct?

MS. WOLFE: Correct, and they're also doing the long-term monitoring of the export cable corridor of the different -- Of the piles and everything, and then the science center, that gets monies from -- So the different science centers, that gets monies from the developers for those windfarms, they are in charge of conducting their own monitoring in their own species, and, you know, if they're doing fisheries-independent or dependent monitoring, and where they're doing those sampling locations.

Those science centers, and the scientists, usually are developing their monitoring plans in conjunction with the developers, and so it depends on region, and the specific farm that we're talking about too, and so kind of a two-part answer to your question.

MR. KATHEY: Okay. Yes, that helps, and so, if this panel were to make recommendations, it would be for NOAA to use that money that's being sent to them, or to the council, to do these studies, so that we have a counterbalance to the studies that are being done at the site.

MS. WOLFE: Correct. Yes, working with the science center and the fisheries monitoring scientists, hired through the science center to develop studies that complement the monitoring that goes on at the actual windfarm developer site, because, yes, they're going to be doing their monitoring of the actual structures, and the habitat that was impacted within the lease area, but, if we're going to be looking at areas outside of the lease area, then the developer is not responsible for monitoring outside their lease area, but then that's where we would propose that to independent scientists, through the science center that get pools of money, to conduct that kind of study.

MR. KATHEY: The funding that the developers give to the science center, how is that determined, you know, the amount of that funding, and does it equal the amount of funding that they're going to be spending on studying the site, the project site?

MS. WOLFE: That question is out of my paygrade, and so I don't know.

MR. KATHEY: Okay. I was just curious.

MS. WOLFE: That would be a direct question for the science center, and they sit down and negotiate that with the fisheries group that's hired by the developer, and so I actually believe Lela Schlenker would actually be a good person to ask that specific to. She was the fisheries liaison for Kitty Hawk North, before it was renamed CVOW South, and so I don't know if she's still on that specific project, but she would probably be a good contact to ask that question, but those are negotiations that are hashed out between BOEM, the developer, and the science center.

MR. KATHEY: Okay. Thanks, Jordan. That's helpful. Thank you very much.

MS. CROWE: Thanks, Jordy. I'm going to let Alex have a response to that.

DR. SCHNEIDER: I was just going to follow-up that each lease can have different monitoring requirements, and I can't speak to the habitat requirements off the top of my head, but the developers do have control sites that they monitor for the fisheries surveys, and for their benthic

surveys, that are outside of their lease areas that mimic the conditions of the lease areas. If a developer is monitoring for surf clams in their lease, they would pick sites with coordination amongst the various federal agencies that mimic the conditions of their lease, to try to understand and have that level of comparison, as a control.

MS. HOWINGTON: So it sounds like -- Wilson.

DR. LANEY: Just one more follow-up, in thinking about AP actions here, and this may be an action for mem as opposed to the whole AP, but a question for Alex and Avery and Brendan. To your knowledge, is there something that would be equivalent to a community profile for these offshore sand habitats?

When I say community profile, some of you who are longer in the tooth may remember that the U.S. Fish and Wildlife Service Office of Biological Services did a whole series of community profiles on different estuaries and habitat types, and I don't remember one that was done on offshore sand habitats, but I would benefit greatly from such a publication, if one exists, that would talk about, you know, the macrobenthos and the ecology of those areas, that are largely predominantly sand offshore, and so that's something that -- I will definitely look for that, but I thought some of you may know whether or not such a thing exists, off the top of your heads.

DR. SCHNEIDER: I can get at some of that, a little bit. If you check out the BOEM website, under the Marine Minerals Division, they have a tab that's all of the BOEM-funded studies that pertain to sand resources, and mineral resources, on the outer continental shelf, and they have a variety of different studies that focus on the macrobenthos in those areas.

MS. HOWINGTON: All right, and so then it sounds like -- Do we need this recommendation, Scott? Do we still need it, or do we feel like the dual monitoring plans with NMFS and the developer, and them trying to mirror each other, cover it?

MS. KATHEY: Well, I mean -- You know, it’s not clear to me, the money that’s passed to the science centers, just exactly what they use it for. We could make a recommendation as to how we feel that money should be directed, or at least that it should be directed to this issue, because I don't know what they're going to use that funding to evaluate.

I don't know if they're just kind of redundant to whatever the project sponsor is doing, to make sure that there's consistency in the findings, or are they even looking at the native habitat at all, and with the same kind of rigor, and so I think that's what -- I think a recommendation would still be helpful. There may already be a mechanism for it. We don't have to forge one, if it's already there, but we're trying to give some advice as to the direction for the research that the science centers do.

MS. CROWE: Okay. Paula, you have your hand up?

MS. KEENER: Yes, and I was just going to say that there is a section in the energy policy. I was trying to get to a draft energy policy on mitigation, and so we can look at that more when we get to the policy on the agenda.

MS. HOWINGTON: So the next subject that we have is the flow policy. There you go.

MS. CROWE: The energy policy.

MS. HOWINGTON: Energy policy. Too many policies. All right. Is the energy policy -- Do we want to try and tackle that today, before we finish up at 5:00? If we try to tackle that today, I think we will not be able to finish at 5:00, by the way. So maybe we just leave it.

I would recommend, for this recommendation, for this AP action item, and I can just highlight it, and we can wait, and then, in the morning we can have a discussion about how we want to wordsmith this, and how we want to add it into the energy policy. Is that okay, Scott? Okay, and so then I'm going to do that, and then, Paula, since you're online, and I know I asked you if you would be willing to present today, but this talk went longer than I thought, which is good, because the other talk went shorter than I thought, and so are you cool presenting on time tomorrow morning?

MS. KEENER: I am. I'm just going to say you surely owe me a margarita.

MS. HOWINGTON: That sounds good. I can do that. Sorry. My copy-and-paste is not working right now. So then, Stacie, I'll leave it up to you. I think it's 4:40. We're ahead of time. Do you want to adjourn early today?

MS. CROWE: How does the group feel? Would you rather just adjourn early? I don't know what we have to put in there to fill twenty minutes.

MS. HOWINGTON: I mean, I could do one of my presentations about the meeting dates and like methods discussion. That one I can kill in twenty minutes.

MS. CROWE: I was going to say that I'm local, and so it's fine with me, but those of you who want to get as much out of the way as we can, so we can finish early on Wednesday, that would be an option.

MS. HOWINGTON: Well, we did get this completed early, and so I feel like we're probably going to finish early Wednesday, but, if I say it, then we won't, and so I'm not going.

MS. CROWE: Well, we've already proven that we're really bad at judging.

MS. HOWINGTON: We're really bad at this.

MS. CROWE: I mean, is adjourn early the consensus, either hands, or nodding, or falling asleep? It looks like adjourn early is the way to go.

MS. HOWINGTON: All right. Adjourn early it is.

MS. CROWE: Okay. We will see everyone tomorrow morning then, at 8:30.

MS. HOWINGTON: At 8:30, yes.

MS. CROWE: We're going to start with Paula and the energy policy. Thank you, everyone.

(Whereupon, the meeting recessed on October 28, 2024.)

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OCTOBER 29, 2024

TUESDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Hilton Garden Inn Charleston Airport and Convention Center, North Charleston, South Carolina, on October 29, 2024, and was called to order by Chairman Stacie Crowe.

MS. CROWE: Okay, and so I think we're going to go ahead and get started this morning, and, like Kathleen said, we're going to start with Kathleen and Jordy Wolfe, and they're going to give us a review of upcoming projects that require EFH consultations.

MS. HOWINGTON: So everyone should be a little bit confused, because this was not technically on the workplan. What was on the workplan was beneficial use projects, thin layer placement, tide gates, shoreline stabilization, and, while we were going through and trying to figure out how to make five presentations, we figured we're just going to combine all of those, and so here is what we're going to be talking about.

We're going to start with living shorelines, and then we're going to go to beneficial use projects, and then we're going to look at some water flow projects. Living shorelines, one of the big things we need to discuss is the definition of living shorelines. I'm sure all of us have been in habitat meetings, and everyone has a different definition of this, and people argue about it, and so we're going to establish how the Habitat AP would like to define living shorelines, and, if we would like to recommend, recommend, a definition for the council, we can do so.

Then we are going to discuss the consults, and so I'm going to start with the definition, and then I'm going to tag Jordy, and she's going to talk about consultations, and here are the issues, here are the concerns, here's what's going on, and then we're going to discuss where these projects fall in the Habitat and Ecosystem Advisory Panel process.

Here are four options of what we can do as an AP. We can just keep an eye out on these, that these are interesting, and they definitely have an impact on habitat, and the AP will continue to discuss them internally, and that's all we need to do. We can let the council know, via our AP report, these projects are going to be a problem, and you all need -- Please, can you all pay attention to them, and can you all let us know if you see them a lot, and can you all let us know if you have any concerns, and so that's the next step, is we inform the council that we're concerned about this.

The third option is we add it to an existing policy, and, okay, and so this is a project that's up and coming, and we've never seen this before. It's not in our policy, and we need to add in a couple of bullet points about this into an already existing policy.

The fourth one is, and this is, of course -- Like we would have to argue really hard for this one, but of creating a new policy. We already have a lot of policies, and so, if a project is going to be that complicated, and it's going to be that big a deal, and we have to create a new one, that is going to be something we would have to argue to the council, and so those four things are our options, and, again, the process is going to be that we discuss the definition, we decide as a group this is what we mean, we discuss the consults and the issues, and then one of those four options is what we decide to move forward with. Okay. Jordy.

MS. WOLFE: So, between 2022 and 2024, HCD consulted on approximately 2,300 EFH consultations or EFH assessments. We performed a portion of that -- 17 percent is tide gates, and beneficial use and tide gates took up roughly 17 percent of the total consultations.

MS. HOWINGTON: One moment. Technical difficulties. For some reason, we just lost audio. It came back.

MS. WOLFE: I can hear you fine.

MS. HOWINGTON: Okay. Thank you.

MS. WOLFE: Cool. All right. So, while 17 percent of our total consultations might seem kind of small, these projects ended up taking a significant amount of staff hours, because of the technical assistance, the amount of meetings that we have to have, the interagency coordination, and just Stacie can attest to this, too.

These are really difficult projects, because either there's not a whole lot of existing literature, or a good repertoire for these types of projects to be done that we can rely on that have been done well, and so we foresee that, given the current conversations and the discourse surrounding these types of project, that we'll see a dramatic uptick in these types of difficult projects, and so how do we address this, going forward?

MS. HOWINGTON: So, first things first, living shorelines. So, again, all of us have been a part of a conversation where people had different definitions. Trish, our committee chair, who is wonderful, and is sitting over there, actually worked, in North Carolina, on trying to figure out living shorelines, and their definitions, and compiled this giant list of every definition she could find on the east coast of what a living shoreline is.

By looking through all of these, I developed this definition. Now, this is not necessarily the definition we're going to move forward with. This is just a recommendation. This is a combination of all of those definitions together, pieces and parts, highlights, what everyone kind of agrees with.

North Carolina also has a new definition that their living shorelines working group has come up with, and we can always decide that let's go with the NOAA definition, because they also have one. The problem is they have a few, but then we have to decide which one we want to go with, and so, people, review this. I know that Jordy wants to mention the living shoreline working group North Carolina definition, that maybe we go with that, but, no matter what, we need to decide what we mean when we say “living shorelines”.

MS. WOLFE: So the North Carolina living shoreline steering committee defines it as a suite of options for shoreline erosion control that maintains connections between the upland, the intertidal, and aquatic areas essential for water quality, ecosystem services, and habitat values, and the big part that they harp on is the connectivity between aquatic and upland areas.

MS. HOWINGTON: So that one is much shorter than what I developed here, but discuss how you all want to move forward.

MR. WEBB: A quick question, before we wade into this, and no pun intended, but is there any way, or any reason, to try and find some consistency, from NOAA all the way down to the different councils, so that we're all working from the same place? Does this not leave open the opportunity for people to say, well, the other definition is this, and how is your definition of that? I know that's a big ask, but is there a process, and an argument, that we could make to try and harmonize some of this?

MS. HOWINGTON: That was why I led with the we could also choose to go with somebody else's definition, but, because there were so many, I wanted to try my hand at kind of combining all of these together, because some of them are really short, like North Carolina's is, and some of them are really detailed.

If you want to, and I do not have it in the briefing book, but I can pull up Trisha's document, where she grabbed all of these definitions, and they range from two sentences to five, and so I wanted us to have an option with as many details as possible, that was still kind of short, and that's how I came up with this, but yes, we could definitely just say we're going with somebody else's definition.

MR. WEBB: Well, it wasn't that, and, for the sake of brevity here, I'm onboard for us to come up with a definition, but I think it would be productive too if we make a recommendation talking about the need to harmonize all these different definitions, so that we come up with one common idea that fits everything, so we can accomplish what we need to accomplish, but I think, going forward, maybe we lay out a little bit of groundwork too that this is not really workable.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. So, first of all, I agree with David. It would be great if we could come up with a consistent definition that covers a broad area, and I was going to ask -- Kathleen, are you our rep on the CCC Habitat Group now?

MS. HOWINGTON: Yes.

DR. LANEY: Has there been any discussion, at the CCC, about trying to come up with at least a uniform definition for all the eight federal fishery management councils?

MS. HOWINGTON: There's been discussion about the fact that everyone has different definition, and it's causing confusion, but that's about it.

MS. CROWE: So, Jordy, what is the -- I guess I'm putting you on the spot, because I figure you probably have looked into it a lot, but what is the main thing that's causing confusion? Is it the gray infrastructure piece of the definition in some of them?

MS. WOLFE: Yes, and so for -- Up here, it says "such as native plants and oyster shells and rocks, along with minimal structural components like stone". North Carolina does use stone and rock, and so I think, if you were to apply that definition to the state of what North Carolina -- They might disagree with that, and so trying to have an all-encompassing, without having to go into depth of the "such as native plants and oysters", and so I think that's where I brought up the definition that the steering committee stated, that it's just a suite of shoreline control options -- That, if we needed to go further in depth by state, but that wouldn't be the primary definition that we're defining living shoreline. It would be like, okay, these are the options available to North Carolina, based off of North Carolina state law, et cetera, for each state.

MS. CROWE: Wilson, go ahead.

DR. LANEY: So, just looking over what Kathleen has drafted for us here, I'm mostly good with it. Using the word "enhance" gives me a little heartburn there, relative to, you know, a totally natural shoreline. I agree that they do a whole lot better job of maintaining the natural connections between upland intertidal and aquatic environments, and it is enhanced relative to a traditional bulkhead or seawall, and I'll grant you that, and so maybe I'm okay with that.

Then the next bullet says "not only minimizes erosion and reduces wave energy". Well, I agree that that would be the case under most circumstances, but I'm thinking if a Cat 5 rolls in, you know, how is a living shoreline even going to stand up under a Category 5, and it just depends, but that would be an unusual circumstance, and so does it minimize, or does it just reduce? I don't know.

I could look at some other words there, I think, but, other than those two things, I think Kathleen has done a good job of capturing everything that needs to be in there, and I know it's long, and North Carolina's is a whole lot shorter, sweeter, and to the point, but I'll be interested to hear what everybody else says, and I do agree with David, again, that it would be nice if the living shoreline community of practice could come up with a definition that fit everybody.

AP MEMBER: Can you point us to where the North Carolina definition is? I can't seem to put my hands on it right now.

MS. HOWINGTON: Sure.

MR. KENWORTHY: But I also agree with Jordy. I think we shouldn't limit the definition to certain materials. We all are fully aware, at least most of us are fully aware, that there's lots of different groups, using lots of different materials and approaches for living shoreline projects now, and we don't -- We want to make sure we're sensitive to that, and that we're not unintentionally, you know, leaving any certain projects out of this list.

I mean, we're using, you know, cement covered jute material. People in Florida are using, you know, shells and gabions, and, you know, they're all going towards living shoreline projects, and so I just want to make sure that we're sensitive to that, so that we're not eliminating any projects from consultation.

MS. HOWINGTON: So, Jordy, where is the working's group -- All right. Thank you. So what you're seeing right up here is Trish Murphey's document from 2019. This is what the definition

that I had up there was built from, and so this is everyone's different definition, and so this includes a suite of options for shoreline erosion control that maintain existing connections. That's what you were quoting, Jordy.

Then we have three different Florida ones, two Georgia definitions, South Carolina, which is short and sweet to the point, of course. South Carolina's might have changed?

MS. CROWE: Yes, South Carolina has changed.

MS. HOWINGTON: Okay. Yes, this has been a bit. Then North Carolina. Sorry, and I'm zooming down to NOAA. Here you go. NOAA Ocean Services. Then, of course, Wikipedia.

MR. KATHEY: So these all have the same theme, obviously, in common. They all specifically reference natural materials, which I think that's at the heart of it, but I think your question, Matt, is, well, but sometimes we have to bind those materials, right, and so it's either stone, or sometimes a wire mesh, or something like that, and so I'm just wondering, back in the definition before us, that we're considering, if, when we give an example of structural materials like stone, we also add "and wire mesh", just to put out there that it does -- You know, it can be a manufactured substance, that's maybe a binder, but I saw, I think in North Carolina's, where it says that should be at a minimum. You know, I think if we just put it in those -- Put that in as a caveat, yes, that sometimes these are necessary, but we want to -- They should be minimal, and it's a good statement of our intent.

MS. CROWE: David, go ahead.

MR. WEBB: How far out into the water -- Are we going to include any specific, you know, part of the wire, and the only reason I bring that up is, when the sanctuary was doing the new blueprint down in Monroe County, this was a huge part of it, as an argument about the reefs, the nearshore reefs, because that -- It's a -- You know, it's like an aircraft carrier fleet. You've got walls of attrition before you get to the aircraft carrier in an attack, and so these nearshore reefs, shallow-water reefs too, and I don't know if that's just too much to put in here, but I just wanted to raise that as a question for the group.

MS. WOLFE: I would exert some caution in putting that into the definition, because every state has a different rule into how far in the water that they allow, and so I know North Carolina -- I don't know the specifics, but I know North Carolina is very picky, as opposed to what South Carolina would allow, and so I don't know if that would be a good idea.

MR. KATHEY: Well, it's going to be defined by the regulatory agencies involved. You know, they're going to have that discretion ultimately anyway, and so I think for us to try to define something would not be prudent.

MS. CROWE: I think part of the problem is, if you even put it in there though, then you have to defend it, and so it needs to be with great caution. We have a hand up online. Gregg, go ahead.

MR. BODNAR: You know, regulatory in North Carolina, and so one point you mentioned was distance offshore. We are very prescribed, in our general permit, on distances offshore. That is then -- In a major permit realm, it's more driven by navigation, agency comments, different things

like that, and so we do have an out, if you want to call it that, from our prescription on how far offshore one of these things can be.

Then, also too, you know, need to remember that, you know, in the real world, a lot of -- Everyone is using these for a form of shoreline stabilization, and so though -- Like say in North Carolina, where we have -- You know, we talk about, you know, the types of materials, the suite of materials and things like that, and we talk about marsh plants, oyster shells, and occasionally minimal amounts of structural materials, like stone, and, you know, people are using these as an alternative to bulkheads, and their ultimate goal is still shoreline stabilization.

Almost always, it's de facto stone, sheet-pile, sill, something, you know, especially in areas where there's a large amount of fetch. You know, people are very cognizant of that, and very concerned that the time and effort and money that they're going to put into a shoreline stabilization effort needs to hold up.

You know, we also, in North Carolina have conditions, within our permits, that talks about the material, you know, shall remain on site in the alignment that's posed. You know, one thing that we're always worried about is this material moving off-site and causing problems to navigation. You know, otherwise, obviously, like mentioned previously, you know, hurricanes, and things like that, is a whole other ball of wax, but, you know, in general, you know, there is concern, and that's why we've kind of moved away from, you know, the standard shell and bags, because they -- You know, not only do you have plastic in the water, but they also, you know, are very difficult to maintain in an alignment that was previously approved.

MS. CROWE: Matt, go ahead.

MR. KENWORTHY: I just wanted to provide clarity, and, Scott, I appreciate your feedback there, but I was promoting, or pushing for, this language of the suite of options, and not necessarily to specifically define in the definition, you know, stone, or rock, or whatever those are, but just so that we keep all those options open, but I guess a couple of things for Jordy.

One, can you maybe walk through, you know, a couple examples of the challenges that you guys are experiencing with these consultations and living shorelines? Two, if -- You know, if we were to have something like a suite of options, does that just open up more challenges for you, and more time, and consideration for your staff to ask questions of does this -- What does this mean, and does this count, and things like that, and so are we helping by being more vague?

MS. WOLFE: Yes. Yes, because we have to defer to each state's regulatory definition, because the state -- The state is going to have a more precise definition that we would fall back on. For example, and I don't know who was just speaking online. Was it --

MS. HOWINGTON: Gregg.

MS. WOLFE: Gregg. There is the gap between the sill structures. We defer to what the state prescribes, and so you've mentioned about the general permit. We defer to what they prescribe. We're not going to try to provide recommendations that contradict that, but the same things that we would -- The things that we would recommend for North Carolina, we're not necessarily prescribing to Florida, because the habitat is very different, and the material that they use for the

living shoreline is going to be different, the composition, and so we have to defer to what Florida is going to recommend.

I think, if the council is going to have prescriptive language for what we would recommend, I think that's just another hurdle for us to have to come over, and like what Stacie had mentioned is that, if we put something in a policy, or in writing is we have to back that, and we already have a lot to do, but I think having a very general definition, that encompasses what a living shoreline is for our region, is important for the council to do. We can even say like we defer to each state's department agency for what they -- For what they were to require as, and I don't know, but adequate for the material to use, and so I didn't know if you wanted to go to the -- We're on the next slide.

HCD was recently involved with a living shoreline project in North Carolina which proposed 100-foot sills with five-foot gaps, and so, again, we deferred to this, to the prescriptive language of the state had, but they were proposed in areas with a moderate amount of submerged aquatic vegetation, which was roughly -- So, in areas that had a moderate SAV coverage, in the 40 to 70 percent range, the total living shoreline would have been 2,100 linear feet.

They proposed roughly 38,000 square feet of native marsh grass plantings, but, within those areas that they had proposed those sills, it would have had direct impacts to about 8,400 square feet of SAV habitat, resulting in habitat conversion, and so, with the state, HCD staff provided recommendations to move those sills, and modify those sills, in areas where the SAV habitat had not been mapped.

The update that I had received from our HCD staff member, Anne Deaton, and she's the one who was working on this project with the state, is that the project had agreed to move and modify that footprint, to avoid this SAV impacts, and agreed to ten-foot spacing between the sills, so that there would be adequate room for egress and ingress of nekton and other fishes within that area.

Some of the discourse that surrounds the living shoreline, I think, problem, when we have consultations, and it's not just like what they're made of, but where are they putting them, with regards to existing habitat, so that there is not habitat conversion going on.

MS. CROWE: So, Jordy, I'm just -- I'm curious, on this one, if this is a picture of that project, and it doesn't look like an area where shoreline protection is necessary.

MS. WOLFE: This was one just off the NOAA website, for a different project, because that project was just -- They haven't done it yet. It was during the consultation stages.

MS. CROWE: Okay, and so I was just -- I was wondering if, if that was part of the reasoning for the SAV impacts.

MS. WOLFE: For the --

MS. CROWE: Because if this was the actual.

MS. WOLFE: No, and this -- I believe, actually, this picture is from South Carolina.

MS. CROWE: Gotcha. Okay. Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. I was going to ask Jordy. and so there's -- Is there a living shoreline general permit for all four South Atlantic states? Does each of those states have a general permit? No? They don't? I was wondering if they had -- If each state did have a general permit, that perhaps, you know, the conditions within the general permit would be broad enough that that would be something that would be acceptable to everybody, at least as a base definition, but it sounds like, if they don't have general permits, then that's not an option.

MS. WOLFE: No, and North Carolina has an RGP, but not for South Carolina.

MR. BODNAR: Ours is -- That was vetted through a number of years of working with our Division of Water Resources, Army Corps of Engineers, and other state agencies, and so we do have one, like I said, that's fairly prescribed. It has, you know, conditions on distance offshore. I don't believe material type, but the material is pretty standard, usually rock. We do have a separate marsh sill, sheet pile sill, general permit as well, and the distances off -- Like I said, the distances offshores, and also to distances between gaps, things like that. It's on our website. We have our rules available. If anybody would like that information on the GP, I can definitely provide it.

MS. CROWE: Thanks, Gregg. I think that would be great, if you want to provide that, and it looks like Anne Deaton has a comment, and so, Anne, if you want to go ahead.

MS. DEATON: I was just going to mention that there is -- The Corps has the nationwide permit for living shorelines, and so that is an option that helps states that don't have a GP, but they still have to follow the timeline of the states, too. I was trying to pull up -- I'm going to -- I can email Jordy some photos of the site that she was mentioning, and it was an island near Oregon Inlet that is -- Actually, half of it's a bird nesting area, and the other half is owned by an outdoor group that does educational trips for children, kids and stuff, but the shoreline was definitely highly eroded.

The issue was that there was SAV right up to the edge, in many places, and patchy in others, and so the reason they were able to get that square footage down as they -- Just one whole side of it, they just said, okay, we won't -- Then, the rest, they moved to the sill segments out, or shortened them, to avoid the direct effects to SAV. I think I, just while I'm on here, I think the challenges that we're seeing -- One is that, when there's SAV close by, a lot in our area, and you might have SAV, but still have erosion, which seems odd, but it does happen.

The point has to be -- I think, in your definition, if you do want, you know, you must -- I think it should include something that there has to be an existing -- You know, the overall goal is stabilization when there is an issue, but everywhere we have erosion, pretty much, to some extent, everywhere, and the other concern we have is that we're seeing larger projects.

We're seeing a lot of innovative materials that may be really good in the long run, but, with the infrastructure money that's come through, a lot of towns have gotten money to do -- You know, they're using the sills to protect roadways that are next to the water, and things like that, and so you're getting these taller rock sills, and more hardening, and so you just have to make -- You know, make sure that there's definitely a green benefit of some kind. I think that's key.

MS. CROWE: Thanks, Anne. I completely agree with you, and I know, from my personal standpoint, we always push for green infrastructure, and nature-based solutions, rather than gray infrastructure, and so I think that's a really important piece of any definition.

MS. WOLFE: I was going to add to what Anne had mentioned, and following on Wilson's question, is that, even though there's a nationwide permit for living shorelines, and it's Nationwide Permit 54, we, as NOAA, do defer to the states' definitions for living shorelines, because of -- There's a lot more regulatory hurdles for within the state's permitting because of the coastal zone management programs, state permitting related to water quality and wetlands protection, and then also state public trust resources for submerged lands, and so, when we -- Within the living shoreline world, there's a lot more state oversight, because it is state waters too, and so just to add to that. Thank you, Anne.

MS. HOWINGTON: Okay, and so I think I'm going to pull us back a little bit. The first question was how do we define living shorelines? I've heard some edits to this definition, but, before I show them, do we want to move forward with this, or do we want to pick a definition that belongs to a different management body and say the Habitat and Ecosystem Advisory Panel recommends that, when the council discusses living shorelines, it relies on this definition of this state? Which one, A or B, or NOAA?

MS. CROWE: What was NOAA's? Did we put --

MS. HOWINGTON: Yes, we did.

MS. WOLFE: Let's go halves, and so not necessarily adopting a state's definition, but a part of the whole, if that makes sense, and so the steering committee that I had mentioned, and I sent you the email for, they define it as a suite of options for shoreline erosion control that maintains connections between the upland intertidal and aquatic areas essential for water quality, ecosystem services, and habitat values. I think that's pretty all-encompassing. I can't see his name tag, but it's vague enough, and it does not limit or exclude one state over another, and so I think having it less-prescriptive is going to be in our benefit.

MS. HOWINGTON: Well, so what I did for that was I added in a sentence to this first one. I left in the "such as native plants, sand, oyster shells, and rocks", just as examples, but then the details of material usage and percentage is determined by the state management bodies. Would that cover it, make it vague enough, or do you want me to remove?

MS. WOLFE: Anne, I'm going to defer to you since you're our living shoreline expert. What do you think?

MS. DEATON: Which part? Can you say it again?

MS. WOLFE: Can you see the screen? It's the first bullet point.

MS. DEATON: The one thing I noticed is that it would -- That doesn't really include things like the new materials we're seeing, which are really -- They're cement, but they're specialized cement, with crushed oyster shell embedded in them, or the jute somebody mentioned dipped in, and it's a cement, but it's -- They've added things to it, to make it recruit oysters better. That's one thing I

saw in that definition, but I missed -- What were you actually asking? Then you want to include all of these bullets?

MS. HOWINGTON: So how is that edit? Make it a suite of options, make certain that it's clear that that's determined by whatever the state management body is. I have gotten rid of “reduces wave energy”. I had said “aims to reduce the wave energy”, for Wilson, and I have gotten rid of “enhance” and just said “are a more natural way”.

MS. WOLFE: I think part of the state's definition, or the steering committee's definition, that's really important is it maintains connectivity between aquatic areas and the upland, and I think that is a very important part of the living shoreline aspect that we need to include.

MS. DEATON: Right. That's where the gaps come in, you know, because sometimes, if these are large and offshore, you want to make sure that all the organisms can get through both directions.

MS. HOWINGTON: I highlighted, in Bullet 2, that it's a more natural way to maintain the natural connections between upland, intertidal, and aquatic environments.

MS. WOLFE: Okay, and so it would be all four, all four bullets, for --

MS. HOWINGTON: Yes.

MS. WOLFE: Okay.

MS. HOWINGTON: Sorry, if that's the confusion, and the definition is all four of these bullets.

MS. WOLFE: Got it.

MS. HOWINGTON: I made them bulleted, and so, that way, they were easier to kind of process, but it would be all four.

MS. WOLFE: I got it.

MS. CROWE: Scott, go ahead.

MR. KATHEY: So for us, we know what we're talking about, when we talk about natural solutions, but I kind of feel like something's been lost by not focusing in on the fact that we’re -- We're trying to use natural materials, rather than manufactured gray infrastructure, and so, for someone who's not so familiar with this process, or what this is, I think, you know, having examples, and that's all we had before. It's just such-as, and it's not prescriptive. It's a conceptual description, and I kind of hate to see that lost, up in that first bullet.

Along with the minimal structural, and you could add, you know, like stone, jute, bar mesh. I mean, you could be a little bit more expansive than that, but -- Because all those other definitions, if I'm not mistaken, they all reference these natural materials that are kind of the focus of the design, right, and, if we just omit that entirely, it doesn't really -- I don't know. It feels like we lose some.

MS. CROWE: Gregg has his hand up online. So, Gregg, you want to go ahead, and then Simen.

MR. BODNAR: So, you know, somebody mentioned earlier about, you know, the influx of infrastructure, money, and things like that. You know, everybody right now, and especially North Carolina, and Anne had mentioned this previously, and, you know, we are -- Everybody is trying to build a better mousetrap right now, and we're getting all of these designed, engineered, you know, and what do you call it, but the printing, you know, the printing models now.

You know, people are printing out of concrete, and so, you know, we're kind of really, especially in North Carolina, with some of these larger projects, where we're getting a lot of NGOs involved that, you know -- Or contract, or not contract, but consultants that have their own firm now that builds these materials. We're getting away from the -- We're starting to really get away from the rock even, and we're getting these, you know, prefab units to being used as, you know, as these materials.

It's not just that concrete-covered jute, which is real popular right now in North Carolina, and it's these, you know, prefab, you know, concrete structures that are being built that can be varying sizes, and, you know, some of these things even need to have a bedding stone below them.

So, you know, it's -- With all of this money that's coming in, we're getting farther and farther away from these, quote, unquote, nature-based solutions for these things, and it's kind of becoming a little bit of a concern that we're armoring the estuarine waters now, where, you know, we've been concerned about armoring the oceanfront. You know, now there's a concern about how much are we armoring the estuarine shoreline in the name of a living shoreline.

MS. CROWE: Thanks, Gregg. I think that's a really good point. Simen, you had your hand up before we went on.

MR. KAALSTAD: Yes, and just to sort of echo, or add to, Scott's point, and, I mean, that second bullet, to me, is probably the more important part of the living shoreline aspect, in terms of maintaining that connectivity, and so I wonder if it's worth, like you mentioned, to some folks who might not, you know, be as -- It might not be as obvious to them what that nature-based solution is. I wonder if it's worth sort of setting a minimum of, you know, has to have those three components, and not necessarily are a more natural way to maintain the connections, as some form of criteria.

With the Atlantic Coastal Fish Habitat Partnership, for example, we received a living shoreline project proposal for funding, and one of the concerns, amongst the steering committee, was that it didn't, you know, qualify as a living shoreline by the state of Florida, and I'm not sure what the state of Florida's definition of living shoreline is, but I'm going back through the proposal, and it sort of seems to have elements of that, but then they -- You know, it says riprap sill with mangrove planters to replace an existing 200-foot seawall, in combination with offshore wave attenuation structures, to minimize shoreline erosion and to create favorable conditions for replanting up to 500 feet of grass, seagrass, shellfish, and fringing habitat. There's like elements there, but I don't -- I don't know if that's -- You know, because of that sort of gray definition, if there's -- If it's worth sort of having a checklist.

MS. HOWINGTON: Yes, I agree with you, and so, instead of just saying it's a natural way, we can say, unlike hard structures, living shorelines should maintain, or will maintain, or something like that, where it's more defined, of living shorelines will maintain the natural connections between uplands, and so do we like, should, will, are supposed to, and what do you want?

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

MS. HOWINGTON: Will? Okay. We're going to say "will".
Will.

MS. WOLFE: The 54 definition --

MS. HOWINGTON: Okay.

MS. WOLFE: So it says the living shoreline footprint is made up of mostly native material and incorporates vegetation or other living natural soft elements alone, or in combination with some type of harder shoreline structure, example given of oyster or mussel reefs or rock sills, for added protection and stability. Living shorelines should maintain, should maintain, the natural continuity of the land-water interface and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine, fringe wetlands, or oyster or mussel reef structures.

MS. HOWINGTON: Okay, so "should". All right, and so this is what we got right now. We have one hand up. I apologize, Gregg.

MR. BODNAR: Sorry. I must not have lowered my hand.

MS. HOWINGTON: Then we have a comment from Anne that don't forget the marsh will grow behind the sills. This is an important part of a nature-based sills, to reduce wetland loss and it actually restores marsh behind the sills. So, with all that in mind, this is what we have now created. Is this what we would like to recommend the council mean when they define living shorelines? I think it's vague enough. There's still examples of natural materials. We're relying on the state definition. We're insisting, or we're maintaining, that the natural connections need to be connected.

AP MEMBER: Just a point of clarity. Can you remind me what you meant by the percentage of material that was defined by the state management bodies?

MS. HOWINGTON: So that's how much rock they can use, versus natural materials. That is, and, Jordy, correct me if I'm wrong, but that is in each state's definition, and they say how much, and so we're stepping back and saying let the state determine how much of natural, versus unnatural, material you can use, and what materials you can use.

AP MEMBER: Okay. Thank you for that clarity.

DR. LANEY: One question on the fourth bullet. Am I correct when we say living shorelines grow, and we're talking about the epifauna that attaches to them, and tends to make them more natural? I mean, we're not --

MS. WOLFE: I'm going to defer to Anne, because her comment just stated that the area behind the sill, which encourages the marsh vegetation to like have a low wave, low energy attenuation, so that there is ability. Anne, is that part of the definition as well for living shoreline, for the grow and adapt over time, the area that is directly behind the sill or shoreline structure, or Gregg?

MR. BODNAR: I'm sorry. Can you say that again?

MS. WOLFE: The fourth bullet, the living shoreline grow and adapt over time, the question that was raised in the room is the "grow and adapt" wording, and is that directly the epifauna that grows on the living shoreline itself, or does that also pertain to the vegetation that grows behind the living shoreline structure, i.e., the vegetation?

MS. DEATON: I would say it's both. It's the marsh expanding over time. It may evolve, with sediment changes, and it may get some more high marsh, but it may, with sea level rise get more low marsh, but also oyster growth, if it's an oyster area, and then other epifauna that grows on the rocks.

MR. BODNAR: In North Carolina, and it may be going on in other places as well, there's kind of two camps about the coastal wetlands, or the wetlands on the backside. Some folks believe that it's not a living shoreline unless you plant behind it. Some of -- Like some of our state agencies are a little hesitant about bringing in fill on the backside of these, to be able to get it to an elevation to be able to plant, you know, just because of the unconsolidated material that's being put out in open water.

A lot of times they'll propose plantings, and not, and sometimes they'll wait, in those areas, to allow it to naturally accrete material, before they plant, especially if it's in areas that might be a little too deep for the coastal wetlands to, you know, have a better chance of survival, and so I would think that it would be all of things, because, you know, on a yearly basis, it may be more problematic, less problematic, or even, you know, preferable for those conditions to grow and to create.

MS. CROWE: Wilson, go ahead.

DR. LANEY: So I'm trying to put on my non-technical lay-type hat, and when I see "living shorelines grow", I mean, the first thing that pops into my mind is, okay, they're going to keep adding material to it, and it's going to get bigger, and so would it get closer to what we're trying to say there to say "living shorelines usually grow, and become more natural, and naturalized"?

MS. HOWINGTON: How about "encourages growth and adapts over time"?

DR. LANEY: Well, if we say -- I still would like to see that word "growth" modified, to make it absolutely clear that we're talking about natural growth, you know, as opposed to adding more material to it. Scott just said "promote natural growth" maybe, instead of "encourage".

MR. WEBB: We're doing a group wordsmith here, and so let me give it a shot. Living shorelines should be designed to spontaneously grow and adapt over time.

MS. HOWINGTON: I love it when somebody else wordsmiths and I don't have to.

DR. Yeah, thank you, David. That does it, I think.

MS. CROWE: Simen, go ahead.

MR. KAALSTAD: I wonder also if it's worth -- I'm just thinking like facilitates, or natural processes, if those are any kind of words that should be considered, but it's probably all -- They're all synonyms, I think. Those words popped out.

MS. HOWINGTON: Tell me where to put them in, and I'm good.

MR. KAALSTAD: I don't know. I just -- Those words are also, you know, very descriptionary, I suppose.

MS. WOLFE: I do just want to say that -- So Anne and I are going back and forth right now, but, whatever definition that we do come up with, or bullets, I do think it is also important, whether or not the council agrees to it, that we also put up the nationwide permit definition, because that does encompass -- That is supposed to be encompassing of the states, regardless of what other -- Whatever state permit they do have. Most of these components are very similar to the definition that I routed off from the Nationwide Permit 54, but, whatever we do come up with, it should not conflict with that.

MS. HOWINGTON: Does anything conflict so far?

MS. WOLFE: No.

MS. HOWINGTON: Okay. I can do that.

AP MEMBER: Up in the first bullet there, where it says “a suite of options”, preferably natural materials, and so the options are actually techniques, more than the materials, correct, and so I'm wondering if we should say options that promote the use of natural materials, because these are -- I mean, that's the heart of it, is you have different techniques, and you have different options, but they all tend to promote the use of natural materials, over manufactured, right?

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

AP MEMBER: Yes, that promote use of natural materials, and then you take out the “preferably”. Does that make sense?

MS. HOWINGTON: All right. I can see some eyes glazing over. I know that wordsmithing a definition at nine in the morning isn't that much fun, but --

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

MS. HOWINGTON: That’s true. All right. So are we comfortable with recommending that, when the council discusses living shorelines, this is the HE AP's recommended definition for what they mean, and then the other recommendation would be, during the Habitat Committee, in March

of next year, we present this as a recommendation, as well as give the Nationwide Permit 54 definition as an alternative option. Trish.

MS. MURPHEY: Thanks. I just want to add the council will most likely want to ensure that this would be the most helpful to consultations, because this is where it's going to be used mostly, right, and so, as long as those folks that are involved with the consultations are comfortable with that -- I just want to just stress that. Thanks.

MS. HOWINGTON: Is everyone good with this? All right.

MS. CROWE: Wilson.

DR. LANEY: I'm good with it, and I was going to say, yes, that's what I was thinking too, is the people that really need to be comfortable with it or Jordy, and Anne, and anybody else in Habitat Conservation that's going to be looking at these things.

Just to put on my herpetologist hat for a moment, you know, the thing I look at is, you know, can a diamondback terrapin get through one of these things, and lay its eggs on the terrestrial part of the ecosystem, and so, if the answer is yes, then I think it's a pretty good design, usually, if it's in areas where diamondback terrapins occur, and there's a lot of places where they aren't, and so that's one thing.

The other thing I try and do is, you know, think what else? What else is there living in the water that's going to want to at least occasionally get on the land, and I know we think about the aquatic organisms too that want to get through. That's why we put those gaps in the sills, to let them get through, and get at the marsh behind the thing, and so, just going back to, and I think it was Jordy that said it earlier, that the connectivity is a key component, to keep it as permeable as possible.

MS. HOWINGTON: All right, and so any other definitions or edits to this?

MS. WOLFE: Is it possible that we can review this and decide, either at the next meeting, or put like a date on this, so we're not deciding this like right now? Is that okay?

MS. HOWINGTON: We can wait until the end of this meeting, but I would like to try and have a definition for the AP report for the recommendation in March.

MS. WOLFE: Okay.

MS. HOWINGTON: All right, and so I will put a note, in Other Business, to return to this definition, so we can all think of it on it. All right. So, that's Slide 4.

MS. CROWE: Benjamin had something to add.

MR. THEPAUT: I don't know if I could remain silent about this. I'm getting tripped over the word “rocks”. Is that something that we pulled from another council area? I mean, in Florida, there's no way they can be using rocks, but North Carolina is using rocks for living shoreline projects. I would like to remove that word.

MS. HOWINGTON: Florida uses rock in theirs, and New Jersey uses rock, and there's New York, Maine.

MR. THEPAUT: They're outside of --

MS. HOWINGTON: I know, but I'm giving you all of them. NOAA Ocean Services uses rock, and so that's where rock came from. Can we remove rock? 100 percent, but that's where rock came from.

MR. KATHEY: I think these are examples. They may apply, or they may not apply, in any given area. They're just a suite of examples that are used. We're talking about the whole region. This applies to the whole region, and not any particular state. As long as it's applicable somewhere within the jurisdiction of the South Atlantic Bight, then I think we're good.

MS. HOWINGTON: I moved it back so it's not as prominent, and so it starts with "native plants, sand, rocks, oyster reef". Okay.

MS. CROWE: Paul, did you have a comment on that?

MR. MEDDERS: I was just going to say that it meant -- I don't know that I've read Georgia's definition, because that's not what I do, but Georgia allows rocks in the permitting process, even though it may not be listed in the definition specifically.

MS. HOWINGTON: We're good to return to this later on, and so there you go. I apologize, everyone. Okey-dokey. Like I said, that was Slide 4. I knew that was going to be a -- All right. We already went over living shorelines consults. and kind of the issues with it, and so, again, this goes back to our four options. Do we, as a group, keep an eye on it? Do we put in the AP report the HE AP is concerned about these upcoming projects, and would recommend that the council keep their ear to the ground, and inform the HE AP if they see any issues? Do we add living shorelines into a policy? If so, which one, or do we create a new one? Those are your four options. Thoughts?

MS. CROWE: Wilson.

DR. LANEY: I think the way we've operated in the past is, if there is one that -- Well, keep an eye on it, for sure, and then, going to the second one, if there is one that really raises Habitat Conservation's concern, then they usually flag it for the council's Habitat AP. I mean, often, that's been the case in the past, and so, Jordy, is that something -- Is that standard operating procedure? If you see one that you said, whoa, this is a really bad one, then you would let us know about it, right?

MS. WOLFE: Yes.

MS. HOWINGTON: So then, since we have not heard of any of those being brought to the AP, then we're good, just as a group, that we're going to keep an eye out for these. If they start becoming even more and more numerous, then maybe we start taking actions down in the future.

MS. WOLFE: It was just a question that was brought up the last AP, like we needed to have a definition.

MS. HOWINGTON: All of these projects were just all sort of like these are new, and we need to discuss this, and so all, if all of these end up being we're just going to keep an eye on it, that's great.

DR. LANEY: The only other comment I would make, Jordy, is that the ASMFC, in the Habitat Committee, we have kind of a criterion that we apply that if something -- If there's some proposed project that we think would have a significant impact, at a population level, for a given species, then that sort of triggers a discussion, at least, of whether we think the ASMFC should send a -- Or the Habitat Committee recommends to the ISFMP Policy Board that a letter should be sent on a particular project.

That, I think, is what I would be expecting from you all in Habitat Conservation, is that, if you see one that says, okay, this one is going to -- Probably there wouldn't be a living shoreline that would have an impact at a population level of anything, but I can see how there might be one that was big enough, and substantial enough, that it might have a localized effect on a population, and I would depend on you guys to flag those for the Habitat AP.

MS. CROWE: Matt, go ahead.

MR. KENWORTHY: I support the approach of keeping a close eye on it, especially with the amount of money that is going in towards nature-based solutions and living shoreline projects these days, but my question is, I guess, just looking at your four simple categories here, what would be the reason, or objective, of the second one there, to bring it to the council's attention? What will we achieve out of that? I think, with the potential for so many projects coming online in the near future, it's important enough. I just don't know what bringing it to the council's attention would be -- What the reasoning with that would be.

MS. HOWINGTON: So all of this is going to go in the AP report. I'm going to report-out in March and let them know that we discussed living shorelines, and we discussed beneficial use projects. If you all decide on Option 2, I'm going to say we discussed, insert project here, and we think that this is going to be concerning in the upcoming future, and we would appreciate it if council members keep their ear to the ground and inform the Habitat AP if they have any issues.

Like, there's a difference between we discussed living shorelines, and we're going to keep an eye out, and I need information, and I would like it if all of you could report to us, if you could, and we recommend that this is probably going to be an issue. Those are just two different ways of informing them what's going on. One of them is going to get their attention a little bit stronger than the other.

AP MEMBER: Can we go halvsies on that?

MS. HOWINGTON: So I think what I'm hearing is that you all are good with letting them know we discussed it, and that we are going to keep our eye on it for now, and, if more come up in the future, then maybe we take different action in the future. The next thing we're going to discuss is beneficial use projects, and I'm going to give these to Jordy. because these are complicated.

MS. WOLFE: So, like why are we talking about this, right, and so we're talking about nature-based solutions to combat shoreline erosion, wave action, storm resiliency, coastal resiliency, all of these things. Shoreline, living shorelines, have been used for shoreline protection and combating storm surge, wave attenuation, all those things.

Well, we are seeing now that the Army Corps has been expanding their beneficial use program and looking at opportunities to incorporate beneficial use into the federal standard, and so what is beneficial use? It's defined as productive and positive uses of dredge material which cover a broad use of categories ranging from fish and wildlife habitat development to human recreation to industrial and commercial uses.

We are specifically talking about dredge material, when we talk about beneficial use, and so I want to make sure that everybody is aware of that. This is not material, or sediment, that's coming from different sources, like a mine, for example. This is specifically dredge material.

As part of that green infrastructure, the Corps is pushing to have several of these expanding opportunities and collaboration on right now to maximize solutions, to develop new approaches. They've been pushing to use the beneficial material up to 70 percent by 2030. Right now, they beneficially use their material at about like 40 percent right now.

Some of the projects that are encompassed under these beneficial use projects include shoreline stabilization, and so not living shorelines. This is just the dredge material, and so shoreline stabilization, beach renourishment, nearshore placement, bird island creation, fill of deep holes in offshore environments, and thin layer placement.

Each of these projects has a different level of the amount of material that they can use. Like a bird island creation, for example, they can use anywhere between like 500,000 cubic yards of material to over a million cubic yards of material. Thin layer placement projects are going to be on the scale of like 5,000 cubic yards, and so the scale of these projects does matter, as well as like, obviously, the amount of acreage that it can do, and so that's something to really keep in mind.

Traditionally, what the Corps has had to do with their material, for navigation and for maintenance projects, is they have to dispose of this material in upland disposal sites, or they have to take it offshore to an offshore disposal site, and so keeping the sediment within the system has not been something that has garnered a whole lot of positive attention in the last twenty or so years, and so they usually have to dispose of it elsewhere. That is why the Corps is pushing to have more of these beneficial projects.

Like I said, as such, the Corps is looking to have these beneficial use conversations, because, also, it poses the least costly alternative, which is consistent with sound engineering and meeting the environmental standards, and so being able to use the material in the least costly effective way is going to outweigh disposing it offshore, which might cost a lot more money, because of boats, gasoline, manpower, all of that stuff, and so we are seeing a rise in the amount of projects that are being proposed for beneficial use projects.

With that, and Stacie can back me up on this, there's not been a whole lot of established, good projects that we can defer to for providing recommendations. Not a whole lot of pilot studies that

have been done relative to the area, and so, again, North Carolina is going to be different than Florida. While we get similar projects proposed in South Carolina or Georgia, how do we apply projects that we've seen in North Carolina to the Georgia framework, or vice versa?

This is just something that we're having issues with, and, if we can go to the next slide, that introduces these challenges, and so some of the challenges that we've encountered so far, based on the amount of calls that we've been on lately surrounding beneficial use, and we see a lot more of these projects getting proposed, because the demand to expand these ports, deepen these harbors, the amount of maintenance projects that occur, and also the push to beneficially reuse more and more of this material.

We're seeing that several of these projects, from our perspective, from the habitat side, are actually disposal projects that are being labeled as beneficial use, and that is because any placement of dredge materials should be based on the needs of the marsh or the coastal system which is to receive that, rather than the opportunistic desire to beneficially reuse that sediment, and so, planning for the future, sea level rise, marsh migration, sediment losses in the marsh system, how do we plan for future coastal resiliency, under future conditions, given historic restoration practices and the need to protect current conditions, if there is no evidence to show that the marsh does not need that sediment?

Many projects are usually developed at the estuary scale. How do we incorporate an ecosystem-based approach to restoration, or an ecosystem-based approach to beneficial use projects, that balance restoration objectives and the habitat goals across agencies with different suites of resources? These are just some of the challenges that I think the states, and we, are seeing as a whole for our entire region.

These are really hard questions to answer, right, and I think this is going to be helpful for these discussions, and I think for this council, across our agencies and the different resources that our agencies are invested in.

I think the slide that Kathleen had shown earlier is like is this something that we're going to be keeping an eye out for, or these are things that I feel like that our agency should really be being involved with, with these discussions, because these are hard discussions, and so some of the objectives for having these conversations is, for the suitability of the dredge material, the volume, the contaminants, the grain size, how do we assess that, and how do we incorporate those into our EFH assessments, and how does other agencies, such as the state, how do we incorporate that into recommendations going forward with these projects?

We do want to make sure that, whatever recommendations, or involvement, we can enhance the resiliency of ecosystems, while also aiding the Corps with their beneficial use targets, and I say that because these projects won't stop. They will keep coming, and we're not a regulatory agency. We can only provide recommendations, and so some of the projects that we've been on in the past, for nearshore replacement, or thin layer placement projects, we can provide recommendations, but it's a recommendation.

I don't want to lose an argument, or I don't want to lose the battle, and not get a chip in my pocket, and so what are some things that -- As the Habitat AP, what are some things that we can put in recommendations, or that we can keep an eye out for so that, you know, we may not win, but we

can at least get something out of it that could further the conversation, or that can further us into the next step, so that everybody wins a little bit.

Like I said before, designing these projects for future conditions, historically, the restoration approach has always been, okay, where have these areas been impacted, and where can we see that there's degradation occurring, versus the conversation is now molding into where can we put this material for future preventative action? How do we prevent something that hasn't happened yet? How do you monitor for something that hasn't happened yet, right, and so those are some of those conversations that we need to have.

Finally, identifying what information and data is needed for the regulatory process to inform these project designs, and so one of the things that we've had, for many of our discussions, is that, in order to put excess material in an area, they need to show that the restoration potential, or the lift for restoration is there, and so are they showing that -- They need to be able to show, with pre-monitoring or baseline data, that the marsh is not accreting sediment, or the marsh sediment platform is not keeping up with sea level rise. Well, if that's not there, usually our first step is like, we don't think this is a viable area. Many would say that's probably not the most productive conversation, and so --

(There is a gap in the audio due to technical difficulties.)

MS. WOLFE: You don't have to, Kathleen, but, where I showed the pie chart, many of the projects that we do review are going to be our dredge projects and the maintenance projects. That takes up a significant portion of that pie, but the thing that's not shown is with, many of those maintenance and dredge projects that fill that little slice, they also have a beneficial use component, or a disposal component, because, with each of these dredging projects, they have to have a dredge material management plan in place.

If they propose a beneficial use component, that's taking up more, a substantially bit more, of our time, compared to the dredging action itself, and so where they're going with that, and for -- It's not necessarily related to the dredging from the Corps side, but, when we review -- For the NOAA Restoration Center, when they get projects for monitoring of these, the monitoring component usually takes up the most amount of those resources, like money, the financial resources, and so monitoring requirements, with these types of projects, are the thing that get hung up and stop a beneficial use project in its tracks, because of how much monitoring we would want, the state would want.

Well, we also don't want them just to have to monitor endlessly, and potentially stop a good project, and so having these productive conversations, going forward, I think is going to help the Corps, because, like Stacie said, there are civil works projects, and there's maintenance dredging on the AIWW, where they have to put it into Corps-managed upland disposal sites, but, when we get projects that are from private entities, we want to make sure that we have a very sound argument, and sound basis with the Corps, on why we don't support this, from their own projects.

If we get a project for marinas, or, you know, a town wants to dredge a small canal, so they can get big, huge boats at their private houses, we want to make sure that we have a good, established relationship with the Corps on why we do not support this, rather than just be like, no, we don't do it, we don't do it, we don't do it.

MS. CROWE: I also want to point out another example too is, when you're talking about nearshore placement, something that's been problematic is we'll see a proposal for dredging, and then associated nearshore placement, instead of going and using the expense for a disposal area, but there is never solid modeling provided with the nearshore placement proposals.

They can tell us we're going to place it here, and it's going to go down shore and promote the beaches, but they can't prove it, and even the ones that have tried have used inappropriate models, or not accurately identified the sediment characteristics of their material, and then that becomes a struggle too, because it's hard for us to get our point across that this may not be beneficial, that you're not proving to us that it is beneficial, and so that's another issue we're dealing with, too. Wilson.

DR. LANEY: Wow, and so this is a good one to have a conversation on. Could you roll forward, Kathleen, to that other slide that has the objectives on it?

MS. HOWINGTON: This one?

DR. LANEY: No, one more. Yes, that one. So, it seems to me, Jordy, that some things are pretty much no-brainers. I mean, I would think that it should be mandatory that, any time they propose a beneficial use, they should A, be determining that it is not contaminated, as David pointed out, and they should provide Habitat Conservation, and anybody else that's reviewing it, with the presumptive volume, and also the grain size data on it, so you can tell if it's going to match, reasonably, within whatever standards we have, where it's going to be put. To me, that -- I mean, that shouldn't even be up for discussion. I know it costs money for them to do that, but they ought to be doing it.

MS. WOLFE: That's -- I don't think those are the things that they don't ever tell us. Like, they almost always tell us that information. It's the location of where they propose to put it, and so, if they identify an area and say that we want to put 500,000 cubic yards here, and we think that marsh will grow there in five years, we're like, well, what's wrong with the existing marsh? We're like, well, future conditions say that this area would be underwater in fifty years, but we're like, okay, can you show us that the current marsh is not keeping up with sediment accretion, given current sea level rise? Well, no. We full stop that conversation, but, like we said, that's not a productive conversation to have.

Then, in three years, we get a project on our desk, and we can only provide recommendations, and how do we require monitoring, if the conversation didn't even make it past step one, three years prior, and so I think coming to the AP with this conversation, and the suite of things that are going to start coming to us, I think at a higher volume -- If you know anyone within the research community that is involved with sediment placement, nearshore placement, thin layer placement, modeling, bring them to us.

We would love to have them part of these discussions, and part of these conversations with the Corps, because, ultimately, we want to get something out of it too, and I don't think -- I don't think it's realistic to believe that these projects will not keep coming, because they will, and, when they start coming, they're very difficult projects. Stacie and I were on one for Murrells Inlet, earlier

this year, and that was a hard conversation. Thank goodness the Corps was on our side for it, but, like, if not, it would have been a terrible project.

AP MEMBER: This actually came up a little bit yesterday, when we were talking about the food webs, but it sounds like there's really a need, and maybe this is where the AP can come into this, to have a database of research labs in the region that are working on different topics. It seems to me that, when an issue like this comes up, if we had a database, even just relatively recently updated, within the last five years, ten years of like these are folks that are working on sedimentation in South Carolina, or in Florida, and then do a call-out. I mean, it could be that the AP's role is helping to facilitate some of those conversations specifically, but if we build that resource.

MS. WOLFE: I think, while there's like some quiet going on, I think I agree with your point, and I think, when we do consultations, it's that we're the sticky butter that joins the research community and the regulatory community, and so we try to pull the research, and the information, that independent researchers are gathering.

If we can put that into our recommendations, or pass it on to the regulatory community, then I think we can progressively move forward for a better conversation, and the problem that I'm hearing, and I'm seeing, from our conversations from the resource agencies, and then the regulatory agency, is that the regulatory agencies do not -- So Army Corps, for example, does not have the habitat expertise to say this area is a suitable area for dredge material, but they have all this dredge material, and what do they do with it?

Well, we don't have the other side of that. We don't have the research community, or the habitat experts, saying that, okay, this is a good area. We need to bring -- We know they're out there. We need to bring them into this conversation, because, when we get these consultations, unless we can join these two cohorts together, we will not have productive conversations going forward, and I feel like our job is going to be very difficult, and so, yes, it would be great to have that.

MS. CROWE: Laurent.

DR. CHERUBIN: So, basically, what you're saying is you need to have prior knowledge of suitable habitat for this type of disposal, right, and that information doesn't exist.

MS. WOLFE: It depends on the area, and so that information may exist, but we may not be having the conversations with the right people to incorporate into those conversations, or that area has not been studied yet, and so we tell the Corps -- I'm just using the Corps as an example. We tell the Corps and say that you need to go sample this area, to make sure it's suitable.

Well, they're not the habitat biologists, and so who is going to go out and sample that area, to see that it is suitable, before they dispose it there, because, if they dispose it there, and let's say it's not pristine habitat, but it's somewhat functioning, and they put that there, and they impact it, well, they're on the hook for impacts now, and they thought it was going to benefit. We need to have those people who are part of that research community informing the other side of that conversation.

DR. CHERUBIN: I think the problem is that there's a lack, in the research community, in terms of identifying those habitats, because these sort of questions have never been raised before, and so

there's a vacuum there that needs to be filled, and I think that's the biggest challenge here, is how do we go around the community and basically create a survey and say do you know this area, and do you know information about it, and that would be the way to start.

MS. WOLFE: Right, and I think it starts here, with the Habitat AP, because, for Stacie and I, we might get a couple of these projects a year, but, given the current conversations, and how many beneficial use presentations and committees that I've been invited to in the last six months, I see that our workload is going to, if not triple in the next year, to two, because of all of these projects. Given that the Corps was to go from 40 percent beneficial use to 70 percent, and that's almost doubling the amount of material that they want to reuse, and so we need to have these conversations now, and loop the right people in, before we get drowned in paperwork.

MS. CROWE: Well, and part of the problem is too is some of these projects are moving forward, because of the human interest component. It's really hard to fight the battle when you've got people standing there saying, I'm losing my home, and then the projects are ineffective, and we've set a dangerous precedent that we then have to follow, and so it's kind of -- It's a vicious cycle of despair. Scott, and then Matt.

MR. KATHEY: So I know you would prefer to have expertise from the region, but would you also -- Would it be helpful to have expertise from other parts of the country, where maybe there is a lot of attention to this, a lot of expertise in it, even though the environment might be a little bit different, but the basic concepts, and the kinds of questions that need to be asked, and the kind of information that needs to be garnered -- You know, they might be able to provide that.

MS. WOLFE: Absolutely, yeah.

MR. KENWORTHY: Perhaps you've already done this, but have you guys connected with -- It was formerly Carolyn Currin's group at NCCOS up in Beaufort. They were working on a thin layer placement project, but then there was also the project down at Jekyll Island, and so have you connected with those two groups, and gotten feedback from them?

MS. WOLFE: Yes, and so that's actually part of where this conversation has evolved, is the Jekyll Island thin layer placement got involved with UGA and Georgia Tech, and those institutions are involved with SASMI, the saltmarsh initiative, and as well as SERPAS, and so the Southeast Regional Partnership for Planning and Sustainability, which is partnership with the Corps.

Then you have Kings Island Naval, the Naval weapons station that's looking to do beneficial use projects, and there's a lot of federal involvement now, and so, yes, and the rise on these groups that are coming up, and these conversations, has just been -- It's been increasing over the last year to two years.

MR. KENWORTHY: Okay. I know those were two projects, and especially the one in Georgia, where they were doing a lot of different analysis, and looking at the function of the ecosystem, pre and post that project, and so I think it would be good data. I'm also kind of curious, or wondering, if there's a direction, or connection, here with the National Estuarine Research Reserve System. I mean, they collect a lot of information on, you know, habitat. They've got long-term monitoring, and they're doing their set data collections, to understand marsh sea level rise, and perhaps -- Maybe there's an opportunity to connect with them, to inject this interest, and request, from your

perspective, from our perspective, into priorities for those systems. It's another, you know, NOAA, you know, federally-connected agency that has long-term monitoring, and, you know, I just wonder if there's opportunity there, to use them as a catalyst for some research, and maybe it's already being done.

MS. CROWE: I'm going to jump in there for a second. There was some really good guidance that came out of the Jekyll Island and Carolyn Currin's project. The issue, and you can correct me if I'm wrong, is that folks have realized that the success of these projects is so very specialized that, if there's just minute differences in elevation, it may be unsuccessful.

MS. WOLFE: The North Carolina -- Carolyn's project was on the scale of centimeters. Like I think no more than six centimeters were placed in areas, and then the Jekyll Island was between six and nine inches, and so not only the amount of sediment, but also the scale of these projects, and so, like I said, the Jekyll Island project was about five-and-a-half acres. They used 5,000 cubic yards. We've seen some thin layer placement proposals where they're on the scale of forty acres or more, and so --

MS. CROWE: There is a pilot project, that I'm aware of going on, in Beaufort, at the Marine Corps Air Station, and it's a very small -- They're tiny little pilot projects, and they're actually like bringing the material in with wheelbarrows, so that -- You know, it's a very minute scale. Also, there's a group out of Winyah Bay, and I believe they are part of the NERR, and they are doing a desktop application, trying to look at areas where there might be good locations for test projects, and I think they're pretty far down. They had funding, I believe, for a year, and I think they're pretty close to their year and ready to give a report.

MR. WEBB: I don't know what increasing the 70 percent for beneficial use equates to in cubic yards of dredged material, but Florida's -- All of Florida's, or the vast majority of Florida's, inland waterfront property are man-made canals, and, in Monroe County specifically, we're under a mandate there to significantly increase the water quality of the canals, because they're --

In my area, the average depth of lower Matecumbe Bay is about eight feet, and we have canals in our neighborhood that are twenty-five feet deep, because they dredged those to get the land high enough to actually build the houses, and so they're going to have to be filled. Is residential canal environmental action -- Is that something that is even physical, or feasible, for some of the dredged material? Would that be something we would want to encourage the Corps to look at, other than just wetlands and marshlands?

MS. CROWE: I don't really know if they would consider that or not. Sorry. I don't really know.

MR. DEATON: Following up on what Matt was talking about with Carolyn Currin at NCCOS, Jenny Davis and Molly Bost have been continuing to do a lot of thin layer work there, and Molly just put together a presentation on some of the projects they've been involved with, going up towards -- All the way from Maryland down to Texas, and so they have some of that information in a kind of a ready-to-share format.

I think, in terms of evaluating the success of the project, the view that I take, with some of these thin layer projects is that we are in a changing ecosystem. Sea level is rising. In North Carolina, it's hard to find marshes that the projections don't indicate will be drowned by the end of the

century, and so it's one of those things where, when you're evaluating the need for the project, I think there's -- There's a line between convenient disposal and proper -- You know, whether or not this is a good thing or not, but I think, in most places, at least speaking for North Carolina, our salt marshes are all sediment deficient, for the rate of sea level rise that we're experiencing now, and especially the rates of sea level rise that we'll experience in the future.

You can ask for all sorts of, well, okay, go out there and give me sedimentation data, and things like that that are expensive, and take years to collect, but, if you're willing to accept kind of regional, or even state-level, projections as suitability, then the indications are, at least for North Carolina, that most of our marshes would be candidates for thin layer placement.

You can -- Another perspective to potentially take is at more of a basin or watershed-scale of is this basin expected to lose a net of salt marsh, or will migration offset it, and I think that's a -- If you're trying to narrow down areas that are better or worse candidates, that that might be a better approach, of looking at a basin scale and saying will this -- The expected drowning, that we expect for most of our present marshes, will it be offset or not, and there is where it won't make it a better target, and so, in North Carolina, that's mostly the southern part of the state. I had one other thought, but I lost it. I'll come back to it if I remember.

MS. WOLFE: I was just going to say like I agree with you that, yes, like, given current sea level rise projections, and how many of our marshes are projected in the fifty years, using the sea level rise viewer will be underwater, how -- That goes back to the top bullet, is how do how do we plan for future sea level rise, and marsh migration, and sediment losses, in a marsh system when traditional restoration practices have focused on impacts?

The evidence to show the needs of the marsh, and that impacts have occurred, or are occurring -- Well, for areas that it’s occurring right now, only models have shown that impacts will occur. How do we provide recommendations, or how do we how do we go back to the science that's occurring, and have those discussions for these projects, and so that's -- I think that's where we're at now.

MR. DEATON: My other thought was some of us, on the side of North Carolina, have discussed the need for a workshop, or series of workshops, to kind of have a dialogue between managers and regulatory and the researchers who are up to speed on this, because not a lot of us in like the management regulatory world are fully up to speed with where the science is, and it seems to be rapidly evolving, from the discussions I've had, and so, in terms of getting everyone into a room, that's something we're thinking about at a state level, and trying to move forward with, and I could see that being very useful at a regional level, too.

MS. CROWE: Wilson, and then we'll go back to David.

DR. LANEY: One of the things that occurs to me is the Corps does have research capabilities, you know, at their Vicksburg lab. Have they not done anything, you know, to look at all these questions and to try and develop some guidance for themselves, and everybody else, that's trying to do a beneficial use project? That's first comment, or question.

Then the second thing is to ask you if it would be useful if we put our heads together. I share the same concerns about the thin layer placement projects that everybody else has already articulated, but there are some projects that seem to be reasonably beneficial, and, again, given the

qualifications that you check for the contaminants, and you do the grain size matching, and you have enough material -- I mean, bird islands are something I know has been done in North Carolina, fairly often, I think, and so those are usually good things, you know, in terms of Audubon supports those, and the public supports them.

Colonial nesting birds are charismatic megafauna, and everybody likes to see them, and so would it be useful for us to try and put together some sort of a prioritized list of projects that are less problematic, versus those that are more problematic, and so that's the second question.

MS. WOLFE: The first question is, yes, there's ERDC, the portion of the Corps that does do the research. Again, they're not the habitat experts, though. They're not necessarily out there identifying the areas that require restoration, and I'll go back to the point of that is historically how we have identified sites, is where have the impacts occurred, or are they occurring, and so that's separate. That's a separate conversation of how do we plan for the future, future coastal resiliency. That's where I bring this to the Habitat AP, as a call for the research community and those people to be involved in these conversations.

The second part of your -- The second question that you had, I don't think of a list would be helpful, because, specifically for bird islands, the conversation for NOAA is that, if we create bird habitat, it takes away from fish habitat, and so we're filling in fish habitat to create bird habitat, and so, for EFH, we're like --

DR. LANEY: Well, let me just qualify that and say I wasn't talking about, you know, creating islands where none existed before. I'm talking mostly, again, about, if there was an island there historically, and it's eroding away, you know, putting it back, so to speak, and I know that equates to open water disposal, and I know that's been problematic in the past, and I'll give you a real-life example that occurred twenty or thirty years ago.

Moores Creek National Battlefield came to the Fish and Wildlife Service and said, hey, you know, historically, NC DOT came in here, and they cut the bend out of this stream system. It was a stream that supported anadromous fish run in Pender County, I think it is, and they wanted -- The National Parks Service wanted to fill in that cut and restore the natural sinuosity of the channel.

Well, my NMFS colleagues, at the time, and my DMF colleagues, at the time, said, no, no, no, no, you can't do that, and that's open water dredge disposal. Well, okay, technically, yes, you're dumping it into open water, but you're also restoring the stream channel to the way it was historically, and so I agree with you that you've got to look at them all on a case-by-case basis.

Back to the bird island thing again, yes, I think if we qualified it to say that it could -- That the priority projects would be existing islands that were there, that have erosional issues, those would to me be, you know, almost a no-brainer, as long as the sediment matches up with what is there already.

MS. CROWE: I'm going to jump into and say that ERDC has done some studies, and an issue that we ran into, that Jordy actually caught, was there was a modeling study on beneficial use, with sediment movement, but the sediment type didn't match the sediment type in the project we were reviewing, and so the Corps was trying to fall back on there is this study, there is modeling that

shows this is going to happen, but it was -- You might want to jump in, it was it was sand instead of silt.

MS. WOLFE: The Corps basically modeled a nearshore -- A nearshore berm for nearshore disposal, and the model showed that, if you used over 93 -- I think it was 93 percent sand, a very high percentage of sand, that the berm would maintain this shape, and it would do this, and all of these positive things.

Well, then we received a project, and they were like we used this model, and it says it's going to do these amazing things. Well, then we looked at the sand, to find content, and it was like 85 percent fine. We were like, well, great, love the model. The stuff that you put into the model doesn't work, because we're talking apples and oranges here, and so the Corps agreed with us and were like, yes, this doesn't this doesn't match. The key doesn't match the hole. Like this project -- The project got shut down, but those are -- Those are just some of the conversations that we're having.

MS. CROWE: My point in bringing that up is I think there have been studies, but I think the studies are not keeping up with the demand of the projects, which is the problem we're running into, that there isn't information, and there is a group that was working out of -- It was a consultant group out of the Northeast that was working with North Inlet, the Winyah Bay area, for a Corps civil works project, looking at a suite of options to beneficially reuse the material, and they kind of did -- I think Benjamin was part of this, too.

It was a monthly series of conversations about what are options for beneficial use, and why would we move this up or down the list, and it just kind of ended up with a spreadsheet of options, and various hurdles that each option might have to go through, and some of it was bird habitat creation, and there were there was a living shoreline component, and, you know, various things like that that the group talked through. It was -- The purpose of it was just a recommendation.

MS. WOLFE: Right, and so, going back to the project that Stacie and I just mentioned about the nearshore placement project, where they proposed to put a high, high percentage of fines, using a sand model, that would have -- If permitted, and if not caught, it would have impacted -- It was like 350 acres of sand inlet habitat, and so while --

I think that's the theme that I'm introducing with this slide, is that these projects, these beneficial use projects, they have the potential to be very impactful projects, if they're not done well, and that's and if the right people are not involved in these conversations. It has a very large potential to be very impactful to existing habitat, and so that is why we are coming to the Habitat AP, to bring your attention to it and to put out a call, for those who are interested, and have the research background with these projects, to be involved in these conversations.

MS. CROWE: Go ahead, David.

MR. WEBB: I just think, you know, I'd like to, you know, get all of us to start thinking though that sea level rises is going to happen, and the impact on some of these areas, that we're concerned about what the kind of fill that we put in there, if nothing happens, we won't have to worry about the fill, because they're going to be underwater, and so, at some point, and I know everybody --

I'm not suggesting how much we do this, but, at some point, you can't let perfection get in the way of progress, and, at some level, accommodations are going to have to be made.

The Army Corps, as Stacie said, they're going to have fill, and they're going to put it somewhere. So we just -- I think, if we could work towards not just saying no, and saying what is the least impactful way that we're going to make changes, and allow things that maybe we wouldn't have allowed in the past, but now we have to allow them, going forward, and we just want them to be the least impactful, and that might get us farther down the road than just saying no.

MS. WOLFE: I 100 percent agree with you, and so, yes, we need to we need to learn how to have these conversations, and work toward working with the Corps, rather than at that, like I said, that first stage of a project proposal, we're saying no, and so yes.

MS. CROWE: Okay, and so I think we're going to take a quick break. Let's go to 10:35.

MS. HOWINGTON: We will return to this. Don't worry.

MS. CROWE:

(Whereupon, a recess was taken.)

MS. HOWINGTON: All right, everyone. I love that you all are being good friends. We can talk during lunch. Please come back. We're going to try and focus. All right, and so -- Yes.

DR. LANEY: My follow-up comment was, I think, in follow-up to David Webb's comment, was that that it still seemed, to me, that maybe we could -- Well, we, working with Habitat Conservation, could come up with like a list of projects that says, you know, we -- Generally, these are going to be beneficial, and, if you meet these criteria -- Well, actually, maybe not a list, but maybe more of a list of criteria.

MS. HOWINGTON: All right. So, again, like I said, I want to try and focus on what we can do, and so it sounds like, to me, one of the main challenges is the lack of a scientific support structure for the EFH consults. Is that -- Jordy, does that sound right, and I can repeat myself, because I know you were just talking. So it sounded like, to me, to summarize, these projects are going to be increasing in number. They are of interest to many people, but where, and when, and what the best beneficial output of these is not known.

It sounds like we need to try and help build a scientific support structure for your consults, and so, that way, when a project is suggested, or submitted, the EFH consultation can say that location may not be the best for this type of material. However, here is another option. That way, these projects can move forward. The Army Corps of Engineers gets their 70 percent, but we get our protecting habitat goal, and so I have a suggestion.

We have three more slides in this section that basically defines shoreline stabilization and thin layer placement, and not an official definition, because those are not as contentious as living shorelines, and so we're just going to kind of review what they are, and then discuss consults and some concerns with that. I say we move forward with that, and then, in our workplan for the next

meeting, we request a presentation from -- Charlie, you were mentioning a presentation, and I didn't get the name.

MR. DEATON: (Mr. Deaton's comment is not audible on the recording.)

MS. HOWINGTON: Molly who?

MR. DEATON: (Mr. Deaton's comment is not audible on the recording.)

MS. HOWINGTON: Bost. Again, we add, to our homework, trying to come up with other resources that could potentially provide information. I could reach out to them, like we've already discussed. There is a restoring estuaries in our nation group that has an annual meeting. They might have a lot of information on places that we need to put some kind of sediment down.

The South Atlantic Saltwater Marsh Initiative, SASMI, and we've had them here, and so maybe they have some information that we could provide that we could try and accumulate together to be able to give to HCD as a support structure that they need, and so, again, I recommend we add to the workplan. I put Molly. I think it's Molly. Molly's presentation.

Then, during the next meeting, we focus on beneficial use projects, focus on what information exists. We request information from different groups that I can try and compile of known locations, known suitability, and then -- We can then, as a group, determine do we need to create a policy just for this, or do we really just need this scientific support structure, and then, after that, we're good, and that can be a decision that happens in the future, but that sounds like what needs to occur right now. Does that -- Everyone cool with that? All right.

So then, like I said, I recommend we move on to the definitions, back to we're going to define, we're going to discuss the issues and concerns that we have for consults, and then I think for the rest of the beneficial use projects, on the four, the HE AP is going to get a presentation in the spring meeting, and that's where it's landing right now. Sound good for now? I'm seeing one, two, three heads nodding. Good. We all agree.

So then, moving on to shoreline stabilization, these were the two main definitions that we had. Ultimately, it's the use of engineered, structured, vegetation, land management practices to prevent or protect from future or existing erosion. The Department of the State of Washington defined it as wide range of activities that control erosion, and so those are what shoreline stabilizations are. Now, Jordy, for your consults, what are the main concerns and issues with these?

Ms. WOLFE: So, for these, I did not have any issues. It was just to bring these up, to make the to make the Habitat Panel aware that these are some of the projects that we do get, but, relative to the other projects that we're discussing in our involvement, we usually -- We usually don't have project impacts that are going to be adverse, and, if they are, it's usually just avoid the areas that have vegetation, or other HAPCs, for the shoreline stabilization projects, and so these are these are a pretty easy consult, if you will.

MS. HOWINGTON: The other beneficial use project is thin layer placements, and it defines thin layer placement of sediment application to thickness that does not change the ecological function of the receiving and habitat, and so issues with this one?

MS. WOLFE: Yes, I do, and s this is one of them -- It's one of the ones that we were -- I was actually talking with Charlie, during the during our interim break, and so thin layer placement is the application of clean dredge sediments, and it provides a mechanism for increasing the elevation of the marsh platform through thin additions of sediment.

Ideally, this would increase the position of the marsh surfaces, relative to the tidal frame, to an elevation that's optimal for plant growth and increase the marsh's capacity to build elevation, and so rendering it more resilient to sea level rise. The problem that we see is the studies that have been done show on a scale of centimeters of sediment addition, and some of the projects that we have reviewed, or have been proposed to us, are on the metric of feet, and so the definition of "thin" gets questioned.

This is all in addition to the type of sediment, and so, usually, thin layer placement deals with fines, and so that muddy, mucky sediment grain, and so the amount, the contaminants, the location, how is it going to be spread, and there's a few different types. There's rainbowing, where they spray it in the air, and there's piping it, like directly onto the marsh platform, and then they move the pipe around. Monitoring is always one of the things that we have to question, and so these are just some of the general things that we raise when we review a thin layer placement project, but, again, it goes back to site suitability.

The primary purpose should not be for the convenient disposal of dredge material, but rather the primary goal should be the restoration of impaired, or at-risk, wetlands, with measurable benefits expected from the addition of sediment, and that is, again, going back to where I said that the Corps -- For example, they're not the habitat experts, and so identifying these areas that are at-risk, or those that are not keeping up with sea level rise, that's the information that is the big question-mark, of the areas that are suitable for the dredged material, and that we could go to the Corps and say like, hey, this is this is a great area, love it, and let's go ahead and move forward with the next steps but we're not getting even past that first question, and so we're shutting --

The conversation is shut down, and I foresee, along with Stacie, we're going to start seeing an influx of these projects. And, just because one or two projects on a very small scale -- You can see this is the Carolyn Currin project from North Carolina. They did six plots.

They're only a few meters, square meters, each. That project showed that the deposition of no more than six centimeters of sediment allowed vegetation to successfully grow in those areas. That's a very, very small area, relative to some of the projects that we're getting on the size of acres, and so the pilot areas that are suitable for restoration is, again, connecting with the research practitioners and those who are out there doing the work. I guess -- I had a really nice conversation with Charlie and those in North Carolina, who are already doing -- Who are doing just that. So, Kathleen, you had mentioned SASMI. We're having this very similar conversation with those down at UGA and Georgia Tech.

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

MS. WOLFE: In South Carolina? From -- I don't I don't know anybody in South Carolina that's looking at this. Do you? Anybody? Sorry, I was directing that at you, Stacie.

MS. CROWE: That's studying it or that are doing pilot projects?

MS. WOLFE: Pilot projects or site suitability.

MS. CROWE: There's a pilot project at MCAS in Beaufort.

MS. WOLFE: Is that the Sea Grant folks? No?

MS. CROWE: No, it's not Sea Grant, but I don't remember who it is. Sea Grant are the ones that were doing the desktop analysis.

MS. WOLFE: That's right. That's right. Okay, and so, yes, addressing the need for the addition of the dredge sediments. Again, it's the needs of the marsh, rather than the convenient disposal, or placement, of the dredge material. That's one of the problems, or one of the conflicts, that we're seeing with some of these projects. How do we -- How do we improve this conversation? How do we plan for future resiliency, and this overall conversation starts with having the right people on these conversations, and so, again, why I'm bringing it up to the council, so we can put out we can put out those feelers.

MS. CROWE: Wilson.

DR. LANEY: Again, Jordy, I'll ask the question of whether or not there is a set of criteria that would meet your needs for information, that would then result in project approval, and is that something you could articulate, or we could work with the research community to articulate, and, I mean, one of the first things that comes to mind was something I think you said earlier, which is that, if you're going to do this to a marsh, you need to demonstrate that it needs the sediment.

You know, it's not keeping up with sea level rise, and so, to me, that would be a first step, but you also alluded to the fact, I think, that it sometimes it takes a long time to gather that kind of information, and, in a lot of these cases, I'm perceiving, from what you're saying, that the Corps, or private industry, is coming in here and saying, hey, we've got the sediment, and we want to do this now, and so that, I realize, is a problem, too.

Again, if -- To the extent that you could manage expectations ahead of time, you can do that better if you've got a definitive set of criteria that you put out there and say, okay you got to meet this, and these are the expectations you have to meet, and maybe that would help to keep the wolves from the door, so to speak.

MS. WOLFE: From our perspective, we're having those conversations where we're in the right groups, and we're talking with the regulatory community, and those interested in doing those projects, and we are calling to them and saying you need to do A, B, C and D and blah, blah, blah, right, and we're going through the tiers of this is step one, step two, and these are the things you need.

That's step one, is identifying -- Identify areas that require restoration, or that that can have the functional lift from the beneficial reuse of that material, the siting, right, and the Corps is not necessarily doing that, because they're not the habitat experts. Those are those are the conversations that we're trying to have, is looping in the right people to do that, and so everything

else would fall into place, but that step one is -- It's not falling onto the shoulders of the Corps. They're wanting it to fall on the shoulders of the people who are the habitat experts.

MS. CROWE: Scott.

MR. KATHEY: Have you had any conversations with the NOAA Office of Response and Restoration about potential sites that could use this? For instance, if they've got habitat that's been damaged, and needs to be restored, that maybe there could be a matchup, where they need sediment to do that. I don't know if you've talked to that group or not. Then NCCOS has a lot of expert -- I mean, a lot of just scientific expertise in coastal processes, and I'm wondering if you've had any discussions with them because they may be a good resource, too.

MS. WOLFE: I personally have not. I have reached out to the restoration center, to ask about how they how they site, and they're mainly working with the DART program, and so like spills and contamination projects, to do some siting, and not sea level rise projects, and so a different side of the restoration conversation.

MS. HOWINGTON: All right and so I think, again, that we one of the things that we need to do is try and produce a list of these contacts that might have this information, and then I can, and Jordy can, or we can, try to contact them and see do you all have places that you would recommend as options for when the Corps of Engineers comes forward with a project that is not appropriate, of not there, but here, and that is going to be more efficient than, no, you can't. I think that's going to be a goal between now and the next meeting.

I already have on my list, and I'm going to be sending out reminders of we need EFH abundance information, and we need EFH life stage information, and so now we need who knows anything about salt marshes, or estuaries, and who would be a good contact, and I'm not asking you guys to go out and data gather everything. I would appreciate it, but just sending me contacts, or good ideas for contacts, to see if they have that info. Then, during the next meeting, reviewing the available information, receiving presentations on what all the rules are, and trying to build this support system for Jordy. That way, we have something to be able to jump off of. I think that is a good goal. if the AP approves of that thought process.

MS. CROWE: Wilson.

DR. LANEY: So we still do have de facto state subpanels. Would there be any utility to having like each subpanel talk about it, and then sort of come back with regional lists, and, I mean, does that help to divide up the workload at all?

MS. HOWINGTON: Yes, and, I mean, that would be great. I can request that of you guys. Thank you, Wilson, for assigning people work. I'll put in the list.

MS. WOLFE: I was just going to say, as part of this conversation, and so North Carolina has a guidance for the site assessment and monitoring of thin layer placement projects in North Carolina. It is a very well-put-together guidance. That very first step is the proposed site, and the siting should be considered if the placement location will be expected to have benefits, and so benefited from the material. That first step of that entire guidance, and there's like a laundry list of things, and that first step is what the Corps needs assistance with.

MR. BODNAR: That guidance document is to assist not only the applicant in providing a well composed and, you know, complex presentation, but it's also the information that our commission needs to go through the variance process, because, in North Carolina, thin layer placement is still inconsistent with our commission's rules, and so it's an automatic denial on our end, when they come in for a permit process, but that guidance document was kind of developed to provide a step-by-step guidance to allow the applicant to provide the necessary information for our commission to make an informed decision on the variance request.

MS. HOWINGTON: All right. Cool. So guidance document, North Carolina. All right. So the next thing we're going to discuss is water flow projects, and this is going to be a different conversation. Sorry. I'm finishing up my notes from the last section.

MS. WOLFE: It's okay. I'll in that. It's a different conversation, but related to the types of projects that we're going to see an influx on in the next however many years, given the increase in --

MS. HOWINGTON: Sea level rise, climate change.

MS. WOLFE: Sea level rise, the amount of storms, flooding.

MS. HOWINGTON: Increased development.

MS. WOLFE: Sunny day flooding, all the things.

MS. HOWINGTON: Right, and so water flow projects are definitely going to increase in number, and, before we move on, I would like to remind everyone that the next presentation is who wants to be on a working group to revise our flow policy? The good news is that we've already got that on the working plan, and I think that this conversation is going to help a lot of identifying the issues that are up and coming and what needs to go into that flow policy, and not just tide gates and flood projects, but storm surge, and, again, this was initiated --

If we would like to remind everyone, the flow policy was initiated because of the Indian River Lagoon issues of construction, and water flow not moving, and all of the problems that they're having with pollution because of that, and so keeping all of that in mind, tide gates, and so tide gates -- We are going to discuss them as structures used to protect personal property, land, and public infrastructure from flooding due to extreme tides and storm surges, and I can just hear your eyes twitching. What are the issues with tide gate consults?

MS. CROWE: Go ahead, Wilson.

DR. LANEY: I was just going to say that I have a little bit of experience with these things at Mattamuskeet National Wildlife Refuge, and we also had a lot of discussion, historically, about rice field trunks in South Carolina, and so the first issue is access by aquatic organisms. I think that would be my number one on the list, and then there's some interesting wrinkles to that.

At Mattamuskeet, for example, that is important spawning habitat for ASMFC-managed species, like American eels and river herring. It also has been historically heavily vegetated with SAV,

which is important for waterfowl, which is the authorized purpose of that refuge, and what has happened is the common carp population expanded greatly.

They used to fish it commercially, back in the 1940s and 1950s, and keep it knocked down, and, if you remove the carp, water clarity returned, and the SAV returned, and all the fish and birds were happy, but the SAV all went away, and so we came up with several strategies, one of them having to do with putting barriers in front of the tide gates to keep the carp out, and so, in that case, we were trying to prevent access of a target species, and so that's something that we may want to think about.

I don't know how widespread a problem that is in impoundments, or other areas where tide gates are being emplaced, to keep carp out, and that might be something that we might support, and these barriers have spacing designed to keep a large mature carp out, but let everything else through, and so the river herring and the blue crabs and the mullet and the needlefish and all the other estuarine critters that go into Mattamuskeet can still make it through. Then there is the issue of design, I suppose. We have discovered, there, that the vertical gates work a whole lot better for maintaining access than the horizontal gates do, but we can talk engineering at some other point.

MS. WOLFE: So, in our area, we're seeing tide gates being proposed in salt marshes, and so it's very well understood how salt marshes respond to tidal restriction. There's a reduction in seawater flow, salinity has declined, marsh oils become drier, and they begin to oxidize.

Spartina-dominated marshes are typically replaced with monocultures, or phragmites, or mixtures of phragmites, and so invasive species, and the resulting plant communities in these restricted marshes become drained, and then they're dissimilar to the original salt marsh community. It's not just -- Yes, we are concerned with restriction of fish passage, but the response of the vegetative community to tidal restriction, and the loss of those ecosystem services that salt marshes provide, are lost. In the last year-and-a-half, we've seen two tide gates proposed, just in Charleston, and these are proposed for residential protection from tidal waters, storm waters, and so that's the issue.

I'm reading the rest of it. What else did I put up there? So I said all of those things that are in the bullets. One of the things that we are seeing is that applicants ascertain that the tide gates will remain open 95 percent of the time, and they're restricting, focusing on restricting, king tides.

Well, we know that the upper reaches, the high marsh areas, do still depend on tidal flushing, and regular inundation of those king tide events, as well as that's where a lot of our ingress of shrimp and small juvenile fishes that utilize the estuary in those high marsh areas -- They depend on the king tide to be able to get into those high reaches, and so, if the tide gates are always closing at a king tide, we're going to be restricting not only the tidal water flow, and the flushing of that system, but the ingress and egress of those of those animals within those upper reaches of the marsh, and so those are some of the pushbacks from HCD that we see with tide gates.

I don't know where he went, but one of the projects that I wanted to talk about with him sitting here was the Seabrook Island Property Owner Association. Stacie and I worked on that project extensively, and I think we're still waiting to hear. Are we still waiting to hear on that project?

MS. CROWE: I have not heard anything back. Where we left it was all of the comments, related to all the things Jordy just talked about, and then, from a state perspective, I felt like there was the

potential for the gate to block navigation on a navigable water, and so, the last I heard, that's what DHEC was considering, and I did not hear a decision on that.

MS. WOLFE: Okay. I haven't heard a decision either.

MS. CROWE: Once again, I just want to point out that we also have the human interest component of this as well, which is where we're getting a lot of pushback, because people don't want to hear about ingress and egress when their house is under fifteen feet of water.

MS. WOLFE: These are just a few of the things that we're seeing. We have only had two tide gate proposals in the last -- That says consultations by year from 2022 to 2024, and both of those tide gates were proposed since last November in Charleston County, and so for here, and that's specifically just focusing on the Charleston area. Based off of a recent report that we saw, we think we're going to get quadruple that number in a year, based off a recent report we saw just for Charleston. That's just for Charleston County, and so that's not even region-wide. I think this is going to be a bigger problem, again, because of what we talked about, green versus gray infrastructure, and so --

MS. CROWE: I'm going to chime-in there too and just say that, once again, because we don't have the information that we need, the first tide gate project was permitted, and immediately the second one came across our desk, because of the precedent setting nature of the gate, and so somebody sees one get permitted, and then, all of a sudden, there -- You know, we hear chatter about all these other ones coming down the line, and so what we really need is data, and information, to support the concerns that we have.

MS. WOLFE: Yes, and I think the last point that I was going to -- I put a little bullet in the bottom that says the Army Corps permit does not require compensatory mitigation for impacts, because what we're seeing is that the actual structure of the tide gate might be a tenth of an acre, right, and the actual direct impact of installing that might be a tenth of an acre. We see everything upstream of that tide gate as a potential impact, because of the potential for adverse impacts.

If we go back into the MSA language, because of the tidal restriction and everything that I just said about how salt marshes respond to tidal restriction, we consider that an impact, because it is altering the habitat, and the vegetation becomes more dissimilar to the original habitat that was there, over time, and not just at the time the project was constructed, but the long-term impacts and the monitoring.

Monitoring plans are not happening, from that we've seen from the two projects, and the Army Corps is not requiring compensatory mitigation for the impacts for all the acreages upstream of the tide gate, and so, for one project, it was like five or six acres of EFH. The other project was close to eleven acres. If we go back in ten years, and that's lost, or it's converted into a different habitat, that's being lost, and compensatory mitigation is not occurring, and so that's part of that conversation that we need to have.

MR. KATHEY: So the Army Corps is not required to consider those impacts from the tide gate under the Wetlands Protection Act, under the National Wetlands Protection Act? They get a pass on that?

MS. CROWE: So I believe they're required to consider impacts over a tenth of an acre, correct, and so most of these come in, believe it or not, at like 0.95.

MR. KATHEY: But that's just the footprint of the construction of the gate.

MS. CROWE: That's all that they are considering, is the --

MR. KATHEY: They're not required to assess the impacts of that gate to the surrounding environments, under the Wetlands Protection Act? Really?

MS. WOLFE: So under a recent -- The project that we did, the project proposed a tenth of an acre. It was a fraction, under a tenth, and it was a fraction of an -- It was under an acre, a fraction of an acre, because it was the direct impact of the tide gate, and we came back and said, no, no, no, and we expect long-term direct impacts from this to occur, to all of the wetland area that's upstream of the tide gate, because of X, Y, and Z.

They came back and said they didn't agree with us, and, so far, we haven't heard any updates on the project, but that's where the conversation we're having -- That's where the conversation is ending, and so, on the beneficial use side, we're being told that we're not the habitat experts, and you people are, and you need to find the right people for the research to have these conversations, but then, when we have these tide gate conversations, we're saying this is going to happen for impact, and this is the type of mitigation that we should be seeing, and then we're having the conversation of, well, we don't think that's going to happen, and we're like, okay, and then it ends.

MR. KATHEY: So they defer to you as the experts up until the point that you say something they disagree with, and then they dismiss it. I see.

MS. CROWE: Wilson.

DR. LANEY: So, Jordy, is this a uniquely South Carolina issue, or is it happening in other states also?

MS. WOLFE: It's happening in other states, but I think, for us, because it's relative, and we live here, and we're seeing -- We didn't see tide gates being proposed back-to-back like this, and we didn't hear chatter of multiple tide gates in the same water system being proposed, or coming our way, if you will.

DR. LANEY: The other thing I didn't mention earlier is that, in North Carolina, saltwater intrusion is an issue for agricultural interest in coastal North Carolina. Even in areas where we don't particularly have king tides, and, you know, the Cape Fear has a tidal regime more akin to what you all have in South Carolina and Georgia. Pamlico and Albemarle, on the other hand, are like wind-tide-influenced more so, but still they have saltwater intrusion issues up there, and so, a lot of times, they're not worried about residential flooding. They're worried about agricultural flooding for their fields, and so that's an issue.

There's been -- I think, if memory serves correctly, there was a whole lot of research done on this topic in Louisiana, early on, again, twenty or thirty years ago, and, in some cases there, they were trying to use them for beneficial purposes, to stop their marshes from eroding away down there.

MS. WOLFE: I was going to say, in the Gulf of Mexico, they have their tidal impoundments for different reasons. This tide gate conversation is purely focused on residential and commercial people preservation purposes.

MS. CROWE: And infrastructure and roads and such.

DR. LANEY: So I agree with you. I mean, the ecosystem services lost from these things would be immense, and so perhaps it's an issue that might be ripe for litigation. I don't know. We have some friends in the NGO community that might take a serious look at that, especially if the Corps is being unresponsive to the concerns about providing any sort of compensatory mitigation at all. I mean, we've all seen the numbers for how productive salt marshes are, but that depends on them being freely accessible by all the creatures that are producing the biomass.

MS. CROWE: So, when I was doing some research, when the first project came up, I found a lot of tide gate information coming out of the Northwest, and so they were used a lot in the Oregon area, to protect agricultural lands, and, in recent years, they've been trying to manage them, or potentially remove them, for the salmon fishery. Otherwise, there are some in Virginia, but I think they were sold as a coastal resiliency tool, and so people buy into that, and I don't think environmental effects were really that well studied.

DR. LANEY: Yes, and the Pacific Northwest is where we got the idea for the vertical gates, as opposed to the horizontal gates, and the vertical ones do work better, but, again, Mattamuskeet is kind of a unique setting for application of those. There are just four outfall canals in that system, and the Fish and Wildlife Service is constrained by a legal opinion that was issued in 1934 that requires them to maintain drainage outlets for agricultural drainage surrounding the refuge through those tide gates, and so they modified them as best they could to ensure that access is still maintained for river herring, and eels, and all the other creatures, blue crabs and mullet, that come into the lake and use it as habitat, and to keep the carp out, as I said earlier.

MS. WOLFE: So tide gates might just be one of those projects where we just kind of keep an ear out, kind of keep our eyes on it for now. I don't know. We'll have that discussion, but we're seeing more and more of these types of projects coming, and tide gates are going to be proposed to combat flooding for tidal flooding and storm flooding in urban and residential areas, and it's a result of estuary urbanization, and with -- I can speak for Charleston, because we live here, but the amount of construction and urbanization in these coastal areas is -- It's not slowing down.

We're going to keep seeing these, and how do -- Again, how do we have these conversations? What would the Habitat AP like to see, going forward, if it if it's just keeping an eye out, if it's the amount of projects, types of projects, what habitats are they occurring in? We want to make you guys aware of it.

MS. CROWE: Also, along those same lines, so the Seabrook project that we reviewed -- That was project number one of their overall community response to flooding, and I think there were seven additional gates proposed, and so, if that one goes through, there will be seven more coming, and then the City of Charleston has just started in an inland flooding study, similar to the peninsula study that proposed the wall, but there were several gates mentioned in the design of that proposal.

MS. HOWINGTON: And to the next slide, into flood risk projects. All right. We're defining this, and this is the U.S. Army's military flood risk, a combination of the likelihood of natural or manmade flood hazards happening, and it's dependent on the source of flooding. Now, the flood risk projects are happening a lot, and, again, this is very South Carolina focused, and we apologize for that, but it was just really easy for us to look at the three flood studies happening right now simultaneously on our peninsula. They're all studying flooding, and so, Jordy, go ahead.

MS. WOLFE: I'm going to tag-team this with Stacie, because it's a lot to digest, and so the Charleston peninsula study was a Corps-run study for the downtown peninsula area, to evaluate tidal and storm flooding, and the outcome of that project was evaluating a seawall to go around the entire peninsula, or, well, the Lockwood side of the peninsula, to minimize flooding, and there would also be tide gates that would close when the water rose at a certain level, but the punchline of the story is what do you do during king tide of events when it's also raining, i.e., Hurricane Matthew, when we had that, and the thousand-year flood in 2015, and you create a bowl.

That project has been -- Or that study didn't really move anywhere after that, after that conversation, and so then the next study is they're putting together a planning team for, or an interagency team, and it's the Charleston Tidal -- The Charleston Inland and Tidal Flood Study, which is evaluating sunny day flooding and inland areas around the entire Charleston County, and so the islands, James Island, John's Island, Kiowa, Seabrook, Mount Pleasant, Daniel Island, et cetera, West Ashley, all these areas where we're at right now.

Some of the ideas that have already been kind of spit-balled and thrown out there are seawall and floodgates, and so, again, going back to that green versus gray infrastructure, and how are some of those green infrastructure ideas -- How can we incorporate those, and propose those, for flood risk and flood management?

How can we how can we encourage these studies to incorporate those ideas, rather than just like let's build a seawall, you know, and so progressing the conversation, having forward-thinking conversations, because this is the third study in four years, and two of these were proposed in the last six months.

Then the Charleston Water Plan, which is the one on the bottom-left, just evaluates -- Basically, it was just a desktop exercise to evaluate what is sea level rise going to look like by 2050, and what areas of the Charleston area are going to be underwater by then, and what can we do to combat it, and so, again, seawalls, tide gates, bridges, that conversation. It's having the same conversation over and over again, with not a whole lot of movement, and so I digress.

MS. HOWINGTON: All right, and so these two sections, again, what do we do with these? I think that, for these two, for the flow, or water flow, projects, I say we add them to the flow policy. I say we try to make recommendations on green options, that are not tide gates, and that are not seawall, and this is just a recommendation.

I'm not telling the AP what to do, but I foresee this is an opportune moment of -- Again, these consults, just because of the last year, because of the increase in hurricane intensity, because of the increase in floods, these consults are going to go more and more and more, and the general reaction seems to be gray infrastructure, that isn't necessarily the best option long-term for habitat,

and so where would the AP like to put these two? If you want to add them to the flow policy, well, congratulations. The next presentation is who wants to join the working group.

MS. WOLFE: I think this entire presentation has been all over the place, right, but I think the overall theme is, if we're going to look at living shorelines, or if we're going to look at a tide gate, I would much rather encourage positive conversations, moving forward to living shorelines to combat flood risk, rather than moving toward the tide gate, and that only happens if we are going into the lens of how can I make this happen, and how can I contribute to this conversation better, rather than putting on the cap of, well, what do I see wrong with it, and how can I break this down, and I think there is a -- When we have some of these conversations with regulators, we do kind of adopt a cap of how can I pick it apart, and I don't think that's very helpful, especially when the alternative is we get a really awful thing, like a tide gate, for example.

It's just like, oh, no, and this is the hill I'm going to die on. Well, I would much rather have a very happy conversation surrounding living shorelines, and so that is where the two spectrums of this entire conversation fit in, and beneficial use is in that mid-range, because beneficial use can be used to combat flood risk and sea level rise. How can we move that into the conversation on the positive end of that spectrum, versus the tide gate negative side of that spectrum?

MS. CROWE: Wilson.

DR. LANEY: So I'm good with the first three on this one. I think Kathleen's recommendation to add them to the flow policy makes sense, because it is, after all, a flow issue, and it's an access issue, and, to me, Jordy, these are the most problematic, because of the access thing, and the potential total disruption and conversion and elimination of ecosystem services that would occur, and I can't even think of any -- Well, I can think of some alternatives, but they wouldn't be very well received, from a political perspective.

You know, if you're getting flooding, move. I mean, ecosystems are going to flood. That's what they do, in a lot of cases, and so have they looked at, you know, retreat? I mean, that's one we always hear being talked about, and I know that one goes over like a lead balloon. Well, or elevation.

I mean, in Virginia, in coastal Virginia, you know, they're having the king tide issue, around Newport News, and other places around the bay, and we have friends that have property up there, and one of the things they did was just elevate, you know, build them higher, and put them on pilings.

MS. WOLFE: I think that the -- It's not on the screen now, but it was the Charleston water plan, the one in the bottom-left, and that was an effort done by Charleston County to evaluate -- For private landowners, and residences, to evaluate, and, all right, what's your house -- Look at your property, and what is your house going to look like in the next twenty-five years, and, well, if it's here, this is what you could do. You could elevate, you can move, you could put in this, but long-term solutions, on an ecosystem scale, and like these are just like localized areas. It's not productive, and I think, to your point, it’s just how do we move to that productive conversation.

DR. LANEY: I know there was a consultant, and it seems to me it may have been here in Charleston. They pulled in somebody from the Netherlands, did they not, and talked to them about,

you know, basically the big dike thing, and, I guess, if you pull that back far enough, so that you maintain the ecosystem function of the marsh, and you provide some distance for the marshes to be able to migrate inland, that would be a better ecological solution than a tide gate would, but then, in the long run, you know, the sea is not going to stop rising anytime soon. At some point, the wetlands run up against the dike and then what? You know, you still lose the function. You just have extended it out over a longer period of time.

MS. CROWE: David.

MR. WEBB: You know, I don't disagree with any of the comments about what would be the preferable choices here, but, when we talk about the difference between seawalls and tide gates and living shorelines, can you actually make a viable living shoreline that's going to provide a level of protection that people are going to demand, and I don't know the answer to that, but, if we're talking about seawalls, levees and tide gates, it's hard for me to envision a true living shoreline that's going to provide an adequate level of resistance.

MS. CROWE: Scott.

MR. KATHEY: Well, in this particular example, with the Charleston peninsula, I mean, this area has been manipulated for 300 years in a very significant way. It's hardly at all what it was like when the first Europeans set foot on the shore here, and so, I mean, it's also choosing your battles, right, and there may be some areas where the natural techniques just -- They're not going to do it.

They're not going to accomplish what society is demanding, but, in other areas, we can do it, and so we -- Like you said, you've been in some meetings where you're not sure you'll make it out alive, and that's usually when these very significant public interests are involved, and it's personal to the people in that room, and so I'm not sure how a natural solution, in this particular instance, would meet the objectives of protecting all that infrastructure that's been here for 200 years.

MS. CROWE: I don't disagree with you, Scott, and, scale-wise, yes, probably a nature-based solution isn't going to be the best choice to protect the peninsula, but, when you are talking about condos flooding on a golf course, that used to be salt marsh, it wouldn't seem like that big of a deal to restore the golf course back to a salt marsh, rather than block tidal flow, and that's part of the problem that we're running into.

MS. WOLFE: So like, twenty years ago, it was pristine salt marsh, fill it in, put condos there, review the letters that NMFS and DNR did and we opposed it. We opposed it, and said no, no, no, and, twenty years later, here we are, and it's like, well, now we have to re-impact new area of the saltmarsh, because we didn't listen the first time, and so that -- It's just a vicious cycle.

MR. KATHEY: So you compound one bad decision with another bad decision.

MS. HOWINGTON: Okay, and so it sounds like four action items. Here's what I have, and you all will, of course, receive the draft report, and you'll be able to wordsmith this. I don't think we need to live wordsmith this right now. We have the living shorelines definition that we reviewed. I'm going to send that out, via email, over lunch. You all will have until end of tomorrow. We're going to -- The last thing we're going to do is re-review that and make certain that we're all comfortable with the words.

We also have a recommendation that, when the recommended definition goes to the council, to also present the Nationwide Permit 54 as an alternative example of a definition. We will continue to maintain tracking of all of these different consults, and, if something raises Jordy's big red flag, and says, this is a huge, big deal, she's going to bring it to us.

For beneficial use projects, we are going to request a presentation from Molly Bost, and we are going to gather information to try and create a support system for consults with that, where we can try and identify appropriate areas for beneficial use projects of these dredged materials, and then, for the tide gates and the flood projects, we're going to keep an eye out on these, because they are increasing in number, and we are going to recommend an addition to the flow policy up to the flow policy working group. Does that sound good, like a good summary of our action items? All right. So then, with that, I'm just going to go ahead.

MS. WOLFE: So, when Stacie and I, and I just say us right now, right, but, whenever we get a project that -- Let's just say a tide gate, for example, and, if we get a tide gate project, would the Habitat Panel like it if we sent them what we're reviewing, like what boots on the ground, like what we're dealing with? Would that be helpful for everybody to see, like in the moment, like if we do get a project with substantial impact?

MS. HOWINGTON: The question I would have is, would you be asking the AP for feedback, or would you just be an FYI, that this is a pretty big project that's coming down the pipe?

MS. WOLFE: I think, initially it would be an FYI.

MS. HOWINGTON: Okay.

MS. WOLFE: But, if we need to solicit comments, then like we can, but I think it would just be like, hey, just so you're aware, this is why we brought this up at the October Habitat meeting, and like this is what we're seeing and dealing with.

AP MEMBER: Yes. I'm listening to a lot of what you're saying today, and I constantly am trying to think about like what's the process, what's going on behind the doors, and, you know, how is it all being cooked up, and that would be extremely helpful, for me, to have further conversations on this, to know what the discussions are, what you guys are asking, and how you're navigating that, and so I have a strong yes on that.

DR. LANEY: Yes, and I would say yes for me too.

MS. HOWINGTON: We're double-checking that this is public record, and we're pretty certain it is.

MR. KENWORTHY: I'll just add that for awareness is the most important part for me. Like you said, down the road, maybe you have a request for input, but, for me, it's more of like awareness of the situations.

MS. WOLFE: Projects that go out on public notice, like it is available to the public, and so like that information is publicly available.

MS. CROWE: So I'm wondering if it might be better to provide them with some of the projects we've already commented on, rather than -- So, that way, it takes out the idea that we're soliciting input.

MS. WOLFE: Okay. Yes, that sounds great.

MS. CROWE: So possibly provide the public notice for the Seabrook project and then the letters that both Jordy and I wrote from our agencies.

MS. HOWINGTON: Sounds good. I have added that to the action items. I'll wordsmith it later, and I will make certain to forward that to the HE AP. Okay, and so then next thing. All right. So, like I said, in April, the HE AP received a presentation from the Indian River Lagoon representative. In response to this presentation, we wanted to add revisions of the flow policy to the workplan.

The council approved this in June, which is great, and so the next steps for this are we need to establish a working group. The plan will be for the working group to meet at least three times, or maybe two, before the next meeting. I have spring 2025, but we're going to be discussing meeting dates tomorrow, and so, before the next meeting, meet at least three times.

The goal will be to review the existing policy, identify data needs, identify research needs, assign writing responsibilities, and then the second webinar will be we check-in, see what work is done, if there are any questions, if there's any follow-up, and, for the third webinar, the goal would be to finalize our revisions, with the goal being that, at the next meeting, we'll have an updated flow policy, fully understanding that we have come forward with a final energy policy twice now, and so there might need to be some follow-up, but, most likely, the majority of the work will be done during those first three meetings.

So, now that we've established that we can do this, and we've established that tide gates and flood projects are going to be a big deal. Is there anyone that wants to volunteer? We've got one. We've got two. One moment. So group volunteers. Is there any discussion that we want to have, before I open up for volunteers? Sorry. I feel like we've discussed it a lot. Okay, and so we have volunteers of Wilson Laney, Stacie Crowe, and anybody else on the advisory panel that wants to volunteer? David Webb. Jordy. Okay. Anybody else want to be -- All right. Matthew. Anyone else have interest?

DR. LANEY: Just to clarify, as always, I presume the working group would have the latitude to solicit the engagement of outside experts, to the extent that they're available and willing to do that, and I'm thinking --

MS. HOWINGTON: Yes, very similar to what we did with Chip Collier and Lauren Gentry.

DR. LANEY: Right, and I'm thinking we have a couple of people who have a lot of expertise in that arena, who have recently moved to the FERC in D.C., and we might want to tap into one or both of them.

MS. HOWINGTON: That can be a decision that the workgroup makes in the first meeting, because, again, the first meeting will be review the policy, figure out do we need to pull in somebody else, do we need to pull in other data, and who wants to write what, and I volunteer Wilson for doing an update on references.

DR. LANEY: I can certainly do that. That's something I do a lot, but I would be coming at it from the perspective mostly of river flows and, you know, ecological flows for the rivers, and then that would include saltmarshes as well. I mean, slapping a tide gate in a saltmarsh certainly disrupts the ecological flow in the saltmarsh, and so I think that's the big umbrella, maybe, for this whole policy, is what do we need to maintain ecosystem functionality and sustainability?

MS. CROWE: I have a ton of references.

DR. LANEY: Yes, and I've got a bunch, too.

MS. HOWINGTON: All right, and so our action items are -- We've already discussed some revisions that we would be interested in. We've established a working group. That was the fastest talk I've ever given. I will be in touch with the working group, probably after the holidays, because I understand this is not a great time.

I'll send out an email letting everyone know, and establishing a meeting, and then we'll get started in the first of the year. All right. So then volunteers, and we already did that. Then if everyone would give us two seconds to evaluate where we are, because I believe the next talk would be policy, but I think it might be a good time to break for lunch. We've got a hand raised.

AP MEMBER: Sorry. Thanks. Can I just ask one quick question to Jordy that's kind of not quite this? For EFH, if someone submits an EFH assessment to you guys, that your office is not able to have the time to do, do you reach back out to them and let them know that you aren't going to be able to provide any conservation recommendations?

MS. WOLFE: It might be easier to talk offline, because it depends on the project.

MS. HOWINGTON: Any other questions, or comments? We can't do anything between now and noon.

MS. CROWE: Then let’s break for lunch right now.

MS. HOWINGTON: All right. An hour-and-a-half?

MS. CROWE: An hour-and-a-half?

MS. HOWINGTON: Does that sound good to everyone? So back at like 1:15?

MS. CROWE: Yes.

MS. HOWINGTON: All right. We’ll break, and we’ll come back at 1:15.

(Whereupon, a recess was taken.)

MS. CROWE: Everyone online, we are coming back to the table, and getting started back up. One moment.

MS. HOWINGTON: Okay, and so the current update for the agenda, for everyone, is that Paula has not responded to my email. She informed us, yesterday, that she was not feeling great. She was hoping to make it in person today. She was unable to do that, and she asked that we try to reach out before we move forward with the energy policy. I sent her that email before lunch. She has not responded, and so I'm going to assume that she has taken some Dayquil and is taking a nap, and so I will be presenting the updates to the energy policy.

During that conversation, we will also be integrating in the recommendations that we developed during Avery and Brendan's talk yesterday, and so those are going to be two things that we need to get done. Then, afterwards, we're going to move on to Kevin Spanik's talk on the Army Corps of Engineers project for reefs. If we have additional time, either we will be reviewing the fishing effects database that has been developed by the Mid-Atlantic, or I will be presenting on the habitat blueprint, and that should get us to the end of the day, one of the two.

We will still need to meet tomorrow, but we're going to finish before noon, and so I -- Just take that as you will. We have gone faster than we expected, and I apologize to anyone that that inconveniences, and so, with that, then let's work on, or actually, Madam Chair.

MS. CROWE: Yes.

MS. HOWINGTON: I mean, can I move on? You're in charge.

MS. CROWE: I was going to say, wait a minute, it's your presentation.

MS. HOWINGTON: All righty, and so, to remind everyone, this energy policy was brought to us during the April meeting for the Habitat Panel. During that, we also received a presentation from BOEM and BSEE about decommissioning and the thirty-year long-term plan, and, after that, we had some clarifying statements that we wanted to add into the policy, and some references and some other links, and so we were able to add those in.

We did not have an additional working group meetup, since it was very specific to add in a recommendation about decommissioning, add in these specific references. They were really, really detailed, when we had that discussion, and so we were able to just add in, as you guys recommended. We also identified some issues with Table 1 and Table 2 that we were able to clean up, and so that was good, and, of course, our overall approach.

We're doing our best to be forward-thinking and have life cycle considerations. We are actually the only council that our policy includes decommissioning details, which has been helpful for the Mid-Atlantic and Northeast. They actually have referenced our policy now, and so we copy from them, and they copy from us. That way, we're all streamlined across the Atlantic coast. It's good, and so I would appreciate it if we could just pull up this policy.

We updated, of course, the date, right there, because we were working on it in September, and so I fixed that. I fixed -- Where were we? Sorry, and this is where I wish Paula were here, because

she had these memorized, but I do not. I am going to have to wing it in the decommission area. Everyone close your eyes while I scroll really fast.

We added in some information, in the site decommission and structural removal, specifically about the deposition, about operation of plants, and where was it? I apologize. Let me see if I can zoom-in. There we go.

All right, and so, for the decommissioning, it's the council finds energy exploration and development activities throughout project life cycle threatened or potentially threaten EFH and associated council-managed species through the following mechanisms, and so this is identifying things, ways, that this development could potentially cause issues. We went deposition of sediments, direct mortality, of course, operation of power plants, impacts on life cycles. A lot of these were already approved by you guys. I'm trying to find specifically what we added in, and so give me one moment.

I think it was just at the very end. Yes, and so I believe we added in this interactions along project life cycles, legal and sub-legal, affect the magnitude of overall impacts. Such interactions could result in a scale of effect that is multiplicative, rather than additive. The effects of these interactions are largely unstudied and completely unknown.

Then we also added in alterations of amount and timing of river flow or blockage, and referred to the flow policy, and so, when we update the flow policy, we will also be updating any impacts on windfarm development and transition cables in that section. All right. Then let me see the next thing we added in.

So we added this in, again, and local magnetic field and animal orientation and navigation, and then I believe best management practice is structure removal. Where is it? We will come back to that in a second. I'm looking for structure removal. Here it is, and so we added in a lot of these, these references here, and then that was already added in.

Decommissioning should include coordination with state and federal agencies, to determine ownership, permitting, and monitoring. We added that information in, as well as this reference to BSEE, and then finally, project siting environmental review. Where are you? So we're moving past all the best management practices, because we had that. Where's project siting? Give me one moment. Here you go.

Siting and environmental review, there you go, and so we have developer should accurately map and characterize benthic habitats. We have transmission cables. We have our environmental impact statements. I believe this was it. In fact, evaluation should include quantitative assessments for each habitat, based on recent scientific studies, and so, again, all of these were recommended to you. We basically just copied and pasted them.

All of the references that you all suggested, we copied and pasted those, and so the only thing that we really need to discuss is from yesterday's conversation, where we suggested adding in one more recommendation about the monitoring plan, which should involve not just where the development has occurred, but also external to that, and so, Scott, you gave me this language, right?

MR. KATHEY: Yes.

MS. HOWINGTON: Okay. I pulled -- So you gave me a lot of background in your suggestion, but, since it is just a recommendation, I pulled what the recommendation would be. During permitting negotiations between the developer, BOEM, and NOAA Fisheries, equivalent funding and research rigor should be required for understanding the function and lost ecological services of the displaced habitat over time, including impacts of the introduced windfarm infrastructure to the integrity of the predominantly native habitat in the surrounding area.

Equal contemporary study analysis of both ecological regimes should provide future policymakers with more adequate, balanced information to determine the appropriate final disposition of the decommissioned infrastructure and a better assessment of both ecological and sociological benefits and costs.

Again, the goal for this is to end the monitoring plan, which is required when they create these windfarms and they develop them, to make certain that we're not just studying where the windfarm exists, but the surrounding area as well. Any thoughts or comments on the wording, and then we're going to discuss where we think it should be somewhere in this process. All right. No thoughts or comments. Everyone loves what Scott wrote.

DR. RUNDE: Okay, and so, Kathleen, sorry to cut in. Can you hear me? This is Brendan.

MS. HOWINGTON: We can.

DR. RUNDE: Great. I threw my hand up there. The only thing that I would raise here, and I really like this wording, and I think it's a great idea. The only thing I would raise is that “equivalent funding and research rigor”, and, if the funding and research rigor for the infrastructure itself isn't where we think it should be, then neither of them will be, and so just pointing that out, that, if we don't like the amount of research that's being done on the structures, this doesn't require anything better for the areas that aren't structured. I don't know if that's something that we want to tweak here, but it's the only thing that I thought of when reading through this. Thanks.

MR. KATHEY: Would the word” appropriate” instead of “equal” fix that problem? When I wrote that, I was working from the assumption that the primary research that's done is always on the developed part, and if the other gets virtually nothing, and so I figured “equivalent” would be an improvement, at least for the native habitat, but I think that the comment that was just made is that might be zero, right, and we don't know what the guarantee is for the funding, and so, if we put the word “appropriate and equivalent funding”, then we can say whether it's appropriate or not, or at least somebody could.

DR. RUNDE: I think that's fine. Thank you.

MS. HOWINGTON: The monitoring plan does have to be submitted, right, Alex?

DR. SCHNEIDER: Yes, and there's a variety of different surveys, and monitoring, that the lessee has to do over the course of the lifetime of the farm. I have to double-check on some of the habitat monitoring. We do a lot of like benthic community and fisheries monitoring as well, that do require control sites that are equivalent habitat and abiotic conditions, so that they are

representative of what's going on in the windfarm. That's the intention, and I just have to double-check on the habitat aspect of that.

MR. KATHEY: So my original text didn't address the control sites and the reason and how this would differentiate from a control site, and so I don't know if --

MS. HOWINGTON: I can pull up the original. I just was concerned that it was too wordy, which is why I pulled out these two sentences.

MR. KATHEY: It's the way I write. It probably was too wordy.

MS. HOWINGTON: So do you think that this is overstepping, where this is saying the control sites are not appropriate, or is this just -- This is basically the control sites are meeting this requirement, or recommendation, and not requirement.

DR. SCHNEIDER: I think, if there's specific requests, in terms of the volume of control sites -- I mean, in some cases, you know, this is not an area equivalent in size as the wind leases. These are large areas of heterogeneous habitat and conditions, and so having, you know, an equal equivalent size piece of ocean to monitor is not practicable for these developers, but I can share the guidelines that BOEM provides for benthic habitat data, as well as fisheries monitoring. Those are also currently being updated, and so, if there are specific concerns about having controls in those guidelines that BOEM provides, we can definitely talk about that on the BOEM side. Those are, of course, just guidelines for the developers, and not necessarily mandates. They are tied to our regulations, but they are a guidance document, but I can definitely share those.

MR. KATHEY: So, in our discussion yesterday, my understanding was that the developers typically conduct the monitoring and research at the project site, but they don't have an obligation, typically, to research the dynamics of the ecosystem and the native habitat, and so, in my mind, a control site serves the study of the primary research area. I mean, it provides some contrast, but you're not necessarily looking at learning more about the ecology, and the dynamics, of that native site, as much as you're going to be looking at -- So it's more for a kind of a compare-and-contrast, more than really studying, over thirty years, the ecological structures, and function, of the native site. That's how -- In my mind, I don't see them as necessarily the same thing.

The objectives are going to be a little bit different. The reason you have control sites is it's serving your research in the primary research area of interest, rather than in that site itself, but, if anyone has a different perspective on that, I would be glad to hear it. I am not a scientist by trade. I'm a policy person.

DR. SCHNEIDER: I have a quick follow-up. I definitely recognize that there may be a difference in monitoring an area for the characteristics, or for the flora and fauna that reside there, versus the functionality of an ecosystem, production, ecosystem dynamics, and things like that, and so, if that's the goal, to have an understanding of habitat function, and ecosystem connectivity, in terms of monitoring and controls, that's somewhat different than just understanding, you know, what the impact of the farm is in that specific area, and so, if that is the ultimate goal, having that language clearly spelled out would be useful.

MR. KATHEY: That traces back to the fact that. over, you know. the initial assessment of the area, the native area, is going to be a couple years, probably at best, of extensive research into what's the existing ecosystem that we're about to alter, or potentially alter, but then, after that, it just becomes a control site. That kind of in-depth study won't be done, not likely, because the developer is really more interested in the site that has been approved for their development than they are about the area that was displaced, but at that time, they've got their permits, and they're going to do their work, and it's of no interest to them, necessarily, but, to the management agencies, having that kind of --

As they're learning more and more about the developed site, if we're also learning more and more about the native area, over that same thirty years, and how even the surrounding native area is changing, then, when they have to make an assessment on the end of this whole project, they've got an equivalence of information on both habitats rather than, hey, we've got the most -- We've had the past thirty years of progressive research monitoring of the developed site, and then, when we go to make our assessment at the end, we'll have to go back to information we gathered thirty years ago, at the status quo of that native habitat at the time, that we haven't really been tracking over that thirty years, and so that's what I have in mind.

I can't remember who it was yesterday that said, well, typically, BOEM, and NOAA, and the developer get together, and they negotiate a transfer of funds to the management agencies to do work that the developer doesn't necessarily feel inclined to do, and so I was thinking this guidance would be kind of an aid to those management agencies to know this is what we should do with our negotiated funds for our own research. I mean, they may be doing some studies to verify the veracity of the work at the project site, but they could also negotiate for a funding for them to do their own studies on the side to maintain a growing base of knowledge on that native habitat over the next thirty years.

MS. CROWE: Anyone else?

MR. KATHEY: Does that even make sense to anybody, or is it only in my mind?

AP MEMBER: Well, I want to be sure I'm understanding it. Are you talking about the area outside of the windfarm itself?

MR. KATHEY: Exactly. You know, we were talking about these areas typically are sand-bottom habitats, and so, you know, if the predominant habitat in that area is sand bottom, then, as we're studying this new hard substrate, this hard habitat, over the next thirty years, are we also progressing in our knowledge of what's happening in that sand habitat that's surrounding it that, you know, would have been the same.

AP MEMBER: But then you're into the argument about how far away are you going to -- You know, what is the scope of that research, and would it be easier to compel if we were talking about from one end of the windfarm to the other, because there's going to be a lot of area. If they're about a mile apart, if that holds true, that's a pretty significant area. It isn't completely unaffected, but it is somewhat unaffected, and I don't know how you would justify, you know, going twenty miles, or thirty or forty miles away, from the farm area and seeing if there was an impact on that. I don't know. I'm just looking at the practicality, and the reluctance of people to do this, if it's too big of a scope.

MR. KATHEY: All right. Well, that would be up to the research design, in those negotiations, as to what they felt was appropriate, that you could study the native habitat without the influence of the windfarm, so you can see this is what the baseline would have been, had their project never materialized.

AP MEMBER: Just to add to that, yes, I mean, I think it makes sense, from an experimental perspective, like having a control, but I wonder too if you then have to consider, you know, what impacts, or what changes would you see in that sort of undeveloped habitat, in the context of climate change and, you know, currents and sedimentation, but would it be subject, or not subject, to fishing and trawling activities, or would that area that's sort of undeveloped not be fishing, or experiencing any fishing pressure, or trawling activities, because of the proximity to the wind energy?

MR. KATHEY: Well, I don't want to get too far in the weeds, but you could apply the same management regime there that's applied in the wind field, and so, if there's no fishing allowed in the wind field area, or in the, you know, windfarm area, then you might consider setting up a research area where there's no fishing allowed there as well, and so you would have more of a comparison, but, again, that goes back to the design that they would settle on in those negotiations.

MS. HOWINGTON: So, for our guys, honestly, there would be more fishing near the wind development than there would be in the middle. The impact would be kind of congruent with the development, and the creation of these infrastructures, that our fishermen are looking forward to, and so I think -- I think there's really no way to control that, and I think the point of this is to try and say that these sandy areas are not unimportant.

Watching these habitats, these corridor areas, these areas with we know species that are sand dwelling, monitoring them, because you are taking away sand habitat, is important, and I also agree that you can do it in between the two farms, and I think that study is completely relevant, but I don't think that we can control for fishing, because the fishing is going to be attracted to the windfarm, more than anything else.

MR. KATHEY: Were you referring to commercial fishing or recreational sportfishing, or were you even making any distinction there?

AP MEMBER: I wasn't necessarily making a distinction. I was just trying to think of other factors outside of, you know, climate change, and so that -- You know fishing would continue, as it would, with or without the fishing area, on a commercial scale, I suppose, but then the wind energy would attract --

MR. KATHEY: Yes, and, your references to climate change, that was also something I was considering, is that, if the only information, or the last information, the last solid information, you had about that surrounding area, the native habitat, was thirty years ago, and there's been all these natural changes in the environment due to climate change, it would be nice if you had been keeping pace with that and seeing how that has affected the sandy bottom areas, so that when you're, again, making this assessment -- I'm trying to think of these policymakers on the back end of this, that they have an equal amount of information on both sides to be able to make that decision that they're

going to have to make about whether this infrastructure stays or not, because the pressure, we all know, is going to be leave it.

It's going to be to leave it there, and, if you have information that shows, well, maybe that's not a good thing, because we've been tracking what's going on, and we know what ecosystem services we get here, and we know what ecosystem services we get there, and maybe it's worth the cost of getting this stuff out.

MS. CROWE: Okay. Alex.

DR. SCHNEIDER: I was just going to reiterate that, in the guidance that BOEM provides to developers, there is guidance to identify areas to monitor that are similar biologically, and have similar hydrodynamic abiotic conditions, for monitoring. The question of what is a baseline, what is baseline data, in today's day and age, is definitely something the wind industry, regulatory bodies, and scientists are grappling with, and knowing that we have long-term trends, and warming, and currents changing and weakening, and how variable biological data already is.

There's been a lot of work to look at the variance in background data, to understand how good are our baselines, and how good do they need to be for us to make informed decisions in ten years, in twenty years. We do have the ability to look at windfarms in Europe, who are at their twenty-year mark, and who have long-term monitoring programs that have been around for a decade or two, and learn from those projects as well, but that's definitely something that's on the front of everyone's mind in my world.

MS. CROWE: Wilson, go ahead, and then Simen.

DR. LANEY: Well, I was just going to say that there are analytical techniques that would enable us, in theory anyway, to assess the impact of such a project. We used to use, in the Fish and Wildlife Service, a modeling approach called habitat evaluation procedures, which basically took an existing section of the landscape and looked at it in its current condition and then applied the impact to it and assessed its future condition.

We did it in terms of habitat units. You know, you have a habitat suitability index model that tells you what the present day value of it is, versus what the future value would be, and so that would be one approach you could take. I still think your idea is better. I still think, you know, monitoring for an equivalent period of time, of your control sites versus your project site, would be a better approach, but there are modeling approaches that might provide us with some insight to what's going to happen.

MS. CROWE: Simon, did you have a comment?

MR. KAALSTAD: Yes, and I was just going to, again, echo Scott and ask Alex, for those twenty-year projects in Europe, do they have, you know, that twenty-year data of undeveloped? They do, so they would have sort of a control, or that, you know, just to go back to Scott's point.

DR. SCHNEIDER: Yes, there's plenty of studies out there. I don't know, off the top of my head, if each and every one has a control, but, for the most part, areas are set aside to monitor alongside

the windfarms, but I can definitely point people in the direction of resources, both to studies and then to the guidelines that we've developed.

DR. CHERUBIN: Just one quick comment. I mean, we need to think about the windfarms. They have avoidance zones, and so you can't really get close to the structure itself, and so I think, in terms of fishing, there's some regulation that are enforced by the owner of the farm, right, in addition to whatever other regulation is out there, and so, when you say about fishing, that's going to be my fishing spot. I think there's some -- I mean, we should think about it that they may not be able to have access to those structures.

DR. SCHNEIDER: Typically, boats can't access the windfarm during active construction times, and so, when the farm is being constructed, there are safety concerns that limit access to the lease area, but, when the farm is operational, they're -- BOEM has no restrictions for access, from either fishing commercially or recreationally.

DR. CHERUBIN: There is a safety zone around each turbine, to avoid any risk of interaction with the turbine, and so, whether it's on land or in the water, there is a safety zone around each of the turbines. You can't get close to it if you're not part of the company or, you know, the --

MS. CROWE: Jordan, go ahead.

MS. WOLFE: I just wanted to go ahead and play devil's advocate here, that, considering the size and the scale of these projects, having large control areas that the developer would be responsible for, having controls and then, within their wind -- Comparing to those areas within the lease for such a long period of time, I think it would also place unnecessary burdens on the -- Like on the consultation process, because they are already sited to avoid complex habitat, and go for soft bottom habitat, in these sandy areas, and so, for the species that the council manages, we already have a pretty good idea of the species that are there.

The impacts to those species in the soft-bottom habitats are going to be relatively less adverse, as opposed to those in complex habitat or hardbottom habitat, and so I just wanted to go ahead and bring that up, that I think having so much data collection, and putting that impetus on the developers, I think might make the process a bit more complicated.

MS. HOWINGTON: Stacie just asked if I want to summarize, and I think the summary is we like this, but do we want to include it? I think a lot of us like the idea of required research and monitoring outside of developed areas, so that we have long-term monitoring, and not just six months of monitoring of undeveloped sections.

I think we're all a little hesitant, because we have Alex over here telling us the BOEM already includes those control areas, and that having an equivalent geographic size would be a large lift, and would be difficult. Jordy is telling us that having all that increased information would also be difficult, and so, maybe instead of "equivalent" --

MR. KATHEY: So size and area was not part of my considerations here.

MS. HOWINGTON: Right.

MR. KATHEY: It's the same level of attention, and funding and rigor, because -- I make a distinction between monitoring and research, and I can foresee that there's going to be a lot of research at the developed site about predator-prey relationships, about, you know, ecological function there. That's not just monitoring, to me.

That's, you know, researching relationships within the food web, within the ecological system there, and, if we're going to that kind of rigor on one, shouldn't we be doing it on the other, so that, on the back end of this, when you're looking for a baseline -- Okay, and so if the determination is we want to get we want to pull all this infrastructure out, then, okay, to restore it to what baseline, the one thirty years ago or the one now?

If all we have is, you know, as far as the preponderance of data for the native habitat is from thirty years ago, because we haven't been keeping up tracking that. Then it's going to be at a disadvantage in the decision making process, to me.

You're going to have a whole ton of information about the developed site, and you're going to have a dearth of information about the native habitat that was there before the development, and we're saying, on the beginning of this, that we're going to give fair consideration at the end of this, as to whether we're going to keep this infrastructure in or take it out, because that was my takeaway from the April meeting, was that, if a project gets approved today, there's no guarantee that that's going to be removed.

It's kind of the default, but that final phase of what happens to that infrastructure doesn't get decided until thirty years from today, Right, and so, when you get to the backend, have we made the appropriate decisions, and preparation, on the frontend, so that they can make sound decisions on the backend?

DR. LANEY: So, I like Scott's language, and I think it's totally appropriate, and eminently logical. Maybe if we stick the word -- Let's see. After the “should” in the second line, maybe if we put the word “ideally” in there, and that would, you know, modify it slightly and indicate that we're deferring to the discretion of the agency, but, to me, that is the ideal situation, that it would be equivalent.

MS. WOLFE: Nobody attack me. What ecological services would be lost in sand habitat, that we already don't know, by replacing them with artificial reef structure?

MR. KATHEY: Well, I don't contest that we know -- That currently we have a good sense of what those ecological services are, in that general locale, but will we know thirty years from now, or are we going to base the decision on what we know today? If we're looking at a lot of climate change impacts and that type of thing, have we kept pace, or do we say, well, it doesn't really matter if you're looking at sand habitat off of Florida, and you're looking at sand habitat off North Carolina, it's all the same.

I'm not a benthic ecologist, and so perhaps it is. You know, there may be someone in the room who knows better than I, but I'm assuming that, if you've got information about that particular locale, as opposed to superimposing it from another area, and just assuming that it's the same, it's going to be better to have that kind of resolution, but maybe I'm worrying about too much.

DR. LANEY: So to Jordy's point, I mean, my answer would be it depends. You know, we all, I think, would acknowledge that any sort of a habitat with a three-dimensional structure is going to provide for, generally speaking, a higher level of biodiversity, and possibly greater production, than an unstructured sand habitat, but, having said that, then I'm thinking about Atlantic sturgeon in those sand shoals off North Carolina and the fact that even those are structured, to a degree. I mean, they have elevational changes. They have interswale depressions that may be of importance to those fishes for -- That use them for foraging, you know, for resting and things like that.

Again, I'm like Scott. I just -- I don't know, without looking into the literature, a whole lot more about, you know, those sand habitat areas, and hopefully somebody's done some work on those that we can uncover somewhere, but maybe not.

I mean, they're -- You know, those are -- The other big thing about those areas too is, if you're going to trawl somewhere off the east coast, that's where you're going to trawl, usually, and what impact has forty, fifty, sixty years of trawling had on those areas as well? What does trawling do to bottoms?

Well, it tends to homogenize them, and, the more homogeneous they are, the less structured they are, and then the higher the likelihood that you're going to have a faunal assemblage that is composed of those organisms that either are adaptable to or prefer disturbed habitats, which tend to be simpler types of, you know, faunal assemblages than those from structured habitats. I don't know. Those are my thoughts. I don't know where that helps a whole lot, or does anything at all, except make me feel better to have articulated them.

MS. HOWINGTON: Okay. I love the discussion, but we need to determine are we including this or not? This is a yes or no. Do we want to include this, and wordsmith is the in-between.

MS. CROWE: I'm going to say yes, we should include it.

DR. LANEY: I agree with Stacie. I think, yes, we should include it, and let the council talk about it.

MS. HOWINGTON: Brendan, you have your hand raised?

DR. RUNDE: Thank you. I'm on the wordsmith team. I think that the intermediary option, and I wonder if it's more within the scope of this document to say something like we recommend that BOEM, NOAA Fisheries, and the developer, and I'm just thinking out loud, and you could type it if you want, but that the three entities emphasize, or ensure, the inclusion of monitoring of soft substrates in addition to novel structures, or something like that.

MR. KATHEY: So to date -- I'm sorry, go ahead. To date, these have been sited in sand bottom areas. Does anyone foresee that it may not be a sand bottom area, at some point in the future, and that, if they found a really good wind field someplace, and they had some live bottom reef or something, that they would not potentially petition to put in a farm in any other kind of habitat, because if we make this too soft sand bottom -- You know, maybe we should leave it open for other types of habitats, even though, at the present time, it's predominantly soft sand bottom. I don't know. Do you think it'll always be this way, Jordan, that they'll always go for these?

MS. WOLFE: Let's see. Carolina Long Bay is currently in the discussions, and it's sited, and that has a large pavement area, and so if that answers your question. There's also windfarms up in the GARFO region that are in hardbottom areas, and so, no, it's not just sand habitat, which kind of leads me back to my previous point. It's like we want to push them to sand habitat. We want them to go -- Like we don't want them to be in complex or hardbottom habitat. We would want -- We would rather than being soft sediments further offshore.

MR. KENWORTHY: I really appreciate all this input on a very challenging topic, and especially hearing your perspective and, Alex, your perspective, from your position. I think one addition is we should add the word "long-term" into this, because I think, if I read it right now, I could interpret that to be, well, we could do it for a couple of years, and be done with it, but I think if we add "long-term", and maybe "ensure the inclusion of appropriate and equivalent long-term funding" might capture that.

I also support including it into the document. I think we lose sight of long-term funding on a lot of things. I think we learned, in the Gulf of Mexico, years ago, that long-term monitoring is extremely valuable in understanding the ecosystem, not only for natural disasters, but for other reasons, and so I think, as an advisory panel, it's appropriate for us to put forth a strong recommendation here, even though it might have some challenges in wording and getting across the finish line, but I think it's appropriate.

MS. HOWINGTON: All right, and so, based on the feedback, this is what we've ended up with. Recommend that, during permitting negotiations between the developer, BOEM, and NOAA Fisheries, ensure the inclusion of appropriate and equivalent funding to long-term monitoring of the surrounding substrates, in addition to the developed structures. Equal contemporary study analysis of both ecological regimes will provide future policymakers with more adequate, balanced information to determine the appropriate final disposition of the decommissioned infrastructure and a better assessment of both ecological and sociological benefits and costs. Brendan.

DR. RUNDE: I put my hand down, because I like what you've got there.

MS. HOWINGTON: Yay. I think that hits on we want surrounding substrates, developed structures, and I think it hits on this is the reason why. That way, in thirty years, when you decommission, you know what you're supposed to get back to, and I don't think that it puts too much pressure on BOEM, because then you could just choose your control sites as part of this recommendation. I mean, they fall underneath this.

DR. SCHNEIDER: I do just have a question. When you're referring to long-term monitoring, is that the lifespan of the windfarm, because, if long-term monitoring is meant to reflect the lifespan of the windfarm, I would qualify as such, because if -- You know, you could have long-term monitoring for ten out of thirty years.

MS. WOLFE: Can I ask a follow-up question of this, just like logistically? All right, and so the developer has to go out, and they do benthic sampling in their entire windfarm area, and they do benthic -- This is before the windfarm is constructed, okay, and so then they have to select a reference target site that matches the existing lease area and do benthic sampling. Are they doing benthic sampling on a yearly basis? Are they doing it -- I don't know. Are they doing it at the same time that they're going to be sampling within the windfarm area?

MS. HOWINGTON: I think that's up to the group that's going to be creating these monitoring plans. I mean, during the leasing, and the permitting, they have to create them, and they have to release them, and so I think, at some point in time, we can't control everything, and we have to trust that there are scientists in NOAA fisheries who are experts at monitoring windfarms that will hopefully listen to this recommendation and will monitor some of the external undeveloped habitat as well. Once we start getting into the details of that, then it's going to start making it too complicated, where then we're going to have to go back to more general.

MS. CROWE: Wilson.

DR. LANEY: Alex, does BOEM put -- Okay, and these things have got to have a license. Who issues the license, the operating license? Is that BOEM?

DR. SCHNEIDER: The operating license for what, specifically?

DR. LANEY: For the windfarms.

DR. SCHNEIDER: There is a variety of permits that are collected, from a variety of different agencies. Do you mean the construction plan? The construction plan is formally approved by BOEM, but there are aspects that intersect with other agencies.

DR. LANEY: What I was thinking here is I'm looking at it like hydropower operations under FERC, and so, when the license is issued, what happens, in that case, is all the agencies get together with the applicant. They have a thorough discussion of what the long-term impacts are, and they come up with license articles that, in that case, require the energy companies to do exactly the kind of monitoring that Scott's talking about, and so is there an equivalent BOEM document that would have those sorts of detailed requirements in it?

DR. SCHNEIDER: Yes, and so, on the BOEM side, we refer to them as terms and conditions of their construction and operation plan. When a construction and operations plan is approved, those terms and conditions are freely available on the BOEM website. It's public facing. You can read through the terms and conditions for all of the active leases that have been approved. We refer to them as COPS, but that have been approved.

Those terms and conditions can vary by lease, depending on the area, and so, for example, some of the southern New England leases have requirements to monitor for cod spawning. That's not -- You know, it wouldn't be national guidance, given that cod probably don't need to be monitored in the South Atlantic, but there are lease-specific terms and conditions, and those terms and conditions is generally where you find the monitoring requirements for a variety of different biological aspects.

If there are certain leases, like -- None of the none of the South Atlantic leases have approved construction and operations plans at this point, but the closest would be CVOW, the Coastal Virginia Offshore Windfarm, and their terms and conditions are online, as an example.

DR. LANEY: Okay, and, to me, that's where, you know, we address all this sort of stuff that goes into that construction and operations plan, and it's -- To me, it's functionally equivalent to the license articles in a FERC hydropower project.

MS. WOLFE: I just have one final comment. So what I'm getting at is, within a lease farm, or within a within a wind area, you can have microhabitats that are soft bottom., and so you can have sand ripples, mega ripples. You can have troughs, and you can have different types of microhabitats within that soft sediment. If you're sampling outside of that area, outside of that lease area, those microhabitats might not be reflective in your -- I'm thinking of the word. The reference, the control, area.

So thirty years go by, and you go to take out the wind -- These hard structures, and, you know, the sediment grain size -- The consistency might not be different, and so the microhabitats are different. I mean, getting back to the original habitat, how do you -- You know, how is that going to inform the developer for the lease area, if you're still collecting data, or if you're doing long-term monitoring, outside of these outside of these lease areas for microhabitats that aren't reflective of that area that were that was there before the windfarm? I guess what I'm getting at is how much data is too much data to be collecting for soft-bottom area when there's -- It's already a pretty structured -- It's already homogenous in that area, and so how informative is this going to be in the in the amount of effort that that goes for it?

MS. CROWE: Well, I feel like we're kind of getting in the weeds, and, yes, that could be true, but, also, if you're setting up your scientific data collection correctly, you should be looking for a reference area that mimics the project area, and I think some of those questions you brought up -- I don't think anybody will know until somebody actually monitors the native area around the project, and so I feel like what is written has addressed the question, and the concern, and, again, it's a recommendation, and it could be tweaked based on the monitoring that's required for a specific project.

MS. HOWINGTON: Again, I feel like, at some point in time, we just have to trust the NOAA Fisheries, and the BOEM scientists, that they know what they're doing.

MS. CROWE: Wilson.

DR. LANEY: I was just going to say, to that point, Madam Chairman, with modern-day, you know, side scan equipment, and bottom mapping and everything, it should be pretty -- Well, a whole lot easier than it would have been historically to match your control area to your impact area.

MS. CROWE: Okay, and so --

MS. HOWINGTON: Are we good with the recommendation as written? I'm seeing lots of thumbs-up. I'm going to delete this thing I struck through there. So change and then, if everyone can close their eyes for two seconds, Stacie found a missing --

MS. CROWE: I found three of them, actually.

MS. HOWINGTON: What was the other one we missed?

MS. CROWE: I gave you three of them.

MS. HOWINGTON: Okay. I haven't had a mic on this entire time. People have been very confused. We found a few missing periods. Those are going to get fixed. We have approved the writing as it stands for that recommendation. It is currently underneath best practices for biological considerations. Is that an acceptable location, or do we think it needs to go somewhere else?

MR. KENWORTHY: I'm not opposed to that, but I was wondering the best management practices for monitoring advancement of scientific research and exploration, and we do have discussion about monitoring occurring two or three years before, during, and after construction for the life of the project, and so we've got other monitoring aspects in that section.

MS. HOWINGTON: All right. What page is that?

MR. KENWORTHY: That starts on page 13.

MS. CROWE: It's at the bottom of 13.

MR. KENWORTHY: I'm not opposed to your recommendation. I was just reading through those and thought maybe there was some closer application.

MS. HOWINGTON: I like that. All right, and so, after this, monitoring should occur two or three years before and after, and then we can add in our recommendation that the monitoring includes areas outside of what is being developed, and, again, I will pretty this up, not in front of you guys, because, for some reason, it decided to get rid of an enter. Save. Everyone cool with that? Okay. Sounds good. So then, with that, we move on in our agenda.

We have completed the energy policy. Oh, I apologize. We have not completed the energy policy just yet. Yesterday, during my notes, during Avery and Brendan's conversation, another potential recommendation was also discussed and thrown out there, and so I put it in here as a note. Do we want to add a recommendation involving corridors? I think we have trying to avoid any kind of migration corridors, but just making certain. That was someone something that somebody said, and I'm not going to let anything drop. Do we all feel like we've read through the policy, and we feel like we've covered that? Okay. Just making sure.

So then, with that, we have completed everything we were supposed to complete for today, and so we're going to move on to stuff for tomorrow, which is great. Kevin, are you good to present, or do you want to take a ten-minute break before we get started on this talk, Chair?

MS. CROWE: You ready to go, or does anyone want a break?

MS. HOWINGTON: We have a vote for a break from the council chair, and so she overrules all of us. A ten-minute break.

(Whereupon, a recess was taken.)

MR. SPANIK: All right. Good afternoon, everyone. Hopefully, with this talk, I can give you a break from having to wordsmith any policy, or making any new decisions, or action items, and just kind of give folks a highlight of some work that's been going on right here in the council's backyard for the past several years with the Charleston Harbor's Post 45 Mitigation Reef Monitoring.

This was a pretty big undertaking, and so I just wanted to start off with some acknowledgments. Funding was received by the U.S. Army Corps of Engineers, and some staff there that helped out were Ward and Fritz. Several folks at South Carolina DNR assisted with grants management. The co-author Mike Arendt, with project management and reporting, and then a whole slew of scientific divers were involved on this project, and along with that were several folks involved with our vessels, getting us out there, keeping us safe, bringing us back, and then a lot of folks helped out with video review from the data that were generated from this project.

The Post 45 project is about the deepening of the waterways, the shipping channels throughout Charleston Harbor. Planning for this project began in 2011, and it was initiated to ensure safe navigation of the largest commercial vessels. The new target depth was fifty-two feet, and it was formerly forty-five feet, and it was completed in December of 2022, at which point Charleston Harbor became the deepest port on the U.S. east coast.

At that time, there was environmental impact assessment done, and they estimated that 28.6 acres of hardbottom would be adversely impacted, and so, to go along with this impact assessment, Dial Cordy and Associates, in 2016, did some baseline surveys, and that involved scientific divers documenting fish and invertebrate taxa at the impact site along twenty-meter transects.

The result of this study was that they ended up characterizing the impact site as relatively low species diversity. They only found thirty finfish species and eight sessile invertebrate species, and and so, in order to help with the displacement of that habitat, there were two mitigation reefs and four beneficial use reefs, and I'm glad that Jordy was able to give us some definitions on beneficial use reefs, because I really didn't have a good one, if anyone asked, and so I'm glad we've discussed that.

Those were located on the north side of the shipping channel, and they were built using materials dredged from the Post 45 excavations. There were also two additional beneficial use reefs not shown here on the south side, but, for the purpose of this talk, most of the monitoring was done at the mitigation reefs, and that's what we'll be discussing. There was a little bit of monitoring done at a couple of the beneficial use reefs, but it was towards the end of the project.

The two reefs, and we call it the S reef and the J Reef, because of their shape, and they consist of sixteen contiguous spatial cells per reef, and those each represent about 90,000 square feet of seafloor, and the official construction of these mitigation reefs began in 2018, and then a five-year monitoring plan, instituted by South Carolina Department of Natural Resources, began in 2019.

How did we select the sites for monitoring among these two reefs? We looked at bathymetry imagery, and that revealed uneven distribution of the rubble grids between the reefs. The S Reef had two high-density sites, five medium-density sites, and nine low-density sites, and the J- Reef had five medium-density and eleven low-density grids.

We selected both of the high-density grids, and then, from there on, we stratified the medium and low-density, using random selection of the remaining grids, for a total of twelve survey sites. At each of those sites, twenty-meter transects were placed at zero and 120 and 240-degree headings from the center.

One dive team went down and laid out the transects, and another dive team came in afterwards with slates for recording target invertebrates, and fishes, and also using high-definition video cameras to go up and down these transects for later review. Like I mentioned, those divers recorded those video on the slates, counts of priority fishes, and counts and sizes of priority invertebrates, and then, again, the video was analyzed back in the lab at a later date.

It's well known that fish react differently to divers in the water, and so we also placed these baited camera frames. It's kind of a PVC rack with high-definition GoPro cameras facing both outward and downward, just to kind of minimize the influence on species and their behavior, whether you see them or not if you have a diver in the water, and these are deployed for one hour at the center of each of these reference sites for each site.

Additionally, acoustic telemetry was done. We installed Innovasea receivers at two of the S Reef sites and three of the J Reef sites, and they were strategically arranged to provide full coverage among the two reefs, and that's based off of a detection range of about 150, or 250, meters.

Getting on to some of the results, overall, there was greater invertebrate diversity at the mitigation reef than the impact site. These are just a few. If you want to see the full list of species, that's in the final report that Kathleen posted to the site. These first few species are the target species, or what was seen at the impact site, and so several species of star hard corals, soft coral, such as Leptogorgia and Titanideum, several species of sponge barnacles, and then a slew of other non-target species, including algae, bryozoans, more barnacles, echinoderms, even hydroids.

We saw that there was greater sponge and hard coral diversity than at the baseline site. However, the species compositions differed, and one thing to note was there was lower soft coral recruitment and significantly lower densities and smaller sizes of Titanideum and Leptogorgia specimens.

It's also important to note, throughout the years of monitoring, that we did see temporal succession at the sites, and that started with hard encrusting organisms. Specifically, we really saw a lot more barnacles early on, and this -- On the X-axis is just the proportion of invertebrates in the video review, and so that's from zero to one, and so, later on, we see more hard corals, and then, into the end, the last year of monitoring, we see more sponges and tunicates.

Moving on to the fish, twelve of thirteen target finfish species that were seen at the impact site were also seen at the mitigation reef. The only one we didn't see was batfish, and then just to show -- These are the other twelve species that we did see, and their relative abundances. We saw a lot of black sea bass, a lot of sheepshead, a lot of pinfish, but we saw an additional nine elasmobranch species, and sixty-six finfish species, which is five-times as many that were observed at the mitigation reef than at the impact area, and, again, you can see the full report for the full number of species.

Just to point out a few here, and a lot of these are transient species, that are just moving through and being detected, but I do want to point out a few species, like gag grouper and black sea bass,

that are managed by the council, that you can assume are more resident species and using these reefs.

These are detections from the acoustic receivers, for just a few selected species. There were twenty-two different species that were tagged by other researchers that were detected. Species of concern, such as sturgeon and sharks, several species of sharks, and sea turtles were all found here. Receivers were deployed for eighty-eight to 446 days of deployment, and that was across five different upload cycles. Again, I'll mention -- Here you see resident species, such as gag grouper and black sea bass.

Moreover, with black sea bass, opportunistically, there was a tagging study just to look at residents of these species on the reefs, and so thirty-four black sea bass were captured and telemetered, and the size of these fish range from 27.9 to 38.5 centimeters total length. Then these fish were detected between one and 567 days post-release on the reef, with a median of 166 days, and only two of these fish were never detected again. It could have been predation, or it could have been they just moved off the reef, but 566 days is showing that they're pretty residential on these reefs, and taking up some time here.

Some kind of key takeaways, judging by these data, it was considered -- The mitigation reef was considered successful. Looking at the video, and overall counts from the slates in the video, over 167,000 organisms were counted, across seventeen broad taxonomic groupings. We saw more fish and invertebrate diversity at the mitigation reef, compared to the impact site, but, as I mentioned, the community compositions differed.

Just to kind of explain, and have some conversation about that, one of those reasons could be differences in the substrate between the two sites, and so there was more rocky substrate at the mitigation reef. The migration reef was about 53 to 75 percent rocky, versus 9 to 30 percent at the impact site. Just looking at that picture, there that has implications. Obviously, you're not going to see as many organisms over the sand, in the lower portion of that photo, compared to over the hard substrate, where invertebrates can grow and take hold.

Another big difference is the effort that was put in between the two monitoring regimes. As we mentioned earlier, we didn't have the same rigor between the two surveys, and that has impacts. There were twenty-six total field days with the DNR monitoring. We had additional monitoring modes, such as the acoustic receivers and the baited frames, and we had over sixty hours of underwater footage, compared with Dial and Cordy's two field days, six total transects, and they examined just a subset of the footage.

Another possible reason for the variation that we saw is that visibility can be highly variable, and so this is the same site, on the left and right panel of this picture, and it’s just depending on what time of year you're there, and overall, you know, sunlight conditions that you're dealing with, and so you can imagine, on that site on the left, it's probably a lot less likely that you would see this fish. This is just a toadfish hanging out under a little piece of rock here, and so just ability to see things, using the survey methods that we used, could affect the number, the total number, of fish that you were able to observe on any given day.

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

MR. SPANIK: These are about 40 feet. Additionally, the video analysis methods differ between the Dial and Cordy and the DNR methods. Dial and Cordy used what was called coral point count. It was almost sort of like an AI method, and it was just off of a subset of the video, just randomly selected points, and there's more information in the final report about what they did, and so, like I mentioned, it's important to make sure that you're comparing apples to apples when you're looking back and forth between these two studies, something that Scott was really trying to point out to us yesterday and this morning. With that, I'll try and answer any questions that anybody has about the study.

MS. CROWE: Does anyone have any questions for Kevin?

AP MEMBER: I have a question, and apologies if I missed this, but how much data did you have about the mitigation reef site before you started the five-year monitoring?

MR. SPANIK: It was just that study from Dial and Cordy.

AP MEMBER: That's the Dial and Cordy?

MR. SPANIK: There was nothing on the mitigation reef site prior, because we started surveying there once construction was done, and so the comparison site was from the impact site where the dredging was done.

AP MEMBER: Okay. Great. Thank you.

MR. KATHEY: So the purpose of the camera rigging -- You were simply trying to verify that you're seeing the same fish that the divers were seeing, and was that the primary purpose?

MR. SPANIK: Essentially, yes, and to make sure we weren't missing out on any diversity that was there that was avoiding a diver surveying there.

MR. KATHEY: So it wasn't really quantitative, and it's more groundtruthing that what we're seeing on scuba is what is still there.

MR. SPANIK: Yes.

MR. KATHEY: So they're not bubble averse.

MR. SPANIK: Exactly. Some species are the other way around, and like a black sea bass will come eat bubbles in front of your face.

MS. WOLFE: So, the mitigation reefs, they were created using the materials that were dredged from the channel?

MR. SPANIK: Yes,

MS. WOLFE: You said that that S Reef and that J Reef ---Was that like pre-planned, and what was the methodology in going into those structures?

MR. SPANIK: I believe that -- The shape of those structures, I think, was just to kind of retain materials. I believe they're limestone, the materials that would come out there, and they're relatively light, and so I think it was trying to -- A design that would keep them from moving too much with current.

MS. WOLFE: Then my second question is in that figure that you showed, like where the S and the J Reef are, there's like other rectangular blue stretches there. Are those other reefs?

MR. SPANIK: Those are the beneficial use reefs that were --

MS. WOLFE: Okay. That was just -- Those were like the soft sediment reefs?

MR. SPANIK: Yes. I think there was still some of the hard dredge material, but it wasn't anywhere near the amount and density at the mitigation reefs.

MS. WOLFE: Okay, and for the soft -- For those beneficial use reefs, were those pipelined out there, or was it like just deposited, like off a hopper?

MR. SPANIK: I believe they were dropped off of a barge.

MS. WOLFE: Okay.

MR. SPANIK: Some of those -- Earlier on, they were still constructing those, while we were trying to do dive surveys, and just -- When they would open it up, it would just go to blackout conditions.

MS. HOWINGTON: You said that during the -- In the paper, you did some little bit of studies of the beneficial reefs. Can you summarize that?

MR. SPANIK: It was really only towards the end of the project, off of the recommendation -- I believe Cindy Cooksey, the former panel member, recommended that. I don't have much to report on that. It's in the report, but I didn't put any summary together for that for this presentation, but it was much less monitoring, and there was also much less material there, and so a lot more sand, and we didn't document anywhere near as many invertebrate species in the beneficial use areas, which was much more sparse material.

MS. CROWE: I was just going to chime in that I was part of those mitigation discussions too, and the concern was that the monitoring did not quite meet success criteria, but the money was gone, and so they went back out and did a little bit of additional monitoring. Anything else? Jordy.

MS. WOLFE: I had a follow-up question, and so what -- What siting criteria went into, I guess, planning where those mitigation reefs ended up becoming, like where they ended up becoming? Was there any criteria and like were they previously picked by the Corps, or was that something that DNR --

MR. SPANIK: It was previously picked by the Corps, and I think it had a lot to do with areas that were outside of any navigational obstruction areas, where people could still use it, and not be in the shipping lane.

MS. CROWE: David.

MR. WHITAKER: Kevin, do those black sea bass show up almost immediately upon putting the material down?

MR. SPANIK: Yes, and it's in the report. I think we caught something like 200 fish, in about thirty minutes of sampling, when we were trying to tag them. Are you talking about when -- As soon as the materials were deposited?

MR WHITAKER: Yes.

MR. SPANIK: Yes, they showed up pretty quickly. Let me see if I have --

MR. WHITAKER: We had some mud dumped off Folly Beach from the harbor, I don't know, fifteen or twenty years ago, and it was just mud, but it was covered up with black sea bass, almost immediately, and that's the reason I ask, and were those black sea bass of a large size, a relatively large size?

MR. SPANIK: Relatively on the smaller size, and what did I have for the tags? So the ones we tagged were between twenty-seven and thirty-eight centimeters. It took us a while to capture a fish that size. They needed to be about there to feel comfortable implanting the transmitter into them.

MR. WHITAKER: Right.

MR. SPANIK: So predominantly smaller.

MR. WHITAKER: Over time, did you see evidence of smaller juveniles of different species?

MR. SPANIK: We started to see some small red snapper, and small gag, but that did kind of come -- With the gag, there seemed to be, around that time, just an overall Charleston-wide increase in small gag grouper, just a really good recruitment year, and so that could be not quite related to the reef, but just to a high recruitment year.

MR. WHITAKER: All right. Okay. Thank you.

AP MEMBER: So, that white shark that you saw, were you guys in the water?

MR. SPANIK: Fortunately, no. Sometimes we were like, don't tell me what you saw.

MR. KATHEY: For the telemetry, I'm assuming that you got some hits on your receivers from other fish that have been tagged elsewhere along the East Coast.

MR. SPANIK: Yes, and these were associated with -- I believe it was twenty-two different -- Twenty-two different species, but I'm not sure how many research groups, but I can look. There's a table in the report, in the final report.

MR. KATHEY: So how did they compare, in number, to the number of tag fish that you got from your tagging effort?

MR. SPANIK: I think --

MR. KATHEY: Was it about half and half or --

MR. SPANIK: More from our -- More total detections from the fish that are there as residents, for sure.

MR. KATHEY: But you picked up how many different species from, you know, total in your acoustic survey?

MR. SPANIK: In total, sixty-six fish and nine elasmobranchs.

MR. KATHEY: Okay. Well, that's total number of fish, right?

MR. SPANIK: That's total --

MR. KATHEY: Or is that species?

MR. SPANIK: That's total number of species.

MR. KATHEY: Oh, different species. Sixty-six species?

MR. SPANIK: Yes.

MR. KATHEY: Okay.

MS. CROWE: Okay. If nothing else, then thank you, Kevin, and I'm going to pass it back to Kathleen. Wilson has a follow-up.

DR. LANEY: One more question, Kevin, and so you all concluded it was successful, and so a question that I could see coming, from a lay person would be, oh, well, this means we can just go out there and dredge anywhere, anytime we want to and we can mitigate it. Have you run into that attitude yet?

MR. SPANIK: I don't think anybody has approached with anything like that, but I don't know if that's something we want -- The success criteria, again, is based off of the impact site monitoring that was done, and I think that's a really big charge, to us as an AP, to make those recommendations that, you know, that pre-monitoring is done well, so that, you know, if we had done the same amount of monitoring that the DNR did in those initial studies, maybe things look a little different, and I don't know.

MS. HOWINGTON: All righty. Give me one moment to pull up my presentation, and so next is technically the Mid-Atlantic fishing effects database and app. Unfortunately, I have been emailing David Stevenson and Tori Kearns, and they have not responded, and so hopefully they will be available first thing tomorrow morning, and we will be able to get out of here a little bit early, but

I can give my presentation, which will hopefully take us to -- Yes, it will take us to the end of the day. We can do that, and so one moment, please. There we go.

MR. KAALSTAD: Wilson -- I actually -- David and Tori presented that same database at our Habitat Committee meeting last week, but I had to run to the other room, to give an update to the Policy Board, and I asked them this morning if they had a copy that we could share, and they haven't responded, and so I'm wondering, Wilson, did they have a copy that was shareable, or did they just tune in for the fish gear?

MS. HOWINGTON: Of the habitat database?

MR. KAALSTAD: Yes.

MS. HOWINGTON: So, on our briefing book, we have this presentation, which was presented to the CCC Habitat Working Group, and I believe ASMFC and the CCC now, and so it has made its rounds. We also have this project description, and then, if you go to our website -- One moment. On the meeting page, we have a link. I apologize for the scrolling. We have a link to the app itself.

MR. KAALSTAD: Okay. I guess I was just asking Wilson if he could confirm that's the same one, because then I might just steal that and add it to our briefing materials from last week, because the outreach folks were asking, you know, give me all the presentations from your committee meetings, and this is the one I was missing.

MS. HOWINGTON: Got it.

DR. LANEY: Yes, I think it probably is the same one, but remember that Tori did a live demo for us too, and so I presume she was going to do the same thing for the AP here as well.

MS. HOWINGTON: That would be my assumption as well. I minimized everything. I didn't want to do that. Okay, and so here we are. So, just as a reminder, in December of last year, the council approved the habitat blueprint, and this reorganized the Habitat AP, gave us some goals and objectives, and gave us a little mini to-do list to make certain that the habitat program for the South Atlantic Council is meeting our goals and objectives.

So, first thing first, was update the website, and so it's actually really good, and I just pulled that up, and so, again, if you go to safmc.net, right here, you can click on this habitat and ecosystem page. I believe I shared some of this last April, but we were able to update this. We have updated all of the language, which is great. We have added these pretty dropdowns for our policies, and so now they have little summaries under the policy, and so I actually have to update the energy policy, and I'm going to update the summary on there too, which will be great.

Furthermore, we also now have this list of habitat-related amendments, and so this is where we've defined EFH, and this is where we've defined HAPC, and so, that way, you're not looking everywhere of -- CEBA 1 is the Comprehensive Ecosystem-Based Amendment. It's a lot of amendments put into one. This is a good place to be able to look and see, okay, coral EFH and HAPC. You know what the amendments behind those definitions are now, and then, of course, we have our other Habitat documents.

We have the habitat plan, FEP I and FEP II. I would like to remind everyone that FEP II was a series of living websites. The idea was that they were going to be constantly updated, but, due to COVID, staff time, just every single interruption that could possibly be imagined, they were never updated, and so I took all of those websites, took as much language as I could, and, all the links that were on there, I fixed as best as possible, and some of them were broken where I couldn't find them, and some of them I just had to Google it, and I could find the new link that other people had updated their websites, and so I did that as best I could, compiled it into a PDF, and we now have a standing PDF for FEP II.

Whenever we want to do FEP III, I would recommend not a series of living websites, but we're good on that. We also have links to our user guide, which is here, which I believe I need to update you, and I talked about that, but then we also have links to our managed areas, and so this includes our special management zones, our deep coral habitat areas of particular concern, our gear-managed areas, and our marine protected areas, as well as some very pretty maps done by none other than Chip Collier, right behind you, and so this is a very good resource.

It's a great way of visualizing these. They have a little explanation of what these areas are. It's very nice to just have this linked here, and then, eventually, this EFH map will become the EFH mapper that we're hoping to bring up to date. If you all give me one moment. I wasn't planning on doing this, but we do have time, and this is what our EFH mapper looks like right now, excluding the title is centered.

It took me longer than it should have to figure out how to center a title, but I did get that fixed. As you can see, all of the EFH is selected, and all the HAPCs are selected, and so it's a little bit messy, but this has a lot of the same utilitarian, or utilization, as the previous mapper. Jordy has been helping me. We're basically just matching what the previous mapper was, and we're trying to get it to where we're in control of it, and then we're going to improve on it, and so, as soon as we finish that project, and then finish just matching what we had, I'm probably going to bring it to you guys and ask you for some feedback, but, right now, we're just trying to get there.

We discovered, and, Jordy, just as a heads up, I discovered, if you zoom really far in, all of these inlet polygons are squares, which is not correct, and so I'm going to have to figure that out. None of them have curves, at all. They're all just straight polygons, and so there's some kind of smoother thing that I've missed. Okay, and so we'll figure it out, and so we're working on this. By the next meeting, we will have a functional mapper, I'm hoping by the end of the year. Once this goes live, I will let you guys know, and so those are two pretty big updates.

Then the next was this, and so this was going to be the tools and partner evaluation, and the idea behind this was to sit down and look at who are our partners, what are the benefits and costs of the South Atlantic Council to those partners, what are the communication pathways, and identify who we contact and who they can contact.

Then for the tools, it was identify the cost, the audience and users, and the information needed to maintain these tools. So for the tools, what we had listed in the blueprint, which was Roger Pugliese pulled together all the tools he had, and all the partners he had, was the SAFMC Atlas. That was basically the umbrella for what tools we had.

The first thing was the digital dashboard. This gave access to all the council web surfaces and all the spatial layers, and so, basically, this is our downloadable EFH shapefiles. This still exists. It's not gone. We're hoping to build that EFH mapper and replace it, but all those layers will still be downloadable, and so we're going to continue to have access to that, and we're good to go.

SAFMC management areas provides the spatial representations of our MPAs, our Coral HAPCs, our SMZs. As I showed you, they're already on the website. We're good to go. We still have it. We have control of it, and so no cost, and so we're good there.

Then we also had a tool called South Atlantic Fisheries. Now, this provided abundance summaries for managed species. It was a SEAMAP website, and it required an annual fee for updating and annual data updates. I am a member of SEAMAP, and I talked with the chair. They were not interested in moving forward with supporting, and so it required them to annually update. It required a big lift on their end. They already have a visualization on their website, and so they have decided they would not like to continue with that.

Then SAFMC EFH. This was the visual representation of the SAFMC. That's the way it was described. Not kidding. EFH, that's the mapper. It still exists, and so I think, with the tools, we're good. We've either transitioned it to our website, where we have full control over it, or we've decided this is no longer relevant, and so that's our evaluation of that. Any questions?

DR. LANEY: Kathleen, there was one thing I was going to ask you about, and that was the conservation blueprint from the former South Atlantic Landscape Conservation Cooperative.

MS. HOWINGTON: Okay.

DR. LANEY: They provided the council, I believe through Roger, with funding for mapping important habitats offshore within the South Atlantic FMC jurisdiction, and they are still working on that blueprint, and only now it's migrated to the Southeast Conservation Adaptation Strategy, which covers a much wider area, the whole Southeast, and I believe that they finally got the Gulf of Mexico plugged into that, which is of passing interest to us, but is there interest, you know, in still trying to maintain that link?

Those folks are with the U.S. Fish and Wildlife Service. They're based in Raleigh, co-located with the North Carolina Wildlife Resources Commission, and Rua Mordecai is the head person there, I think, who was involved with the council in the past, in terms of mapping those conservation blueprint areas offshore, and so I'll just throw that out, and mention that to you, as something we might want to explore, just adding another link to the website.

MS. HOWINGTON: Okay. All right, and so potentially add in a link to conservation mapper. Do you have -- Is this Google-able, where we can look at it really quickly?

DR. LANEY: Yes.

MR. HOWINGTON: SECAS, right?

DR. LANEY: Yes.

MS. HOWINGTON: This blueprint right here?

DR. LANEY: Yes.

MS. HOWINGTON: Is this static?

DR. LANEY: As a matter of a fact, they're having review sessions for it right now, for the current version of it right now, and there's workshops coming up, webinars, I think, and Trish is nodding her head. I think some of us have been invited to it. I signed up for one, also.

MS. HOWINGTON: Okay, and so I'm thinking of how we would integrate this into the website as a potential tool. Would it be helpful to have, let's say at the bottom, helpful links to like SASMI, SECAS, that kind of thing, other groups that we've worked together that are our partners? Would that be -- Would you all be interested in me exploring that and figuring out how to integrate that? Okay. So add in links to -- Not helpful website. I don't know why my brain did that. So the website -- To helpful links. There you go. That's why I had that.

DR. LANEY: One other one I'll ask about, and Simen, feel free to chime-in here, but, since Dr. Wilber was the one who originally asked the ASMFC to develop that fish habitats of concern document, we have actually completed that document now, and it is online, and it's -- The vision there is it's going to be sort of a living document that will be modified as additional research is done and we learn additional things about species under, in some cases, NMFS management, if they're listed species, but, for most of them, under ASMFC management, but many of them occupy the same, you know, habitats that are designated EFH for council-managed species, and so it might be useful to have a link to that document as well.

MR. KAALSTAD: Yes, and we will be sort of rephrasing, or not rephrasing, but, in the next sort of habitat management report that the commission puts out, we'll be sort of reiterating the utility of that document as well, just to clarify sort of, yes, its utility, in a sense, and so that document will come out around May, we hope.

MS. HOWINGTON: What is the name of the document that we're discussing the utility of? Sorry, and I'm trying to --

MR. KAALSTAD: Fish Habitats of Concern. That's sort of the commission's non-federal version of EFH.

MS. HOWINGTON: All right. That is the wrong one. Okay. So that is the tool evaluation. I think we've got all of them covered, and, like I said, on the website, we can add in links to our partners. So then, who are our partners? Again, as defined by the blueprint by Roger Pugliese, here are the partners that are on the HE AP.

He listed all these partners out, and I then had to determine who we still had a working, you know, communication pathway with, and was there any cost associated with these partnerships, and what was the point of these? Was it just keeping everyone informed? Well, the good news is the majority of our partners are on the HE AP right here, and so this is our communication pathway. Hi, guys.

I'm hoping, if you all ever have any habitat-related items that you would like to communicate with the council, this is a fantastic pathway to do, it is via the AP. So, yes?

MR. KENWORTHY: Just a recommendation. Instead of having just Florida Fish and Wildlife, and it's actually the Research Institute, to just have Florida Fish and Wildlife Conservation, because we are kind of taking this on as a collaborative across the whole agency.

MS. HOWINGTON: I wish I could just edit "Research" instead of "Resource Institute". I apologize. I don't know.

MR. KENWORTHY: It might just be this presentation. I don't know if that's on the website.

MS. HOWINGTON: I'm betting it's just this presentation.

MR. KENWORTHY: Okay. I wanted to make that clear.

MS. HOWINGTON: My bad.

DR. LANEY: Also, don't we still have partnership with the U.S. Fish and Wildlife Service?

MS. HOWINGTON: They were not -- If they are not on here, they were not listed in the original blueprint. However, there's a question, at the end, of are there any partners that we've missed, and so fill that in there. So Research Institute, and my bad, but this is our communication pathway for all of us.

Now, all the rest of the partners that were identified in the blueprint, and we have SEAMAP. I am the chair of the Habitat ID workgroup, and so I'm pretty sure that's a good communication pathway. I'll let you guys know if there's anything that SEAMAP needs to report out to you guys for.

For the NOAA Office of Ocean Exploration, our National Ocean Service, I am the council contact, and I contact Heather Coleman and Kasey Cantwell. I even contacted Heather about this meeting, because she reached out and said did I miss anything about deepwater coral, and so we email each other back and forth.

For SECOORA, Julia Byrd and Chip Collier are our council contacts, and they contact Debra and Jennifer, and so, if they need to communicate, there we go. Then, for the Integrated Ocean Observing Program, SECOORA is the regional contact, and so we got that covered. We're just duplicating that.

Then we have Pew. Now, Pew has recently become more focused in more inshore and oyster reef restoration, which, for us, is effective for EFH, but is not necessarily the South Atlantic Fishery Management Council focus. However, Lora Clarke is our contact for them, and she is still engaged, and still attends council meetings, and so we still have a communication pathway built there. Then, of course, we have TNC. Chip and I are council contacts. He's running away. I see that. Mary Conley and David Moss are our contacts for them.

DR. LANEY: Do we want to add Brendan Runde in there too for TNC?

MS. HOWINGTON: Good point. Brendan Runde. Actually, no. That means that TNC is on the Habitat AP.

DR. RUNDE: Yes, we are.

MS. HOWINGTON: All right. So TNC is on the HE AP, and, of course, Brendan, that means that, if there's anything that TNC needs to communicate with the council, please feel free to just let me know.

AP MEMBER: I don't know if this is intentional or a typo, but it's the Southeast Aquatic Resources.

MS. HOWINGTON: It's probably a typo, and I'm so sorry.

AP MEMBER: Also, for our partnership, it's Atlantic Coastal and not Atlantic Coast.

MS. HOWINGTON: Where is he pointing?

AP MEMBER: I saw it earlier. That was on the last slide. It's irrelevant. Sorry.

MS. HOWINGTON: Then, finally, we have Deep Sea Coral Research. Again, Heather Coleman and Jocelyn. Chip and I are the contacts. Then, finally, the Southeast Resource Partnership. We're a partner of that. I'm the council contact, and so, after reviewing, again, all of the partnerships that were listed in the blueprint, which I did not create, I feel like we have established communication pathways between all of them. None of them cost us any money, and so we're good on that. All of them know who they need to contact for us.

I don't see any need to dissolve any of these partnerships. I feel like we're all communicating relatively well, and so, as far as my evaluation is concerned, this was helpful, being able to go through and now, you know, kind of know, is Julia Byrd the person I need to go to if this person contacts me, but, ultimately, I feel like this evaluation was successful. We are adding in Florida FWC, right, FWC, as a partner, right? Which Florida are we talking about?

DR. LANEY: Well, Matt.

MS. HOWINGTON: They're on the HE AP. Are there any other partnerships, that you all are aware of, that I should try and establish a communication pathway, that I should work on creating?

DR. LANEY: Well, we already mentioned the U.S. Fish and Wildlife Service. Trip is on the AP now, right?

MS. HOWINGTON: Yes, he is.

DR. LANEY: It's actually Walter Bolton. Then, for SARP, you might want to make that Southeast Aquatic Resource Partnership.

MS. HOWINGTON: Yes, he mentioned that.

MS. CROWE: Trish.

MS. MURPHEY: I was thinking -- Is it the SASMI, the South Atlantic Salt Marsh Initiative? Should they be added?

MS. HOWINGTON: I can add SASMI. We do not have an ongoing communication between us, but I don't see why we shouldn't, especially if I'm going to be linking them onto our website. It would probably be good to establish who do we contact there?

MS. MURPHEY: Ye, and since it's South Atlantic, I thought it might be useful.

DR. LANEY: There is that East Coast Submerged Aquatic Vegetation Group as well.

MR. KAALSTAD: I was just about to ask, yes, if you've had any contact with the East Coast SAV Collaborative, and so I'm a member of that collaborative as well with -- Brooke Landry, I believe, is the co-chair, and I've been actually talking to her quite regularly, so I could easily connect you guys. Obviously, they are very SAV-based.

DR. LANEY: I'll defer to Simon on this one, but what about the Atlantic States Marine Fisheries Commission as a partner, since they're represented on the AP?

MS. HOWINGTON: Yes, we could.

DR. LANEY: We have -- Some of us are on the Habitat Committee, and so there's some cross-fertilization that's going on there.

MR. KAALSTAD: I was going to suggest -- I mean, in either regard, whether it's -- I sort of, you know, coordinate the Habitat Committee through the commission, and that is more policy-related, and sort of guidance document-based, and so that might actually be a better, I guess, role in my part here, than the partnership that focuses on funding on the ground restoration projects, and so, either way, I would be happy to represent the commission's Habitat Committee, and I would be happy to represent the Atlantic Coastal Fish Habitat Partnership, but, in the sense of what this AP does, I think it would make more sense that it's Habitat Committee from the commission.

MS. HOWINGTON: I think you can represent both. So, apparently, in November of 2023, Roger named you our contact for SASMI. You want to keep that up?

MR. KAALSTAD: I mean, I get the emails, and I try to tune into the Coffee with SASMI as often as I can, but I'm not entirely sure what role they will --

MS. HOWINGTON: I'll try to establish a communication pathway outside of you, and see if we can't get someone direct.

MR. KAALSTAD: Amanda Gobeli is, I think, their sort of coordinator.

MS. HOWINGTON: Amanda who?

MR. KAALSTAD: Amanda Gobeli. I can forward you an email contact for her.

MS. HOWINGTON: I would appreciate that very much.

MR. KAALSTAD: Yes, no problem.

MS. HOWINGTON: All right. Any other partnerships that we think we should at least just reach out and say, hey, if you all have anything of interest, bring it to us? Do we feel like we have evaluated, and established, communication pathways, or at least named communication people for each one? Points of contact, that's what I'm going for. Good. All right. Myra, is that what you wanted out of the blueprint? Sounds good. Okay.

All right, and then the next thing, and this is hopefully what we're going to be discussing for the rest of the afternoon, is the outreach and communication strategy, and so, like I said yesterday, this is not something that the Habitat AP has necessarily tackled. I recognize that we are not outreach people, and so, before we move on, if we want to do anything related to outreach and communication, we have to go through the OC AP, which is the Outreach and Communication Advisory Panel, for the council.

They are really good at giving great advice, and they have already given some, and some, hey, this might be a good thing if you all are interested, and so what I'm going to do is I'm going to go over what's listed in the blueprint for our outreach and communication goals. Then I'm going to go over the suggestions and feedback the Outreach and Communication Advisory Panel has already given us, some of which we've already done, like, for example, updating the website.

That has already been completed, or mostly completed. We're always able to update, but we are going to go through that, and then, afterwards, I then have some guiding questions to guide us into what do we want to do, what projects would we be interested in trying to move forward with, and so, first things first, the council role in Habitat is not well understood.

That is the reason why we now have this task. Outreach and communication efforts should focus on stating the council's habitat obligations under MSA and other federal laws, and our limitations, because a lot of people don't really get it, that, for instance, EFH is in coastal waters. I recognize that the South Atlantic Fishery Management Council -- We have a jurisdiction of a few miles off to 200 miles off, but the EFH for those species is coastal, and that confuses everyone, so much so, and so how do we communicate that? That's kind of what we're thinking.

All right, and so advisory panel recommendations are use the website and story maps to increase awareness of the council's role in habitat protection, and so we gave the website a facelift. We made it a little bit shorter, and we gave it dropdowns and summaries that are a little bit easier to read.

Consider other council websites and presentation of EFH. We've already -- I looked at other websites, and that's how we came up with the design for this current web page, the presentation of EFH. Again, we're getting the mapper up to speed, and then we're going to start trying to improve it, and so all that work is ongoing.

Highlight habitat protection work separately from ecosystem-based management work, and so the way that we're tackling this is we are going to eventually create an ecosystem webpage. It's going

to be separate from habitat, because they are separate things. One of the things that they did recommend is develop a short video on what the council can and cannot do relevant to habitat, and so that's something that we could pursue, if you all are interested. Anybody want to get in front of a camera?

Make a general connection between healthy habitat and healthy fisheries. We can do that in the description of the website, or we can do that in a video. It's up to you all. Maybe one thing we can do is use an infographic to illustrate the role of the council in habitat, and so, maybe, instead of a video, we do an infographic.

They did emphasize including information on water quality. They emphasized starting communication with the focus on public concerns related to habitat and then share ways that the public can make an active impact. Two other recommendations that are not on here, because the OC AP met three weeks ago, and it was after my briefing book, and so two weeks ago.

They also recommended maybe we create an FAQ, and the reason why that recommendation occurred is because I started talking about what audience are we aiming for, because how habitat affects that audience is going to be different, for example commercial versus recreational fishermen, just a scuba diver, versus somebody who maybe is just perusing our website. Are we going general public, or are we going specific? Those are going to be different things, and so they were like, well, maybe you create an FAQ. Maybe there are sections for each audience.

Another thing that they recommended was talking about sargassum, and so sargassum is an FMP I am in charge of. We have high protections for sargassum. Sargassum is a nuisance for fishermen. They're not huge fans of it. However, we protect it, because it's nurseries. It's where the babies live, and so maybe we create a little infographic about that. These are all options.

I'm going to open it up to general conversation, and, if nobody has anything to add to that, or nobody has anything that they want to brainstorm, I'm going to start asking these questions, because these are the ones the OC AP looked at that said hopefully this will kind of get us geared toward where we need to go, and so, when we're having these discussion, keep in mind who is the audience? Again, general public or specific type of fishermen? Are we just going for rock shrimpers off of South Carolina? Like, there's a niche we could do.

What are the key takeaways? If we're communicating an FAQ, you need to figure out why you're doing it. You can't just say, oh, we want to talk about habitat. You need to say council limitations when it comes to the governance of habitat. We need to be able to focus in and know what the key takeaways are. The goals of the outreach, are we just letting people know, or are we trying to increase awareness of something? What tools do we have to communicate? We have our mapper. We have our managed areas. We have our website. Do we want to create another tool? Do we need a story map?

What are the key issues that you need to address with outreach? This is really similar to key takeaways, but it's the question, or the issue, that's going to start that, and then, finally, what are the public concerns, and that is because the Outreach and Communication AP emphasized that when they were giving feedback on what we could talk about of public concerns with habitat.

I don't know what those are, and I'm fully admitting this, and so, if anybody is aware of a public concern about fisheries habitat, I mean other than the sarcasm, but so this is the starting point for the conversation. I already see a hand raised, and so I'm going to open it up to Wilson.

DR. LANEY: I think this is a quote from a well-known historical movie called The Graduate, "plastics", as far as public concerns go, and that causes me to wonder, since the council already has a citizen science program, and I wonder if there is a possible role for citizens in South Atlantic Council fish habitat. I mean, we've talked a lot about monitoring during our meeting so far, and I know there are lots of other citizen science monitoring programs out there.

I know there's citizens monitoring all sorts of things, and so it could be that some other group is already doing things, you know, conducting citizen science monitoring programs that would be of interest to the council, and I certainly wouldn't advocate duplicating anything that's already ongoing, but I'll just throw that out there as a question and see if there's anything the AP thinks that might be usable as a citizen science program. I would certainly defer to Chip on that point.

DR. COLLIER: So we do have a citizen science program that could potentially address some issues, but I'm curious what, under MSA, we would be addressing for the plastics.

DR. LANEY: Yes, and that's a good question. I'm thinking that, you know, we have a program in North Carolina, the Plastic Ocean Program, that one of my colleagues, Bonnie Monteleone, operates out of UNC Wilmington, and so they do a bunch of monitoring stuff, you know, offshore. She goes all over the planet sampling plastics, and so I don't know. I just throw it out there as a possibility.

I mean, I could see, and they are already, I guess, all of these beach and river system cleanups that go on, and they certainly collect, and document, all the plastic that they gather, and so it could be, Chip, that there's enough of that already going on that, if we want that information, we could easily secure it from some of those existing programs, but, you know, it's much in the news, and it seems to be an issue of public concern, is the reason that that word popped into my brain, and then are there other things? You know, I don't know. That's why I posed the question out there.

I don't want to create something that's not needed, useful, and affordable, and I also don't want to create something that we could get from some existing citizen monitoring program that's already, you know, being sponsored by some other partner somewhere.

DR. COLLIER: Yes, and what we can do is potentially reach out to the person at UNC W that you had mentioned, and just see what they have available, and maybe list them on the citizen science webpage. We have a connection portal, where if somebody -- If they have a research idea, or are looking for research to do something, and so this might be one of those opportunities where somebody could reach out there, and there could be a connection, where they develop a citizen science project outside of what the council might be leading, but we are happy to put the two groups together, to hopefully develop a successful citizen science project.

MS. HOWINGTON: So there is one already. South Carolina Aquarium does a litter journal, where you can go out, and you take pictures of it, and you can identify it, and so what we can do, instead of creating an entire new one, is we can link that, again, on the website and make it a citizen science underneath the Habitat AP, or I can talk with Julia about an appropriate place to put it,

because she's the citizen science person, and so I'm not going to do it without her permission, but that's a -- But that then goes to we don't want to duplicate work that's already been done. However, that sounds like a great idea, but do we think that this applies to fishermen? Maybe this is one of those like, I mean, and I don't know, a litter journal. We could research it and figure out if this is something that would work.

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

MS. HOWINGTON: Tangled in Trash. That's for sea turtles, and so maybe we already have these. Maybe we know of a place to put them.

AP MEMBER: That builds into one of the things that I was thinking about, which is you talk about what is the role of the site, and who's going to be using it, and I want to say, first and foremost, just the site is really lovely, and I think that should definitely be acknowledged. It's an amazing resource, and it's not a competition, but, looking at some of the other fisheries management councils, I think there's a lot of choices that were made in the site that make it very user-friendly, specifically for SAFMC, and I think that it's important to stick to the strengths of what SAFMC can specifically provide.

That's not to say that we can't link to other sites, but the folks that are going to be coming to the site, I imagine, are going to be looking for data, looking for -- You know, the fact that you can click down, and see all of our stances on things, I think is such a great resource. I could definitely see an area of, you know, linking to external partners if, for example, plastics is something we think is an issue. Yes, linking there, and I don't think it necessarily needs to have a spot carved-out within the site, with copy or other resources, but then one -- The FAQ.

I'm going to voice my thumbs-up for the FAQ, because I think that's another thing that some of the other councils are doing. They have some Q&As. They have some really clearly laid out definitions of what EFH is, and what does the council mean, and I think that we should have at least one document that, if someone is coming in with absolutely no context for what any of the acronyms mean, and they've never worked with us, or NOAA offices before, and there should be a place where that lives, and not as a PDF, but as like a page, so that it's easily searchable.

Then, also, not trying -- I don't think we need to recreate the wheel. Like, for example, NOAA Fisheries has such amazing resources, guides for different species, and it's not like we need to build those from scratch, and so that's a lot of things at once, but really just sticking to our strengths. The tools are a huge strength, and people are coming here for data and using the tools, and then having an intro document, which really could pull from a lot of the resources that already exist on the site, but putting it in a very clear, bulleted, bolded, easy format for folks.

MS. HOWINGTON: All right, and so would you all be interested in me developing a draft FAQs of the habitat program, to a general audience, and so to general public, and FAQs of what is the habitat program, what is EFH, what are HAPCs, and then maybe a few of what's the council's role in habitat? Would you all be interested in seeing something like that? Okay.

MR. KATHEY: I'm curious, Kathleen. You said that someone had stated that the public is confused about this, or there's some audience out there that doesn't understand this, and where is that coming from? What's the source of that?

MS. HOWINGTON: People I have talked to that have asked me, and I don't want to name names, and, if I name affiliation, it's pretty quickly -- It's easy to figure out who it was, but it's somebody that is very smart, that I explained what EFH was, and why estuaries are considered EFH, why that's within like the habitat program jurisdiction, and they were like, oh, I've never understood that before, because, as far as people are aware, the council is federal. Estuaries are state.

MR. KATHEY: Right.

MS. HOWINGTON: So how can a council EFH include an estuary? Well, it includes that because that EFH is for the life stages for our federally-managed fish, and so explaining that. I didn't realize that that was something that needed explanation, but it apparently is.

MR. KATHEY: So is that audience -- Is it the rank and file, or are we talking about kind of agencies, organizations, and is it more on that level?

MS. HOWINGTON: I will go agency.

MR. KATHEY: Agencies that we're working with, to just help them understand better?

MS. HOWINGTON: Yes.

MR. KATHEY: Okay.

MS. BROUWER: If I may, and thank you. So I was just on the road, talking to fishermen in Florida, as part of our mackerel port meetings, and this was a different format than we normally communicate with fishermen when we have public hearings. For example, we're there to tell them what's going to be happening, and we were there to ask them what they were seeing, what's going on with those fisheries, and water quality kept coming up, all the time, and in a very, you know, desperate kind of way, like you need to be doing something about water quality, and I know you guys have talked about this, and so that's, for example, one thing that the general public is confused about, you know, and they think that the council needs to be doing something about some of these things, and water quality just stuck out, every single meeting that we went to.

MS. HOWINGTON: So, when you say water quality, are we talking about stormwater drainage? Are we talking about stagnant water? Are we talking about plastics? Are we talking about pesticides, because these are different types of water quality issues.

MS. BROUWER: So what the fishermen were complaining about was just the degradation of some of the habitats, the estuaries. You know, they're not seeing the fish where they used to see them. You know, you can sometimes tell the water is dirty, you know, those kinds of things. Not specifically talking about stormwater runoff, but just saying, hey, you know, we're seeing some changes, and some of them are due to degradation of habitat, and water quality is a big, big thing.

The other thing that came up, and you guys -- I think you've already talked about this, and I don't know how related to habitat it is, but the whole space debris issue off of some parts of Florida, you know, and that keeps coming up too, and it's like, well, isn't the council supposed to be doing something about that, and no, we can't.

MR. KENWORTHY: I kind of want to second this interest in having some FAQs, and, I mean, I'll speak from a perspective in Florida. We have these big initiatives that we think are grand in our, you know, management approach, and are trying to address habitat issues, and habitat concerns, and we continue to find out that people just -- As much as we're trying right now, they just don't know about things going on, and I think I'm hearing the same thing with this conversation, is it's second nature to us, but people don't understand it.

An additional thought is I encourage you, in putting these together, to think pretty -- Kind of basic on this. You know, it might be like the back of our hand for us, but people are out there that aren't aware. We might think that everybody's aware of what we do, how we do it, and what we have the capability of doing, but I think, you know, one thing I'm experiencing, in my position right now, is a lot of people don't, and so I encourage it, and encourage you to think pretty basic on some of these FAQs, to get this out there. Then, as far as disseminating information, we've got staff that can certainly help promote within our Florida circles.

DR. LANEY: So I can already see Myra and Chip rolling their eyes when I mentioned the word "anadromous species", and the council's responsibilities for anadromous species, which are written into the Magnuson Act, but there's a catch-22, and the catch-22 is the council could only address them if there was a federal FMP for those species, and there isn't, and so that's one thing that it would be, I think, really useful to have an FAQ on there and explain why that's the case.

You know, how come the council can't get as engaged in that as they might like, and I will note that both the Mid-Atlantic and New England have engaged in that, through their authority to regulate bycatch and fisheries offshore, and so they are doing things, and this council, as far as I know, was the very first to write, into the very first habitat plan in 1998, what would be EFH for diadromous species, if those could be designated and so this council was very much in the forefront of talking about possibilities for EFH for those species, and so they should be commended for that.

MS. HOWINGTON: All right. I want to go back to the water quality conversation though, because I -- That sounds like something like -- So we have the FAQs for general habitat, EFH, HAPC, what the council can and cannot do. You know, that's going to be about -- It's going to be a two-pager, if I can get it down brief and basic, all right, and so that's not going to be very detailed, but then water quality, degradation of habitats, estuaries and others, we are working on the flow policy, which is great.

When we have finished working on the full policy, we can integrate water quality information into that. That's one of the goals that we have. Maybe we could work with our outreach people to make an article, or a social media something, saying, hey, if you're concerned about water quality, here's something the council's doing, like a little one page or something. Would anyone -- Like would that sound good to everyone?

AP MEMBER: Huge thumbs-up. I think that's a great idea, and the other thing that we've done in the past, for some other projects, is, whenever we come out with a big document like that, even if we don't have time to do like a really nice formatted one-pager -- You know, it's like those simple abstracts that some of the journals are doing now, where it's like five bullet points, sometimes targeted for journalists. If you're like, if you only take five things out of this document, what do we want you to take away, and that is just the first page.

Like, when you download the PDF, it's just the first page, or it's on the landing page, and I think that is a -- If you don't have the time, and capacity, to like build social posts, and especially, depending on who's promoting it, there's all these rules as to whether or not you can share it, but that is a, I think, relatively low lift, and that's easy for me to say, but a relatively low-lift thing to add to any document that I think would really help the overall communication of it.

MS. HOWINGTON: All right, and so that's a plan for some water quality communication. What about sargassum?

DR. CHERUBIN: What about climate change?

MS. HOWINGTON: What about climate change? Yeah, let's keep going. Let's start a fight. All right. Climate change.

DR. CHERUBIN: I mean, every year we get an assessment of climate viability, and the effect on fisheries from NOAA, right, and so I think there's already some slides on that, et cetera. Habitat shift, warming of bottom temperatures, and it's all in the coastal region, right, and so I think there's always some material out there that could be easily turned into brochures, basically, to inform about that very easily, but I think it's something people have in mind, right, the species shift, temperature increase, sea level rise, flooding, you know, something about the king tides, which we have every year, you know, on the Northeast. I mean, Southeast as well, on the east coast, I mean, et cetera.

MS. HOWINGTON: Chip.

DR. COLLIER: Yes, and, for climate change, we are talking about making a webpage for that, because we do have some IRA funding that's coming to the South Atlantic Council to address some of these climate issues, and so adding this frequently asked questions to that, and adding some information, I think would be useful, and so hopefully we're going to get that addressed in the next few months, and we'll share it with you all, once it's completed.

MS. HOWINGTON: So one of the suggestions the OC AP made was a small video, because apparently people love videos. Don't ask me why, but apparently people love videos. That's what they suggested. Do we want to do a video on climate change? I just saw so many criticisms. We're going to stick with web pages. Got it.

DR. LANEY: So back to the climate change for a second. Some of us, me and Brendan, and, Chip, were you involved in it? We did the climate vulnerability assessment for South Atlantic species, and so we have that information as well, if people would like to know, you know, which species are more likely susceptible to climate change than others. We've got that document, and Brendan can weigh in on that, but he, and several of the co-authors, are working to convert that to a peer-reviewed document, and it's already published as a National Marine Fishery Service technical publication and so it's out there already.

DR. CHERUBIN: I just want to add, you know, talking with fishermen, and people, about fish migration and shift in population, right, they don't understand what's going to happen to the resource, who is responsible for the management, because suddenly you have the core of the

species that have moved to another region, and so I think there's a lot of confusion on that and who's responsible for the management of those species, and, you know, you catch cobia here, but actually the stock has actually shifted somewhere else, and what do you do about that, and so I think that's another aspect that fishermen wonder about.

AP MEMBER: I think you bring up a really good point too, which is like there's a lot of really good websites that are out there that are like what is climate change 101, but where specifically we play a really strong role is how does that relate to the South Atlantic anglers that might be coming to the site, and so, in the FAQ, just making sure that all of them tie back to how does that specifically relate to habitat and SAFMC's region?

DR. LANEY: Myra, when you were talking to the fishermen about the water quality, did any of them bring up the subject of dead zones, you know, these deoxygenated areas? That there aren't so many of them, or at least this is my perception, but there aren't so many of those in the South Atlantic region, per se. It's certainly a big deal in the Gulf of Mexico, and in Chesapeake Bay, and sometimes in Pamlico Sound, on occasion, but that might be another one to have a good FAQ on.

MS. HOWINGTON: Brendan.

DR. RUNDE: Thank you. Just in response to Wilson's point about the climate vulnerability assessment, it may be better to wait until that peer-reviewed document is out. There were some changes from the technical memo to the peer-reviewed version, which is currently hung up, unfortunately, in agency internal review, but stand by for that. Great point, Wilson, and I'll be sure to share that, when something new is shareable.

MS. HOWINGTON: We can share that out with the Habitat AP, and then see, after it's released, how we could potentially share it with a further audience, other than just the AP, and so thank you, and keep us in the loop. Forward that when the peer review is done.

DR. RUNDE: Will do. Thanks.

MS. HOWINGTON: So we have an interest in creating a general public FAQs. We have the flow policy afterwards, trying to do like a quick one page, or maybe some social media, and I can work with council staff on that. We have diadromous species FAQ. We have climate change, and a website that we're going to be creating with IRA, and then I wanted to discuss the fish migration and range expansion of who is responsible for management. That is a conversation that is being had throughout the Atlantic coast. That is why a group called E3CG was established. They're meeting Thursday, actually, if you want to go listen in.

It's the executive directors and regional administrators throughout the Atlantic coast, because we see, with the climate, with climate change, with range expansion, there's going to be management problems, and so they are trying to tackle that ahead of time, by communicating what projects are they doing that are climate related, by making certain that there's no duplicative work, that people are working together, and so they are already kind of trying to get ahead of that, but we have not hit a point where suddenly -- Where they're having to discuss that, okay, this management needs to change.

I foresee that happening soon, but it has not happened yet, and so, if the group is interested, I can forward you all that website, and you can look at kind of what the group has been doing. All right, and I will forward the E3CG website to you guys.

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

MS. HOWINGTON: E3Cs and a G, E3CG, East Coast Climate Coordination Group. It's a mouthful. Okay, and then other things that are public concerns, that could come up in the future, that, maybe after we create these FAQs and a flow policy social media, we can discuss plastics, king tides and flooding, and I think that's going to be kind of covered in the flow policy, because those are two things that we're going to be discussing. Sargassum, for me, you mentioned -- We could go over habitat usage and changes with that. That, along with climate change, might cause a fight, but that's okay. Back to the video. Does anyone want to create a video? Wilson does. He had his hand up. He had his hand up.

MS. CROWE: I saw the hand.

MS. HOWINGTON: I'm seeing hands shaking no, and so this might be a week we communicate with the OC AP.

MR. KAALSTAD: I'm happy to put a video together if someone provides the clips. In terms of going out and doing the production side, I can't necessarily do that, but I do have a paid-for app that I can stitch stuff together and make it pretty, that I've done for a couple of our meetings.

MS. HOWINGTON: What would the audience and what would the goal of the video be? What needs to be communicated with a video?

AP MEMBER: Sand. No, I'm kidding.

MS. CROWE: Okay, and so let's nix the video.

DR. LANEY: I mean, if we were going to do one, you might want to just try and explain, okay, here's the council, and here's what the council's responsibilities are, and here's the group that's responsible for discussing and debating those and answering council questions and making recommendations to the council, through the Habitat Committee, you now, and so it's the process. I think a lot of the public don't quite understand the process.

While I have the microphone, one of the other things I'll mention, that we did have some conversation about, is our fish consumption advisories. That that doesn't really fall under the purview of the council, but I think it's an issue of concern to the council, when the species they're managing are too contaminated to consume on a regular basis, and so that one may be another one to throw out there and see what you guys think about having an FAQ, which would probably say, you know, we are aware that some of you know that, you know, species like king mackerel, for example, might have a high body burden of mercury, but the council is not responsible for managing contaminant body burdens, but other people are.

They put out these consumption advisories, and, if you want to know about those, go to a such-and-such page. EPA has a very nice page, where they summarize all of the consumption

advisories, I think, for the whole country. I believe it's the whole country, but you can certainly pull them out state-by-state, and usually those are public health agencies that are involved in those, as opposed to -- You know, it's something that is of interest to the council, but for which the council is not responsible, but about which the council is certainly concerned.

MS. HOWINGTON: So I don't want to over FAQ it. That is one thing of -- I think the FAQ is great for the general habitat, answering those questions. For fish consumption advisories, I wouldn't know where the best place to put that would be. I would want to talk with other people about that, because that feels along the lines of -- In grad school, I did -- All of the grad students did a research project, where we went and ordered fish, and then we did a genetic testing on whether it was the right fish or not. That feels along those lines of like of interest to the public, but maybe not necessarily our responsibility to communicate with the public.

AP MEMBER: I think, and there's a couple of those that you've brought up, that we've brought up, that like don't really -- I think that can be confusing, if we're trying to say what the council does and doesn't do, and then have a lot of information about topics that we don't work on, but, if you framed it in a way that's a web page of like resources about other information and kind of organize it by topic, and then just link to other groups that are doing it, and, like if you want to do something about seafood, and mislabeling, or sustainable, healthy -- You could do like Monterey Bay Seafood Watch, just a link. If you want it to be a source of information, but I would agree that not over explaining it, because it kind of makes it confusing as to what the council does.

Back to the video, and, even though I'm not typically a video person, if you were going to do it, I think you could just take that about page that you have on the website already and turn it into a script format, but in that order, covering like what is the council, what is SAFMC, who are the council members, et cetera.

AP MEMBER: I think you hit the nail on the head initially, when you said what do we want to accomplish, and, to me, one of the things that we could do, with any of this, that would be most beneficial is to educate people. When you let somebody know what you think the challenges are for the task that you have, sometimes you get them involved in a way that they wouldn't be involved before.

Maybe something along the lines of what we see is the priorities of the threats to the recommended -- The body of work that we're trying to do over habitat, and not so much the ecosystem management, and that gets too academic, but the habitat part of it, talking about the threats, as we see them, and what we think we need to do to mitigate it. You wouldn't say these words, “but here's what you can do too”, but you could certainly format it in a way where, if somebody was inspired to start questioning, or asking, or researching a little bit more themselves, they might get involved and maybe vote differently in the election.

DR. LANEY: So, just to jump back to the contaminant thing for a second, you know, I was prompted by Myra's point that so many of those fishermen were talking about water quality, and contaminants are certainly a big aspect of water quality, particularly if you live in North Carolina and you got PFAS in the Cape Fear River Estuary. It’s in your water supply, but it's also in your fish, if you're fishing in the Cape Fear Estuary.

You know, again, I think it could be constructed in such a way so that it's not overly burdensome, and it directs people to the resource that they need to find out about contaminants, and what sort of a threat that poses to not only the fish resource, but the habitats that the fish are occupying and to human consumption of same.

MR. KATHEY: If the fish has more than two eyes, you probably shouldn't eat it.

MS. HOWINGTON: All right, and so what I'm hearing is that, if we were to do a video, which, again, I would like to take this to the OC AP before moving forward with creating B-roll, but, if we were to take a video, it would be for the general public. It would be taking the about page, and turning it into a script, and then discussing the challenges when it comes to the protection and sustainability of habitats off of the South Atlantic. That would be a goal. Okay.

MR. KENWORTHY: Sorry if I missed this earlier, but what platform are we thinking about putting a video out on?

MS. HOWINGTON: So the council does have multiple social media platforms. We are not on the Tik Tok, and so you're not going to get those, but we are on Instagram, Facebook. We are on -- What's it called? X, or whatever Twitter is now, and I'm not a social media person. Have you figured that out? We have a YouTube as well, and so all of those could be something that we could share to. YouTube would be the full video. If we were going to do an Instagram post, it would either -- It would probably be a reel, and it would probably just be a snippet, but this is a probably, because I am not an outreach person, and so I would want to talk with our council staff, and the OC AP, before anything goes into stone.

MR. KENWORTHY: I agree with talking to other programs. I think we have a lot of good ideas in here, and I don't want to speak for everybody, but I'm not the best at outreach, and so I think we really need some expertise on that, but I think basic. I think we don't need to get too crazy about some of the in-depth things that we talk about in this room, as far as what we do as an AP, but I think there's a platform for basic information to share with the public and connect it to the policies that we have and how we're trying to guide them. I think that's important.

MS. HOWINGTON: I think three outreach potential projects is enough. I will hopefully bring a draft FAQ of general habitat stuff to the next meeting. I will mention the video to council staff, and our ABO team, always be outreaching team, of people, and see if they think it's a good idea. Don't look at me. That's John Carmichael, ABO, and then, as for climate change, we will be creating the climate change website, and so I'll be forwarding that to you guys. Let me see. Is there anything I'm missing? I've got the FAQ. Then, after we update the flow policy, then we will move forward with examining maybe if we can do a one-pager, or some kind of social media post, about that.

Speaking of, and I meant to announce this at the beginning of this, and I forgot, we actually did have a habitat one-pager go out last week. This was from the South Atlantic Fishery Management Council. I meant to forward it to all of you, and I forgot, and so I will forward that to you before the end of today. It's basically just a summary of the history of our habitat program, and it was meant to try and drum up some audience for the APs, which is why we sent it out last week, and so I will forward that to everyone, and so we've already gotten started on some outreach, and we're just going to keep getting better.

Then, with that -- We're going too fast again. One second. All right, and so I still have not heard back from the fishing effects database person, who is supposed to be giving a talk tomorrow. I have informed him that he's going first in the morning. He was supposed to go second, and so that shouldn't be a huge leap for him, hopefully, but I want to make a couple of recommendations, Madam Chair, if you don't mind.

MS. CROWE: Go for it.

MS. HOWINGTON: Can we discuss the next meetings now, and switch that up then, and do the workplan tomorrow morning, since David has not emailed me when he's available, and start at nine in the morning, because the workplan is not going to take a whole hour. Worst case, if David's not available, he's supposed to sign on at 10:00, and so, that way, we can finish the workplan in the morning, and David will give his talk, and we'll all be out of here hopefully by 11:30.

MS. CROWE: I think that sounds good.

MS. HOWINGTON: Okay. So, for everyone who is a visual person, I now have the agenda up here. Instead of reviewing the workplan, which is here, Attachment 9, we are now going to talk about meeting dates and methods. Then, tomorrow morning, if David does not email me back saying he's good to go at 9:00, which we will be starting at 9:00 a.m. tomorrow, we will review the workplan in the morning. We will listen to David Stevenson, get his presentation, and then we will adjourn, because we will be all finished. Does that sound good? Love it. All right.

Let's move on to the meeting dates and methods. So, if you all remember in April, or last February, I sent out a survey asking what months would you all be interested in, and are you interested in webinars, and are you interested -- Kind of just getting a feel for what is everyone's flexibility away from two in-person meetings in April and October.

In case anyone is not aware, April and October are very full of meetings, all the time, so many meetings in April and October, and I am certain everyone else has felt the same way, and so do we need to have two in-person, or can we do one really long in-person and one webinar? Would it be better to move to say July and January, and maybe have an in-person in January, make it a big three-day thing, and then, in July, we just have a one-day check-in webinar? Do we want to stick with April and October and have two-day in-person meetings? I would like to discuss, and I would like to decide, and here's why.

We are finishing the EFH five-year review this year in December, and so that is complete. I am not presenting to the council until March, and so, if we have another Habitat AP meeting in between now and then, that would be a little strange. I would be presenting two AP meetings, but, if I'm not presenting until March, we can potentially wait until the summer, have a meeting in the summer, grit our teeth and have an in-person meeting in the summer, because we're going to have stuff to do, according to our workplan, and then, the next January, we can have an in-person meeting and go to a webinar in the summer. It's just an idea. We could flip it.

We could have an in-person in the summer. Who wants to come to Charleston in the sweltering hot 9,800-degree weather in the summer for a couple of days? I know that our fishermen don't want to do a summer meeting, and I recognize that. During the survey, which I can pull up the

results that I presented in April -- If we go all the way to August or September, we start running into schools opening, and professors starting their classes, and so that's not good. If we do it in May, that is when a lot of the fisheries are starting. It's when a lot of tournaments are occurring. It's at the end of a lot of the meetings in April, and so that's not great.

If we -- Do you see how I'm having issues? If we go -- We can't do November and December, because those are the holidays, and so, if we move away from April -- April and October, there's a reason why people pick it, but, if we move away from that, then that means we end up with a meeting in the summer, and that's a bummer. I have -- Okay. Stacie has a question, and then Brendan has his hand raised, and then I'm going to open it up to everyone for conversation.

MS. CROWE: So my question is -- We always have a lot to discuss, which this time we overestimated the amount to discuss. Last time, we underestimated the amount to discuss, and then our discussions lead to assignments, and questions, which then feed the next meeting, and so is it going to be possible to have one longer meeting? I guess the question then is what will we accomplish in a webinar for one day in the summer? So, I guess, how are we balancing the workload, because, essentially, what it means is we're meeting in-person for three days, and then we're not meeting in person again for a year.

MS. HOWINGTON: Right, and so, if that were to be the case, then we would have -- For the in-person meetings, it would be like a day-and-a-half of whatever work groups or policies that we're finalizing summarized and then a day-and-a-half of establishing policies, and then the mid-summer would be the check-in with the work groups, making certain they're doing work, and then also any kind of presentations we need as updates for.

In the workplan we have, we already have one meeting that's heavy and one meeting that's light, because we have our annual report in one meeting, and we have the citizen science update in one meeting. Like, for some reason, we have ended up where the spring meeting is the big meeting, kind of already built in, and so I foresee growing pains, but I don't foresee it being painful, too painful.

MS. CROWE: Okay. Brendan.

DR. RUNDE: Thank you. I just wanted to voice my support for changing the months, going to either January and July, or something like February and August, recognizing that August creates more issues than July probably does, and I'm 50-50 on in-person versus webinar for those two.

AP MEMBER: Regarding webinars, I was involved in a meeting that had to go from a week-long meeting to webinars, and what we did was split the days, and so you had, you know, two to three hours each day, over three days of a week, and so it allows you -- Because you're in the office, and you're still expected to do other stuff, and so it allows you to kind of do your in-office stuff and then get to the webinar, versus having to spend an entire day in front of the computer on a webinar, and so, if we go to webinar meetings, I would recommend that, that we kind of split it over a couple days, shorter days.

MS. CROWE: So, just to clarify though, only the summer shorter meeting would be webinar, and so, when you say shorter meeting, how short are we talking? One day?

MS. HOWINGTON: A day max.

MS. CROWE: One day. Okay.

MS. HOWINGTON: Once it goes past a day, I'm not going to force you guys to sit on a webinar. We did that enough during COVID. Let's not punish ourselves guys.

MR. KATHEY: You lose something in the webinar. You lose the interactions, and you lose the casual conversations. You lose the conversations over a meal, and that may not be critical, but you do lose something, and then you do have the distractions, whether you're at work or just at home, and you have the distractions during a webinar, and so I favor the in-person meetings, because you're making a commitment to do this, and this only, but, obviously, I'm just voicing an opinion.

I would certainly participate however we structure it, but I don't know -- I've participated in a lot of webinars, with different organizations, and they're not as productive as being here doing the work and bouncing stuff off each other and coming back the next morning and saying, okay, we thought about this, and now we got that. You can't do -- That's not accomplished on a webinar, and so, the months, I don't have any issues with, except not the end of July, because that's mini-season.

MS. CROWE: So is anyone opposed to the change in the months, or has significant concerns?

MS. HOWINGTON: So let's say mid-January and mid-July, because, the beginning of July, then you're into July 4th, and you end up with people who have taken entire weeks off, and so I can't do that. We can't do end of July, and so mid-July and mid-January, and so you're far enough away from the holidays where it's not a big deal, but, once you get closer to February, then you start dealing with MLK weekend, and then dealing with March reports for the council meeting, which I'm trying to avoid for myself, and so that's a personal thing.

MR. KATHEY: MLK is mid-January. It's January 15.

MS. HOWINGTON: Wrong holiday. What is the holiday in February?

MS. CROWE: February is President's Day.

MS. HOWINGTON: There you go.

MR. KATHEY: President's Day, but you're talking about having the meeting in mid -- You just have to work it around the MLK holiday.

MS. HOWINGTON: Yes, around MLK, which is doable. Okay.

MR. KATHEY: The mid-January would be the in-person, right, and that's what you're talking about.

MS. HOWINGTON: Or two in-person. If we're against webinars, I'll do two in-persons. I just know that, during the summer, travel gets more complicated, and it's really hot in Charleston. That's not necessarily --

MS. CROWE: Well, and families are traveling.

MS. HOWINGTON: And families are traveling.

MS. CROWE: So, that being said, it might be -- We would have to see how attendance was, because, even if you put it on the schedule six months in advance, if that's the only week a family can plan a vacation, then they're not going to be here.

MS. HOWINGTON: Right, or they're going to use this as their vacation.

DR. CHERUBIN: Do we have to change the dates at the moment? I'm just saying, because somehow we've organized our schedule to account for those two dates, and so, you know, I know next year, or sometimes in end of April, early May, I have to be here, and then every year, you know, in the fall, I have to be here at some point, and so that's part of my planning, and so it's been going fine, but --

MS. HOWINGTON: We do not have to change the months. I'll just let you guys know that, if you go to the month of July, every week is open. If we go the month of April, we need to put it in the calendar right now, because there's only one week available, and so I'm hoping all of you all are available that week. That's the problem that we're running into, is that the three or four APs that I've already met before me have already approved their meeting dates, and so we would need to move our AP beforehand to be able to get, you know, primo date selection. We're one of the last APs, and so we get what's left.

MR. KATHEY: So, if you want to zero -- You know, if you identify the months, and you want to zero-in on dates, could you do a doodle poll, or survey chimp, or something like that? We could all -- You could see what kind of, you know, tendencies you have for viable dates.

MS. CROWE: Matt.

MR. KENWORTHY: I like doodle polls. Are we -- We're not going to plan one for this upcoming winter, will we, or will it be kind of like a year?

MS. HOWINGTON: If we decide to move -- That's why we need to do it now, is because I'm not presenting to the AP in December. I'm presenting in March, and so if we try -- If we move it, we move it now, and it doesn't disrupt any flow of any process or anything like that, and so we would not do winter next year. We would do one meeting in the summer next year, and then we go winter and summer, instead of spring and fall.

MR. KENWORTHY: Okay. I know I'm one person on here, but I would push for the latter part of January, or early February. From my perspective, we like to take advantage of January too in FWC, and so we have a lot of internal meetings and big things going on, and so, as far as in-person or online, my vote would be for in-person on both of them.

MS. HOWINGTON: Okay, and so what I'm hearing is that we prefer in-person, and so two in-person meetings, and we're still maintaining that process. There is interest in mid-July and in August, but not necessarily end of July or beginning of July, and there's interest in mid-January, late January, early February, those like three or four -- That span of three weeks, and you all are okay with doing a doodle of trying to figure out when best in the summer to do, and, again, mid-July, mid-August being the chunks.

MR. KATHEY: I would say that, when we get the doodle poll, it's not that we're going to put in the ones we prefer, putting in our availability, whether we prefer it or not, but are we available on those dates, are we clear on those dates.

MS. HOWINGTON: Because, again, this is the first year that we're going to be switching things around, and so it might be that, this year, we do mid-August. Next year, the availability is mid-January, but that means that, next August, I can say what's your availability from January, mid-January, to mid-February, and then we, as group decide, like we have the last couple of APs. I've brought weeks to you saying, these are what's available, and, if we're moving it to winter and summer, I'm going to be able to give you more than two, which will be very nice.

So, as an AP, the action items that we are deciding, and I'm saying this for the record, is we want to maintain two in-person meetings. We are interested in mid-January to mid-February and mid-July and mid-August, and not end of July.

MS. CROWE: I do not like mid-August.

MS. HOWINGTON: I do not either. I do not like mid-August either, but we are doing it as a group, and not as a personal. All right, and so two in-person meetings. We are going to decide this time via doodle poll. Next time, we will decide all together in-person, and so that doodle poll for your availability will be going out probably Thursday, and I will need an answer within a couple of weeks, or a week, and then two in-person, mid-February, and then I'm going to send out a doodle poll. Did I miss anything?

MS. CROWE: That's what I have written down in my notes.

MS. HOWINGTON: That's what I have written down in my notes. Did I miss any points We're going to be -- That's what I missed. We're skipping this winter, having one meeting next year, and then, the year after that, going back to two in-person meetings. Then a meeting next year is summer. Spring is -- ICAST is middle of July. Okay. I will do my best to avoid that.

MS. CROWE: To avoid middle of July?

MS. HOWINGTON: Yes. I'm about to send a doodle poll out with like five weeks of availability and hope that we get one where the majority of us are good. All right.

MR. KATHEY: Why don’t we just shoot for August, if there's a schedule problem with holidays and --

MS. HOWINGTON: I hate August.

MS. CROWE: Well, mid-August is challenging because --

MS. HOWINGTON: It's the worst.

MR. KATHEY: I know, but how about, you know, the first week of August?

MS. HOWINGTON: I will send out an availability with multiple weeks, understanding that this is going to be a two-day meeting, and so it'll be in two-day snippets, or I'll probably do a go-to meet, where you all can choose, of the weeks, what your availability is. It's going to be a big questionnaire. I apologize for that in advance, but it'll be fine, and we're skipping spring of 2025 and then having a meeting summer of 2025. Okay. Thank you. As much as I don't like the fact that I'm probably going to end up having this Habitat AP meeting on my birthday, which is the first week of August, just accepting my fate as an adult.

MS. CROWE: We'll bring you a birthday cake. We'll sing.

MR. KATHEY: We'll bring presents. I mean, that's like thirty presents.

MS. HOWINGTON: I very much appreciate having flexibility of meeting times and dates. Again, we have one week in April we could do, and we would have to do Monday through Wednesday, and so this does open up availability, as much as it is going to throw us for a loop for a little bit.

MR. KENWORTHY: I just want to make sure I heard you correctly, and so our next meeting then would not be until next August.

MS. HOWINGTON: Or July, yes.

MR. KENWORTHY: Or July.

MS. HOWINGTON: Yes.

MR. KENWORTHY: Okay, and so that's when we'll come back to the table with revisions to the flow policy document.

MS. HOWINGTON: Right, and we'll have a little bit of an extension on our timeline, and so we should definitely get it done in between now and then.

MR. KENWORTHY: No pressure.

DR. LANEY: Just to clarify, the workgroups are going to be meeting in between now and then>

MS. HOWINGTON: Yes. Workgroups are 100 percent going to be meeting in between now and then, and so we should be working on our food web working group. I'm going to be sending out homework, stuff for Jordy, or connections for Jordy. We're going to be talking about abundance and life stage EFH during the next meeting, and so I'll expect everyone to have done research in between now and then, because, again, you get an extension, and then the flow policy will hopefully be finished by now and then, to then be edited again, but mostly finished in between

now and then. So does anyone online have anything they want to comment about, or any advisory panel members online have anything they want to comment about this? I'm seeing none.

DR. RUNDE: Yes, just one real quick thing. Just going forward, once we settle into this rhythm, I would prefer, if it's at all possible, to try to schedule as far out as possible, which may be farther out than six months in advance, and so I'll, of course, defer to you on that, Kathleen, but I could foresee a future where we're sitting at a meeting in January, already knowing when the July meeting is, and looking at the following January. I don't want to open up a can of worms of debate for that, but I know that the council schedules their meetings a year-plus in advance. That's a little more complex than our meetings, and so that is understandable, but, yes, just throwing that on the table. Thank you.

MS. HOWINGTON: Brendan, you have no idea how nice it would be to plan at least two years in advance, but that's just me, and so let's get the summer meeting onboard, and then we can discuss going past that one. With that, it is 4:20. We are supposed to adjourn at 4:30 today. I have nothing else that I could squeeze in in those ten minutes, and so, Madam Chairwoman, can we end ten minutes early, please?

MS. CROWE: Yes, let's do it.

MS. HOWINGTON: All right.

MS. CROWE: So, just to recap, then tomorrow morning is at 9:00 a.m., and it looks like we have two presentations, and we'll be finishing up early.

MS. HOWINGTON: Yes.

MS. CROWE: All right.

MS. HOWINGTON: Thank you so much, guys.

(Whereupon, the meeting recessed on October 29, 2024.)

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OCTOBER 30, 2024

WEDNESDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Hilton Garden Inn Charleston Airport and Convention Center, North Charleston, South Carolina, on October 30, 2024, and was called to order by Chairman Stacie Crowe.

MS. CROWE: Good morning, everyone. Welcome back. It’s 9:02, and so let’s go ahead and get started with this morning’s discussions. We’re going to start off this morning with a presentation

by David Stevenson and Tori Kentner, and they're going to be talking about the Mid-Atlantic Fishery Management Council fishing effects database and app. David, if you're ready --

MS. HOWINGTON: Actually, I think Tori is going to be the one presenting first, and so I sent you the prompt, Tori.

MS. KENTNER: I think, Dave, you have a presentation that you were going to share?

MS. HOWINGTON: Is David going first? Okay.

DR. STEVENSON: Yes, I'm going to go first.

MS. HOWINGTON: David, you should have the prompt now.

DR. STEVENSON: Bear with me.

MS. HOWINGTON: There we go. We can see your Go to Webinar launcher.

DR. STEVENSON: Yes.

MS. HOWINGTON: All right. We can now see the Fishing Gear Effects PowerPoint.

DR. STEVENSON: Super. So, this is a project that's been going on now for about eighteen months. My role, in setting this up, will end at the end of this year. I have been busily adding research publications to a giant spreadsheet which has, at this point, 300 records, 300 publications, in it, and a whole bunch of data elements that we've extracted, that I've extracted, from each publication, regarding location, gear type, substrate type, things like that, which you'll see in more detail when Tori runs through the app. She's the one that has developed the R Shiny application of the information that's in this spreadsheet.

This project will continue after I'm offline, and we just wanted to make sure that we're reaching out to as many potential users of this database as possible, and that's why I asked Kathleen to set us up for a presentation to you folks.

As the title suggests, the focus of this database is the effects of fishing gear on marine habitats. It does not deal with any ecosystem effects, that is the effects of removing a certain group of species say, from the fish community and what effects that would have on the ecosystem, on the fishing ecosystem. It's strictly the direct habitat effects of the gear.

Those of you who don't know me, I used to work for NOAA Fisheries, at the Regional Office in Gloucester, Massachusetts, and one of my jobs there was working with the Mid-Atlantic and New England Councils and creating EFH designations and reviewing information on the fishing effects of the habitat effects of fishing gear, and so I started putting together, you know, a list of relevant publications in the Northeast, where I was working, and this database was used by the New England Fishery Management Council for habitat management purposes, to identify gear types that had more of an impact on benthic habitats than others, and it eventually led to the designation of areas that were closed to mobile bottom tending gear, but it had a very specific focus.

It was the Greater Atlantic Region from Cape Hatteras north. It was federal waters only, because obviously, councils have no jurisdiction in state waters, and it was limited to the gear types, and habitats, that exist in the Northeast region.

The purpose of this project was to expand that database, so that it was relevant to the entire country and the U.S. territories in say the Caribbean, and, at the same time we expanded the database to include a whole bunch of new data elements that were not included in the original database. The project was funded originally by the NOAA Office of Habitat Conservation. It was an EFH grant that we -- Well, I didn't apply for it. Jessica Coakley and Michelle Bachman applied for it, and then I was selected as the contractor. Michelle and Jessica are advisors on the project. They've worked very closely with the two of us in developing this database.

I think I've already mentioned this, and some of the -- This is the original database. It was created by the Habitat Plan Development Team of the New England Council. It was mostly originally through -- Publications were added through about 2010, and then, after, it was used to populate a seabed impact model that was used for management purposes. It was updated with some more publications, but they didn't go much past 2018.

They didn't include things like models. There were a whole bunch of subjects, and gear types, that were not included in the original database, and the more important thing is it was not widely accessible. It was an internal document, for internal use, and that was one of the big improvements that's been made with the new version of the database.

In the new database, one thing that you all have to understand, anyone who is going to be using this, is it includes any relevant research done anywhere in the world, and so anything that might be of relevance to your particular needs in a particular location, a particular gear type, particular habitat. Anything done anywhere in the world that could be relevant is included, and so you're not limited to just research work that was done in your location.

I've made a great effort to go beyond journal articles, so that, when I say published research, it includes a whole lot of reports and other gray literature that we didn't include in the original database, which was limited to journal articles, and, as Tori will show you, there are links in the application where you can download PDFs and reference data, and so it's a very powerful application, I think, as we'll try and demonstrate to you.

Here's some of the topics covered now that weren't covered originally. European scallop dredges, which have teeth, that plow through the bottom to get the scallops up into the dredge, because there are a few gears like that that are used here, like bay scallop dredges in this country, and there are a few gear types that have beams instead of otter doors.

Because it goes to the shoreline now, it includes effects of rockweed harvesting, for example. It includes derelict fishing gear, and their effects on bottom habitats. Water column effects, like turbidity produced by trawling and soft sediments. Biochemical studies, release of nutrients from the bottom as a result of disturbance. Deep-sea corals, which were not included before, and so there are references in here dealing with effects, or potential effects, of fishing gear on deep-sea corals.

Canyons and seamounts, which will not be of great interest to you. Seagrass, intertidal macroalgae habitats, gear technology studies, and we've included those, and there are a few global-wide research papers, dealing with things like effects of trawling on carbon storage and bottom sediments.

This is the app, which I will not linger on. Tori's going to go through this, and then I want to do some -- Just to demonstrate the power of the application, I want to go through some kind of targeted searches, and so you might want to be thinking about something of particular interest to you that you would like us to run through the app, to see what's here and what isn't.

When I extracted data from each publication, there were eighteen data elements that had to be populated in the database for each publication. There are a whole lot more fields, because, for example, when we're identifying the gear type that was addressed in a particular publication, it might be more than one gear type, and so we would have a column for trawls, a column for dredges, a column for hydraulic dredges, column for traps, et cetera, and so the number of actual fields in the spreadsheet multiplies quickly, but all of those ones I just mentioned would be under the general title of gear type, and so that would be -- The data element would be gear type.

We have included no results. There are no results in this database, except for the published abstract, which we've plucked out of each publication and put into the app. We didn't want to get into any subjective presentation, or summary of any results, and so the methods -- The focus was really on methods.

So, now that the database is complete, and the Council Coordination Committee has met, and they've received this presentation. Their habitat workgroup is taking over responsibility for maintaining the database, adding additional publications to it, and Tori will be managing the app, and so we're in the process of trying to select -- Trying to, but we're in the process of selecting individuals, a few around the country, who would take on the responsibility of looking for new publications and adding them to the database, and so we're hoping we can get somebody in the South Atlantic to help us with that.

I'm going to be available through the end of the year to do some training for those people. It's not a straightforward push-a-button kind of a job. You have to -- You don't have to read the whole paper. That would be asking too much, and it's really not necessary, but there are some do's and don'ts for people who will be adding to the database, and so that's it for the first part of this presentation, and Tori will take it from here.

MS. HOWINGTON: Tori, you should be getting the prompt for your screen.

MS. KENTNER: Okay. Can you see the Habitat database?

MS. HOWINGTON: Yes.

MS. KENTNER: Okay, cool. I'm Tori Kentner. I work at the Mid-Atlantic Fishery Management Council. I do a lot of spatial analysis, and data analysis, data visualization, and so I think Dave did a great job of explaining the database, and so what I did is I basically just built a place for it to live online, and so this is using R Shiny, and you can see the whole database is here, up front and

center, and then I created a number of kind of filters, so that it's all tables, or all fields, that are in the database, but you can go through, and you can filter based on those different fields.

There's publication type, type of review, study type, large marine ecosystem, depth ranges, substrate type, gear type, biotic type, epifauna and flora, recovery, water column, biogeochemistry, and then there's also a search bar, and so, if there's something in particular you're interested in, you can type it into the search bar and search that way.

We also have study ID number, so that each paper has its own number, and so they're referenced throughout the app, and so if you see a paper that you want to look up individually, you can just type it in here, and it will filter to that individual paper.

Each paper has a link that you can click on, and these links are all shareable. They all have a unique URL, and this gives an overview of the paper, and so methods and abstract, a map of location, if there's any location data, and then it goes through all the different fields that Dave has pulled out of this paper, and so author, year, keywords, all of those.

A lot of those are filters on the front but some of them have -- There's more information here than you see on the front page, and so, like I said, the methods and the abstract, but, also, in addition to gear, you have gear notes. In addition to sediment, you have sediment notes. There's a lot of information here that Dave has pulled out to help us understand these different papers. At the bottom is a citation, and then a link to the paper, and then information of if it's behind a paywall or not, and so making it accessible for you to reach the actual paper itself.

We have an about page, and that kind of goes over everything Dave covered, how the project got started. There's a page about fishing gear descriptions, and so this is how Dave defined the different fishing gears. These are all the references that he used for that. There's a map, so that you can look kind of across the region, or wherever you live, and you can see what kind of papers are available in your region, and these are color-coded by gear type. If you see one you like, you can click on it, and it takes you to the actual paper.

Then we have a submit a paper function, and so, if there's something in here that you don't see, that we should add to our database, submit it here, and then Dave or I will review it, or, in the future, somebody else will review it.

One thing I should show is kind of how this works, and so if you're looking here at a paper, and let's say you're interested only in journal articles, for publication type, and so you check that off, and then these other filters will reduce in number, to kind of show the tally after you've added filters, and so, if you select journal article, and then you select only experimental, then the other filters will update as well, and so now you only have maybe seventy-two for different depth ranges. Maybe you're only interested in shallow water, and so the table will keep reducing that way.

You can click “clear filters”, if you have too much going on, and you want to start over again. Something else I should point out is we are working on an EndNote library, or a Zotero library, so you can download this database right into EndNote or Zotero. For the time being, you can also download the citations as a CSV file, and these will be filtered based off of the filters that you choose, and so you don't have to download the entire database. You can just download the filtered database. I think that's it, but, Dave, did you want to go through an example?

MS. HOWINGTON: Sounds great. One sec. So everyone who's here, we're having a little bit of a hard time reading, because it's up on a projector, so it's a little bit fuzzy, and on the Habitat and Ecosystem Advisory Panel meeting for this, underneath this subject, the app link is on that agenda webpage, and so everyone can go click on that, and then we'll be able to see a little bit better. Wow. You zoomed-in a lot.

MS. KENTNER: Does that help? T

MS. HOWINGTON: That is helpful, yes. Thank you.

MS. KENTER: Okay. Great.

DR. STEVENSON: Are there any questions for either one of us at this point on this presentation?

MS. CROWE: I don't see any hands in the room.

DR. STEVENSON: Well, I'm going to -- What I want to do -- If there's anyone -- Does anyone there have a suggestion for a demonstration we can do of something of interest to you in doing a search using this application?

MR. KENWORTHY: I don't have a specific request on this, but I guess I do have a question in general. I'm curious at what the major usages of this database have been so far, and how it's been applied, and real examples, if you can share a little bit about that.

DR. STEVENSON: Well, it was only released officially a couple weeks ago, because we wanted to get the database with the 300 records in it all nice and, you know, done, so it could be used, and so it hasn't been used much, but there's been a lot of interest expressed by Regional Office folks, NOAA people, and council staff.

There's also been some interest expressed by the academic community, because it's obviously going to have some application there, but it's -- Whenever an EFH review is done by one of the councils, they're supposed to update the fishing effects information that would be specific to their particular FMP, or designated EFH for a particular species, and I know that, when the councils submit draft FMP documents to people in the regional offices, because I used to do this, we have to review them and make sure that there is a section in there that has an updated evaluation of fishing effects.

Those are the users that we had in mind, that the funders of this project had in mind, when it was first presented, but it's yet to be seen how widely it's going to be used, and a lot of that depends on how many people know about it, and so that's why we're trying to reach out to as many people as possible.

MS. KENTNER: I saw one case study already where it got sent to someone within NOAA. I think they said that they were working on a habitat guide, and so they're building a guide, with BOEM funding, to indicate sensitive and important deep-sea coral sponge habitat, and so I think that was one case where they were able to use the database to find papers on there.

DR. STEVENS: Yes.

MS. HOWINGTON: Then, for examples, we've been talking a lot about sandy bottoms and the infauna for that habitat. Why don't we do some kind of search around that?

MS. KENTNER: Sure, and so I'm going to zoom-out a little, just to make it a little easier for me. Substrate type, we can select sand, and then did you say infauna?

MS. HOWINGTON: Yes.

MS. KENTNER: So that gives you 110 papers, and then if there's something in particular within there that you're interested in --

MS. HOWINGTON: Can we limit it to South Atlantic?

DR. STEVENSON: Yes. This is kind of cool, because you can see, right here, how many different areas are represented.

MS. KENTNER: Southeast U.S. continental shelf, I think.

MS. HOWINGTON: That works.

MS. KENTNER: So you've got two papers there, and this, I think, is part of Dave's point, too. There might be other research that's not yet in this database, and so we would be interested in hearing about those papers, if you know of them.

DR. STEVENSON: Well, more importantly, there could be relevant studies done in other areas. Like, if you put in -- Well, put in Northeast U.S. continental shelf, as a second area, and see that's going to immediately bloom up to how many?

MS. KENTNER: Twenty.

DR. STEVENSON: Twenty. Yes, and that's a much more reasonable number.

MS. KENTNER: Something I didn't mention is the search terms actually search the abstracts as well, and the methods, and so it's not just what's in the table here, and so it gives you everything that's in our database gets searched by the search bar, and so that kind of helps bring in more papers.

DR. STEVENSON: Do a search that's just limited to that LME Southeast shelf without any other. How many do we have there?

MS. KENTNER: Seven.

DR. STEVENSON: Seven. You're going to find that there are majority of -- Well, I shouldn't say the majority. There are a lot of these that are -- As you could see in the map, a lot of them are done in Europe, in western Europe in particular, and, if you're interested in research done on soft sediment substrates, say from trawling, you're going to get a bunch, and you might want to further

limit that by depth, or infauna versus epifauna, or whether or not the study addresses recovery of disturbed habitat, and so there are a lot of kind of cool ways to zero in and narrow it down to something very specific.

MR. KATHEY: The total number of records in that database, again, and what is that?

MS. KENTNER: 300.

MR. KATHEY: 300. Thank you.

DR. STEVENSON: There will be more, and, if any of you have any to suggest, please, you know, fill out that little submit button.

MS. HOWINGTON: Can you show the -- Submit button. Thank you. So top-right-hand corner, guys, and there's a submit button, if anyone knows of any papers they feel like would be appropriate for this.

DR. STEVENSON: We're particularly looking for gray literature. I mean, it's fairly easy to find journal articles. It's not nearly so easy to find state agency government reports, things that are, you know, gray literature stuff that -- Michael Barnett, who you're all familiar with, his seminal summary and description of the effects of fishing gear used in the Southeast U.S., and that was done in 2001, or 2003, and so I went through that publication very carefully and tried to find some of his sources. It's -- Most of them are just -- You can't find them. They're not online anywhere.

MS. HOWINGTON: All right. Do we have any questions, or comments, on that for David, or any suggestions? Now, keep in mind, you do have the submit button right there. One of the action items was going to be what papers can we suggest, but, if there's a submit button, I would rather not type all of those papers out, and have you guys just submit them, but, if anyone has any that they don't know where they are, and think they need to find them, let me know, and I'll try and write them down in the notes.

MR. KATHEY: A quick question. Do you have a list of criteria, when people are considering submitting something, that they need to look at, to make sure that it's applicable to the type of documents you're looking for?

DR. STEVENSON: At this point, it's up to us. If you submit a suggestion, we'll review it. The criteria aren't very tight, believe me, and so, as long as it's, you know, fishing gear impacts on marine habitats, of some kind, it's likely to go in there.

MR. KATHEY: Okay. Thank you.

MS. CROWE: David.

MR. WEBB: I had a question about the utility of this and what the intent is. I went to an article in the ICES journal about distribution of trawling-induced sediments in a marine protected area, and, as was presented, there's no conclusions about what impact that may have, but it describes in detail what happens when a trawler stirs up the bottom, measurements, the particle sizes and all that, and so would this be intended to be a tool for a study on what the impact of sediment is on

soft or hard corals, or other marine life, and this just takes out the part of having to do the research about documenting what happens when the bottom is stirred up? Without the conclusions of what happens when the sediment gets into the marine protected area, obviously somebody else would have to determine that. Is that what the intent is of this?

DR. STEVENSON: Yes, and if they need -- If you want to know more about the conclusions that are in the abstract, because you'll be able to -- The abstract will be right here in the application. For anyone who wants to dive deeper into any of these particular papers for results, they're going to have to read it. The tool will direct you to relevant publications that you might want to spend more time on. Does that help?

MS. CROWE: Any other questions for David or Tori? I'm not seeing any further questions in the room. Oh, wait. Never mind. We do have one.

MS. MURPHEY: Hi. This is Trish Murphy, the council member, and I just noticed, on 1098, I think you've got one of the authors misspelled. That should be Gordon Thayer.

DR. STEVENSON: I believe you're right. Not Gordon Tayner.

MS. MURPHEY: I just catch that because I know those guys.

DR. STEVENSON: Yes.

MS. MURPHEY: But I do love your database. I think it's very useful. It's cool to be able to just quickly find things like that, and so thank you.

MS. HOWINGTON: All right. Since we're seeing no other questions, David and Tori, thank you so much for presenting this. We really appreciate it, and, everyone, there is a submit button, if you know of any papers that you think would be applicable to the Fishing Effects on Habitat database, and please go submit it.

MS. KENTNER: Great. Thanks for having us.

DR. STEVENSON: Yes. Thank you.

MS. HOWINGTON: For up next, guys, we have the -- We need to review the workplan, but then we have also had a request from Paula Keener, who is feeling better, and I'm very grateful for that, to say a few words, because she is our workgroup lead for the wind policy, and we also had a request to return back to the wording of what is a living shoreline. Madam Chair, can I recommend we go back to Paula, we go back to the wording, and then do you want to do -- Do you want to do Other Business with Lara and Holden first, and then end with the workplan, or do you want to do workplan and then Lara and Holden?

MS. CROWE: I think we should end with the workplan.

MS. HOWINGTON: Okay. We can end with the workplan, and so Paula first, return to the wording for the living shoreline's definition. Lara and Holden, you're then next, and then, finally, we will end with our workplan, which I did tweak after the discussion about meetings and

discussions yesterday, and so that looks completely new, and it is not online, because I tweaked it this morning. So, with that, Paula, you are online. You said you had a few words you wanted to say.

MS. KEENER: Thank you, Kathleen. Thanks, everyone, for going forward with this without my participation yesterday, and I appreciate Kathleen leading that, and, also, I appreciate all of the working group members' participation to get the draft to where it is right now.

A couple of things. When we were discussing the decommissioning activities, prior to when I was supposed to present -- Gosh, I'm sorry, and I can't even remember, but, during the decommissioning presentation, I was going through the energy policy, to see where we had addressed certain items that were brought up during that discussion, and I just wanted to say that we have -- I'm not going to take a lot of time to point it out, but I'm just going to do a very high-level overview where I know we can do some wordsmithing again, Kathleen, if that's what the decision was yesterday, but I wanted to reiterate that we took, in the development of this draft policy, a lifecycle approach.

We have addressed interstitial habitats, and the biodiversity within those, and we have construction and decommissioning activities addressed by thirteen of the best management practices. Cable location, that conversation took place during decommissioning. We have five BMPs that address that. Mitigation and compensation, decommissioning is addressed in that section, with six best management practices.

Monitoring and research is also addressed. There was a lot of conversation about the importance of collaboration among agencies, other entities, and focus of research projects related to decommissioning and monitoring. Then, also, stakeholder engagement addresses decommissioning, and talks about the importance of working collaboratively on these kinds of activities, if they're going to remain artificial reefs, who is in charge of monitoring those, et cetera, and so, again, apologies if I've repeated some of the discussion from yesterday, but I just wanted to give a high-level overview of what is in the document. I think it's very comprehensive. We borrowed extensively from North Carolina and Virginia, I believe. Virginia, Kathleen? No. The Mid-Atlantic. Sorry.

MS. HOWINGTON: The Mid-Atlantic and Northeast.

MS. KEENER: Yes. Thank you. So, anyway, that's all I wanted to say. Kathleen, thanks again for carrying this forward yesterday, and I thank you all for your time that you spent on it yesterday. That's it.

MS. HOWINGTON: Thank you, Paula, and thank you so much for being our workgroup lead. I appreciate -- I'm sure we all appreciate all of your work in the policy statement on energy. All right. So then moving on to what is actually next in the agenda, and so that's cool. We're actually going in order, unlike the rest of this meeting.

The review of upcoming projects that require EFH consultations, one of the things that was the goal was to determine what a living shoreline was in the context of the council discussions. That way, everyone is clear that, when the council says -- We are going to recommend that, when the council says, “living shorelines”, they use a definition that we feel comfortable is what HCD needs,

that we feel comfortable is what we as a group agree is a living shoreline, and so I sent out this wording yesterday and asked you guys to review it, to double-check that we weren't missing anything. Discuss.

All right, and so I'm not seeing any feedback. I'm not seeing any hands raised. Are we still comfortable with recommending to the council that, when the council says, "living shorelines", this is the definition they are using? To clarify any kind of confusion, this is the South Atlantic Fishery Management Council living shorelines recommended definition. I'm seeing thumbs-up. All right. We're just rocking through this to-do list, you guys. Come on. That's the theme of this meeting, is we're rocking through this to-do list. All right.

The next thing is Other Business, which, if you all remember, on Monday, I added something to our Other Business, and that is Lara Klibansky and Holden, who are both here. Holden Harris. Lara Klibansky is the IRA project coordinator for the council. Holden Harris is a CEFI staff member, and so they are both recent hires. They have requested to present at our now summer meeting, and so we'll discuss that during the workplan, but they wanted to introduce themselves and make certain that -- To kind of get the ball rolling on these conversations., and so, Holden and Lara, who wants to go first? Lara, I have you unmuted on my end.

MS. KLIBANSKY: Great. Thank you, Kathleen. Can you hear me?

MS. HOWINGTON: We can. You're a little bit quiet, and so use your outdoor voice.

MS. KLIBANSKY: Okay. How's this?

MS. HOWINGTON: Better.

MS. KLIBANSKY: Okay. Thank you so much, Kathleen, and good morning, everyone, and thank you so much for allowing us time to speak with you today. Holden and I are going to give you a brief overview of what we're doing, and hopefully, at your next meeting, like Kathleen said, we'll be able to give you more of a complete presentation. I am the Climate Projects Coordinator for the South Atlantic Council, and my role is to coordinate the council's IRA projects.

These are projects being funded by NOAA, using designated Inflation Reductions Act money, and this is why these projects are often referred to as IRA, or sometimes IRA projects, and so these funds are available to all of the U.S. regional management councils and are being distributed via a proposal review process, and so each council is developing IRA proposals for these projects.

The South Atlantic Council proposed four projects, with a total cost of approximately $2.5 million. Two of the council's four projects have been funded, and two are still undergoing revisions. The first project, and I believe what will be the most relevant to this group, is titled "Evaluating Climate-Driven Distribution and Habitat Changes in South Atlantic Fisheries". This request went out on October 15th, and it will close November 15th, and hopefully we'll get some good proposals in there to start reviewing.

You can review the request for proposals, or the RFP, on the council's website, under the News and Updates tab, if you haven't seen that, and it has a more complete description of that project. The other three projects are focused on Data-Limited Fisheries Management Strategy Evaluation,

Programmatic Review Addressing Management Process Efficiencies to Improve Resilience, and then, finally, Climate Impacts on Fishing Communities, and the Data-Limited Fisheries Management Strategy Evaluation RFP should be coming out in the next month or so.

In addition to coordinating these projects, I also sit on two climate-related coordinating groups, as the South Atlantic representative. The first is the supporting team for the East Coast Climate Coordinating Group. This group is focused on coordinating climate activities between the east coast regional councils and the NOAA regional offices and science centers. This is sort of a spinoff from the East Coast Climate Change Scenario Planning that hopefully you've heard of, and that a lot of sort of recommendations for how to address climate change and fisheries management came out of.

The other coordinating group is called the Southeast CEFI Decision Support Team, and that's CEFI. Chip Collier and I sit on that team together, as the South Atlantic representatives. This is the point where I'm going to hand it over to Holden. He is going to give you an overview of what CEFI is, what it stands for, and sort of what this decision support team is, and so Holden?

MS. HOWINGTON: You're muted on your end. I think I fixed it.

MR. HARRIS: Okay. Can you hear me now?

MS. HOWINGTON: There you go.

MS. HARRIS: Can I share a screen here?

MS. HOWINGTON: You should be able to share your screen. I will send you the prompt right now. We see it.

MR. HARRIS: What screen are you seeing?

MS. HOWINGTON: The presenter view is on the left and the big -- Yeah, we can see both.

MR. HARRIS: Okay, great. Well, thank you, Kathleen, and thank you to the working group. I can't see you, but I'll just give a really high-level presentation here, rather short.

MS. HOWINGTON: We lost it. Pull it back. Full screen it. Perfect.

MR. HARRIS: It's going to be really high-level, and, as Lara mentioned, what we would like to do comes socialize this more with an in-person meeting. We discussed it for this meeting, and decided it might be a little bit better to wait, and so we wanted to give a little bit of prelude, in case anyone wants to become more involved, or engaged, at this point. Then, because these are long-term activities, that really require engagement from the management stakeholders, we want to have you informed from the very beginning.

You've probably heard about this CEFI, and this is the Climate Ecosystem Fishery Initiative. It's also IRA-funded, similar to the IRA funds that have gone to the council. This is through NOAA, which has gone through several line offices, including National Ocean Service, with the bulk of it going to the National Marine Fisheries Service, and so I'll mostly touch on our role at the Southeast

Fisheries Science Center. I'm Holden Harris. I'm a research fisheries biologist at the Southeast Fisheries Science Center.

At a very high-level, what is CEFI? From Headquarters, it's handed down as this vision of a reliable delivery of ocean forecasts and climate-integrated products that will be used for operational production with climate-informed advice to increase capacity, with this grand-level view of, you know, developing climate resilient and robust fisheries.

The general model that has come down is largely this investment into the regional ocean modeling capabilities. From this, we're developing the Northwest Atlantic 12 regional downscaled model, which will model the northwest Atlantic, Gulf of Mexico, and Caribbean from the MOM 6 ocean model, and then NOAA is developing this information hub to get all the data from this to the different users, and then a lot of the actual work itself will be done under the blob of the regional decision support teams that I mentioned.

We have some members from this group that are active. As part of that, and then from that, we'll have projects from there, and so the Science Center has about ten projects that will be CEFI-integrated projects, and then the councils themselves have these projects that Lara mentioned, and not only the South Atlantic, but also the Gulf and Caribbean, and then, ultimately, the goal is that this informs management decisions.

This is this kind of this end-to-end framework laid out from Headquarters of taking these regional ocean modeling outputs. These are hindcasts, near-term forecasts, and long-term projections from the ocean model. The northwest Atlantic is the one you see on the bottom of those three models. That's the furthest one along. Then these will inform different ecosystem modeling applications, and then our job is to develop these advice pathways, which is where we integrate with this group.

Who is doing this is there's the national -- There's the national level, that's happening at headquarters, and then each of the science centers develops its own regional teams, and then, because the Southeast Fisheries Science Center and the Northeast Fisheries Science Center share an ocean, we're having species move across them, and we're coordinating between our groups as well.

Most of this work comes down to the decision support teams. The core team itself, of what we're actually getting, and what we're hiring is kind of -- We have Mandy Karnauskas as our lead. Ana Vaz, who has worked with this group before, is the regional ocean modeler. We've hired a social scientist, Kelsi Furman, and I'm the ecosystem modeler. Then we'll have a spatial modeler, for the marine animal turtle division, that we're hiring, and several assistant scientists. This core team will work between our management decision support team and then our CEFI project leads, and then we'll develop a wider communication network.

Then when that I think is most -- Is quite important is that this funding took a while to get released, but now it's here, but then there's kind of this critical deadline of congressional funding, to go back in front of Congress at the end of the FY 2026 fiscal year, and so we're really trying to get things moving as fast as possible. The funding's now been distributed. Most of our hires are in place, and now we're really getting things up and going, and then, ideally, this congressional funding or other means, this becomes a long-term climate research item. For how we're doing this in these

projects, that'll probably be topics for longer conversations, and I would like to come in-person and discuss this further and receive your input. I'll stop here.

MS. HOWINGTON: All right. Thank you very much, Holden and Lara. Lara has her hand raised.

MS. KLIBANSKY: I just wanted to let the AP know that I am working with council staff, and we are going to be developing a webpage that will house the IRA project information, and it will also link to CEFI and some of the other climate activities that are going on, regionally and nationally, that the South Atlantic is involved in or may have interest in monitoring, and so that will be coming soon.

MS. HOWINGTON: That web page is what Chip was talking about yesterday with the outreach and communications strategy. We're going to be forwarding that to you guys as soon as it's live on the South Atlantic Council website.

MR. HARRIS: Definitely, and I put my email into the chat here too, if anyone would like to get in touch. It's holden.harris@noaa.gov.

MS. HOWINGTON: All right. Thank you, Holden.

MR. HARRIS: Thank you.

MS. CROWE: Does anyone have any questions for Lara or Holden, before we move on to the next topic? Laurent.

DR. CHERUBIN: Hi, Holden. This is Laurent Cherubin. I have a quick question about the modeling aspect that you've described. Are you guys talking about ocean modeling that you will run yourself, or are you relying on other universities or groups to do that, or are you talking about the biophysical modeling? Which aspect of the modeling specifically are you referring to?

MR. HARRIS: What was the name again?

DR. CHERUBIN: Laurent Cherubin.

MR. HARRIS: Some of the modeling will be done in-house, and some of the modeling will be through collaboration. Ideally, a lot of it would be NOAA's investment. It's trying to bring this ecosystem modeling and the modeling in-house, and so the ocean modeling is being done by GFDL and AOML. That's taking the MOM 6 global ocean model and developing these downscaled, high-resolution regional ocean models.

The Northwest Atlantic 12 model is the hindcasts, and I believe the near-term forecasts are being done by NOAA, AOML, the Atlantic Ocean Meteorological Lab, in Miami. Then the long-term projections are being done by GFDL. Then, the information hub infrastructure, that will be done within NOAA.

Most of the ecosystem modeling, or a lot of the different ecosystem modeling projects, some of that will be done within NOAA. Some of that will be done with collaborators, academic, for instance. For example, we're working with Chip, and Lauren Gentry, and the group that's working

on the South Atlantic reef fish model, to be a potential downstream application, or collaboration. Does that answer your question?

DR. CHERUBIN: Yes. Thank you. I understand now.

MR. HARRIS: Hopefully, at the next meeting, we'll be able to dig into the details of the modeling a little more.

MS. HOWINGTON: Yes, and I've added you guys to the workplan that we're going to review after this, and so we have space for you. We're good to go. Any other questions or comments? Okay.

MS. CROWE: Okay. We're going to continue on with our agenda then, and, as we decided earlier, the next thing is Kathleen is going to review the workplan. Take it away.

MS. HOWINGTON: One second, guys. Let me pull it up. Okay, and so, like I said this morning, after we had the discussion yesterday about moving to a summer and winter pattern, instead of a fall and spring, I did adjust the workplan, which I recognize is going to be difficult to see right now, and so hold one second, and let me -- Can we take a five-minute break, so I can email this to everyone, so we can all have it on our screens and look at it?

MS. CROWE: Yes.

MS. HOWINGTON: Five-minute break everyone.

(Whereupon, a recess was taken.)

MS. HOWINGTON: All right, guys, and so you should have all received an email with the updated Excel sheet that, again, I did this morning, based on yesterday's conversations. This will be updated in the briefing book, and will be put online, but I wanted to finish the conversation, and make sure that we didn't need any more edits, before we move forward.

So, if you look at this sheet, which is labeled “2024 to 2029 Workplan”, this is what was sent out in the briefing book, and so this is the workplan that was finalized during the last council meeting. You can see we still have tools and partner evaluation, this work ongoing. Well, we’ve finished that now, and so those are the little things that I have updated.

I've also removed fall 2024, because that's the meeting we're in, and so I got rid of that one, and I got rid of, say, the Army Corps of Engineers Project for Reefs. I'm assuming Spanik doesn't want to give that talk two days in a row, and so that's the kind of updates that I did for all of us. So then if, you go to Sheet 1, this is what our new workplan looks like now, and so if everyone will excuse me while I zoom-in a little bit. Okay.

So we have the blueprint specifics. Everything that we completed this meeting has been removed, and so we still have the website transition, because that includes the EFH mapper. We're still working on that, but, again, by the next meeting, we're going to have a live mapper that is in our control, and I'm hoping by the end of the year we can get it done.

Then we have communication strategy development. Well, we started that this meeting. That's going to be something that we're just going to discuss ongoing. Is there something we want to communicate, and is there something we need to develop, and so outreach, communication, trying to, you know, improve our website, and what can we do, and that's going to be a constant, every single meeting.

Then we have implement the 2024 EFH recommendations. Well, right now, the only recommendation that we have not finished already implementing is the food web working group recommendation, which is going to be something that we try to complete for the next five-year review, and so that is just an ongoing project for the next five years, but it needs to be completed by December 2030.

I also still have the space program impact on habitat in here. I still need the FOIA information. We submitted a FOIA last December 2023. I have about four phone numbers of people that I annoy on a pretty constant basis. When I get really busy, they like don't give a phone call, but it's roughly every-other week, if not every week, and I'm calling them and getting their voicemails or -- You know. So, if anyone has anyone in the Coast Guard that they feel like they could hit up and help us try and move this FOIA along, I would appreciate that.

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

MS. HOWINGTON: So, to be able to get this information, we have submitted the FOIA to the Coast Guard legal office, because they are going to be having a lot -- They're going to have the information on space launches and how many there have been. That was where we were told to send it.

MS. CROWE: Do we have like a timeframe on the FOIA?

MS. HOWINGTON: Technically, a FOIA is supposed to be responded to within two months, but they did respond and say that the FOIA request was too generalized. We responded back with something more specific. We have not received a response after that, but, anyway, so that's the update there, and so that's just going to continually be on our meeting plan, until I get that information.

Then, of course, we have revised the flow policy. Again, according to yesterday's plan, we have a working group. We will get that to get started. We should, since we are no longer meeting in the spring, and we're meeting in the summer, have enough time to be able to at least get that flow policy up-to-date, where we feel like we can bring it to the AP, and so hopefully we can finish it next meeting.

Then we have the beneficial use projects and EFH consult resources, and so that has now been added to the workplan as something we can discuss. I will be sending out reminders to everyone of, hey, do you all know of a, you know, a good location for people, or a good resource for Jordy of this marshland is better, versus this, and we're going to try and compile those ahead of time, and so we have that plan.

Then Chip Collier requested to give a report on the spawning SMZ working group, and so we have him on the list, and then major habitat impacts as project offshore energy development, and so this

is something that we have every other meeting as something we need to discuss. Are there any major habitat impact projects, or offshore energy development, that you guys want to foresee a presentation on, that you think I need to reach out and communicate with somebody, and so that is going to happen, again, every other meeting. Well, this is one of those meetings. Do you all have anything that you all want me to reach out or start exploring, to see if we want to have a presentation on it? All right.

MR. THEPAUT: I think, you know, with the wind work, I think, right, keeping in mind the transmission cables. We do have projects that we've reviewed over the past couple of years, or, one, but more presumably forthcoming of the sea optic fiber cables.

MS. HOWINGTON: Okay. Good. So we'll add that to the list. I will follow-up with you and try and figure out what that presentation would look like and who would be able to --

MR. THEPAUT: I can help you out with that.

MS. HOWINGTON: All right. Thank you. So I'm going to put your name here. Thank you for volunteering.

MR. THEPAUT: Oh, I didn't volunteer. Okay.

MS. CROWE: Go ahead, Ben.

MR. THEPAUT: Then I'd be remiss if I didn't add some maybe fishery topics that we get regarding amendments to Magnuson-Stevenson Act, such as red snapper, as well as vessel speed limit rulings.

MS. HOWINGTON: So would you like a summary of these or like what are you saying? How does this apply to the Habitat AP?

MR. THEPAUT: Yes, and, one, bring it you all's attention. Two, Yeah. Two, maybe soliciting presentations on how that might affect fishery management policies and just a good old-fashioned conversation.

MS. CROWE: Scott, go ahead.

MR. KATHEY: So the idea here is to focus on major habitat impact projects, right? So I don't know how the speed rule would relate to habitat impact. I mean, resource impact, for sure, but not habitat, right? We want to stay kind of in the guardrails.

MS. HOWINGTON: Yes, and so that's kind of -- That's the reason why I was asking like how does that adhere to the Habitat AP? Both of the red snapper and speed limit rulings I feel like would be better for a different AP, and, if you just want to be informed of when those are coming up, I can try and keep you in the loop, but I don't think that that's something we should get a presentation here, per se. I'm getting -- He's nodding his head. He's not insulted. Sorry. Brendan has his hand up.

DR. RUNDE: Is that tossing it to me?

MS. HOWINGTON: Yes.

DR. RUNDE: Great. Thanks. Just thinking more about offshore wind, by this time next summer, Dominion Energy will have constructed maybe a hundred or more foundations at the Coastal Virginia Offshore Wind Project. Recognizing that that's slightly outside the South Atlantic, but also recognizing that this panel has discussed that project a couple of times already, is that something that folks would like to have an update from Dominion on, as far as their initial observations of the habitat created by or surrounding those turbine foundations?

MS. CROWE: I'm seeing thumbs-up in the room, and so I think that's a yes.

DR. RUNDE: Okay. Kathleen, I'll email you a couple of people. Go ahead.

MS. HOWINGTON: Thank you, and so I also would think that that would be an appropriate thing for us, because of -- I don't know if anyone's heard about this, and I think it's been presented a few times, but there were some fish deaths near the CVOW development area, and so we can also ask for an update on what's going on with that. The last presentation I saw was pretty generic, and so, hopefully, in the next six months, they have a little bit more information. I think that, even though it's in Virginia, is very applicable to this. I'm getting an okay from our council chair. She just overruled all of us. We're getting this.

DR. RUNDE: I know we want to wrap up, but, if anyone cares, I can provide some information on the fish kills at CVOW. We've been involved in that a little bit, but just one other thing that's increasing the relevance yet more here is that Dominion recently purchased -- It hasn't officially gone through, but a portion of the Kitty Hawk project, and so they will be developing some of that, most likely, and that, of course, is in the South Atlantic, and so understanding the habitat changes that they're causing off of Virginia, and whatever their plans may be for scour protection and things of that sort, in their portion of the Kitty Hawk project is very relevant.

MS. HOWINGTON: All right, and you said you had information on those fish deaths. Can you give me something, really quick? I'm seeing some thumbs-up. Can you just give us a quick summary of what you heard last week?

DR. RUNDE: Yes, sure. We've been involved in this since it started, as far as Dominion, you know, hitting us up for our insights, such that they are. Piledriving of this project began in May. Between May and mid-August, and I'm shooting from the hip here, there were something like thirty observations of dead cyanids, namely spot and croaker, and mostly croaker. It was five figures, in terms of total numbers of fish, and so maybe like 12,000, or something like that, animals. I would have to look back at those slides. I don't have them in front of me.

Anyway, this was right next to active construction, and so between zero and 3,800 meters from active construction, and so zero is pretty close, and the timeline of when dead fish were observed, relative to the actual construction of the foundation, is a little puzzling, because all of them, or nearly all of them, were observed prior to the beginning of impact piledriving, which is the portion of the construction timeline that we're most worried about, in terms of its acute impacts on marine life, but when these animals were observed dead was after the bubble curtain, the noise mitigation method called bubble curtain, was turned on.

The current thinking is that these mortalities were caused by a combination of some sort of synergistic effect of perhaps the hypersaturation of seawater, caused by basically fizzing a bunch of air into the seafloor depth, where it pressurized into solution, and so think about these fish are demersal. They're swimming around down there, and now you hypersaturate the water, and so you're creating basically soda. That's not ideal, and that gas is going to come out of solution in their bloodstream, and so a combination of that and then the upward current that is caused by the bubble curtain, and so forcing them up to the surface.

Now you have two different types of barotrauma that are impacting these animals, and Bob's your uncle, and a bunch of them wind up dead on the surface, and so there were two rounds of necropsy, one by VIMS and one by North Carolina State University. I'm not sure to what degree those reports are actually public, but, if anybody wants to email me, I can probably provide those. If you're interested in more information, you can definitely reach out to Dominion, and their fisheries liaison, Ron Larson, and so I hope that was short enough, Kathleen.

MS. CROWE: Thank you, Brendan. We have a comment, or question from Alex.

DR. SCHNEIDER: Hi. Alex Schneider, and I was just going to follow up from what Brendan said about the incidences of fish at CVOW. BOEM and NOAA did talk about the fish deaths at the Mid-Atlantic Fisheries Management Council meeting, back at the beginning of the month, and then we also gave a more thorough presentation, including all the data we have on the number of fish and the construction steps, at the ASMFC meeting last week, during the Policy Board and that presentation, and all the details involved in it, are available on the ASMFC's meeting website, under that Policy Board, and so those slides are online for more information.

MS. CROWE: Any other questions for Brendan?

MS. HOWINGTON: Before we get back to the work plan.

MS. CROWE: Okay. If not, we're going to go back to the workplan. Kathleen.

MS. HOWINGTON: David Whittaker is thinking about it. We can -- Think about your question, and we can come back. You've got time. Okay, and so then, again, I have made the request for major habitat impact. I'll do that again in the summer, which is this column. We also have, on the to-do list the CEFI and IRA projects overview, and so that's going to be Lara and Holden. That's technically two projects. I might split them up. What do you guys think? I'm seeing yes, and so we'll do an IRA overview and a CEFI overview, and we'll have those be separate.

Then, of course, something that we do every single meeting, the workplan update. The annual report is the one thing that we're going to have a little kink in this year, because we're moving the meeting, and so we're probably going to do that via email. We've seen the report, and we've worked through it, of what is appropriate in the report, and so I'll send out an old version of the report, and then a newer version, with anything that can be updated from the old report of this has happened, and I can just find it online, and I'll try and update it for you guys.

Anything that can't be, I will probably -- I'll send out the report and say, hey, double-check your sections, and make certain that this is up-to-date, and that will probably be done via email, and we won't have to discuss it during this meeting. That's my goal, and so we'll remove that.

We're going to be receiving a citizen science update. We receive that every-other meeting. Then we have an EFH consultation update scheduled for -- Typically, we get that in the spring, and it's referring to the previous year. We just received that during this meeting. The next time we're going to meet is going to be in the summer. Do we want to just postpone that and then receive it for two years during the next winter meeting, because it will be -- We're receiving an EFH consultation presentation six months after the year ends. Jordy, do you want to present in the summer about EFH consultations for the year 2024, or do you want to wait until winter? Okay. Jordy is going to think about that.

Then, finally, the EFH five-year review. Since we're going over abundance and life stage information, I'm going to be emailing you guys, and bothering you about this, but we're going to be talking about it every single meeting from now until the five-year review ends, or until we finish our work, one of the two, and so that is on the to-do list. Then we just added in sea optic fiber cables and CVOW update. With those two, that gets us to -- Okay.

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

MS. HOWINGTON: Okay. Then, based on Jordy's feedback, they're going to be getting some -- This is for the online people, because you didn't have a mic. They will be getting an EFH assessment timeline on some windfarms that are going off, and then she has voted to present winter of 2026 on 2024 and 2025, which I think is perfectly acceptable, and so we've removed that, plus then hopefully we will remove the annual report, and so we're going to stay at fourteen subjects, which I think could definitely be done in two days based on the fact that this one had sixteen subjects. We did really well this time.

MS. CROWE: Because you said that, it will --

MS. HOWINGTON: Yes, we're going to go long. That's how that works. I think we're good for the summer meeting. I will get these two added in, once we figure out who's going to be presenting to our workgroup, and then I will present this working plan that you see on Sheet 1, that I have now updated, and that, again, will go on the website, and it will be sent out to you guys, at the March 2025 meeting for the council for the Habitat Committee.

With that in mind, I do want to highlight something, and this is not something we need to make a decision on now, but, when I was building this, since we switched to winter and summer, we basically, during winter, have eight subjects that we're constantly talking about, and, in the summer, we have four subjects that we're constantly talking about, and so I talked with Myra and Trish and Stacie, and this, again, is something we can discuss next winter, but do we need two meetings a year? That is something that we can discuss, if it's something you want to think about.

Previously, we had two meetings a year, spring and fall, pretty consistently, but a lot of the presentations that the AP was receiving were no-action items, and, with the blueprint, with our current movement, a lot of those no-action presentations are going to seminars, or we're not receiving them, because they're just informational, and so we are trying to make this Habitat AP

as efficient as possible. I'm trying to not make you guys travel to Charleston for funsies. If you're here, I want it to have a goal and an action item following it.

We had two no-action items presentations, the fishing effects database, which we ended up talking about, and Kevin Spanik, which I felt like was relevant for this group, but were not necessarily something we needed to follow-up on, and I'm hoping I'm picking those topics well, and not making the entire AP about that, but that's the reason why suddenly we can have this discussion of do we only want to meet once a year?

Keep in mind, if something huge pops up, we can always throw together a half-day webinar in the summer to make up for it, and so, if the council says, hey, we need an emergency Habitat AP input on this, I can send out an email, and submit an FRN within a day, saying we're having a four-hour webinar on this subject. Again, not a decision we have to have now. We've already made the decision to meet in summer. I'll be sending out the doodle poll, within the next -- I'll give myself a week, but probably in the next forty-eight hours.

Then we'll decide when we meet in winter, and, during that winter meeting, winter 2026, we can discuss if we need a summer 2026 meeting, or if we can just wait a year and have working groups meet that whole time. It's not like we're not going to be getting stuff done, but do we need the whole AP to meet, or can we just be getting working groups meeting and then have, in our winter meeting, working groups saying, hey, we're done with our work, and working groups saying, hey, we're getting started with ours, and so keep it in the back of your head. Is there anything else, after that very long-winded little monologue, that you guys want to add to the working plan?

MR. KENWORTHY: One more question. One, I want to see if we get a copy of Holden's PowerPoint slide that he did a few minutes ago. The second thing, when the working groups have their meetings, and do things, can you update the rest of the AP on that status, particularly only meeting once a year? For me, it's a lot of data to get in one period of time and soak it all in. I'm better soaking little projects in, and getting updates on that, and then I'll have a better feeling for it when we actually meet.

MS. HOWINGTON: So, if the AP decides to do one meeting a year, then, yes, I can send out -- I can make it where, in the summer, you guys get an email summary on this working group has met twice, and has done these few little bullet points, and has updated these sections. We can do that, but, again, we're not going to make that decision now, or even next summer. We're going to make it next winter, and so we have one year where we're meeting -- Next year, we're only meeting once, and so, if that works out, then, the following winter, we can start meeting once every year, but if, suddenly, then, the following winter, we're inundated with stuff, and meeting once a year is not enough, that's a pretty good red flag, and we should then meet twice.

MR. KENWORTHY: Not in addition to the workplan, but a comment on that too, that, if you and the rest of the organizers, feel that it's more efficient for us to just meet once a year, and cover all those action items, I think that's a great idea. I like those kind of review and discussion topics, and I understand your concern about having them in our in-person meetings, and whether that's the best use of time, and so, if we could decide to go to once a year, I would put forward a recommendation to then have some more virtual presence with -- You know, maybe it's like three designated dates, or two designated dates, a year that we can still get those review and discussion items, so that we're staying abreast of, you know, the current projects, the happenings, and we don't

lose sight of that, because I think that's also important for our awareness and understanding of the activities going on.

MS. HOWINGTON: Right, and I'm not -- I'm not completely getting rid of the review and discussion items. Like the sea optic fiber cables and the CVOW update, we're probably not going to have any action items from those. If you all suggest that it needs to come here, I put it on the to-do list, but then, if it suddenly becomes four, five, six no-action items, that's when -- I haven't had to step in yet, by the way, and you all are recommending -- Everything you all have recommended, I send to the council.

There's been one thing that the council said that I think you should prioritize the other talks, and decided to postpone that talk, only one time, and so I have never had to step in, and I think we're at a good point, where two or three no-action item talks is fine. It's, if you review some of the previous agendas, there were like five or six. It was entire days of no-action items, and that's what I'm trying to avoid.

MS. CROWE: Scott, go ahead.

MR. KATHEY: Yesterday, I mentioned this NOAA integrated ecosystem assessment for the Southeast that's been conducted in all the other ocean regions of the U.S., and I'm just curious if members of the panel would be interested in having a presentation from the National Centers for Coastal Ocean Science. It's a unit within NOAA that prepares these documents.

They take about two to five years. It's a very extensive, in-depth dive, trying to accumulate all of the known information about the ecosystem in a particular region, but it also looks at socioeconomic factors in that region, and it is, as the name implies, an integrated economic assessment, or integrated ecosystem assessment, and so would you be interested in having someone from NCCOS come give a presentation about that process?

MS. HOWINGTON: Would we be able to get an integrated ecosystem assessment, or should we request it, and then get a presentation from them two years from now?

MR. KATHEY: I'll leave that to the council, or to the panel.

MS. HOWINGTON: Because, if you say it takes two to three years, we could try to submit, through the council a formal request of the AP would like to see a presentation on this, and please create it. Trish is nodding. All right. Integrated ecosystem assessments on the long-term.

MR. KATHEY: I just didn't know if the panel wanted to get up to snuff. I know that, Trish, you were thinking about bringing that before the council, the full council, correct? Yes.

MS. CROWE: Okay. Kevin had his hand up.

MR. SPANIK: I agree a lot with Matt that it's important to stay abreast of those ongoing projects, so maybe a good compromise would be like in-person meeting, and action items, and then, the second meeting go virtual, and that's more of a update on things, and not as many action item kind of things.

MS. CROWE: Anyone else? Any comments, or suggestions? David.

MR. WEBB: For those of us that don't spend working time in these kinds of areas. like myself, it's very important for me to be exposed. The non-action items are critically important for me to be able to expand my understanding of what's happening and relate that back to the action items, and I know you're not suggesting that we don't do that, but I just wanted to let you know that's really important for some of the members of the AP.

It's important for me to interact with everybody at this table, because I don't interact with them, professionally, at any other time except here at the AP, and I would like, and I know this is the goal, my participation, and everybody's participation, to actually move us forward and accomplish things, and so there's a lot of nuances to the meetings, and I'm not arguing against just having one a year, but there's a lot of nuances to the meetings that I think really are additive to our ability to produce something.

MS. CROWE: Thanks, David. I think that's a good point. Anyone else? No.

MS. HOWINGTON: Again, this will be -- I'm going to clean it up, like I'm cleaning up my notes, and I'll make certain to update it. With that, I think the only other -- We have these two things, and excuse me, Stacie.

I do want to -- I'm going to get a little bit on a -- I'm about to give you all a lecture, and I'm going to do this as politely as possible, about the importance of in-person attendance and the importance of letting me know if you cannot attend. The reason why this is happening is because we schedule these meetings six months in advance. We're not scheduling a specific date during this meeting, but we will, in the next two weeks to have a doodle poll, and we'll have dates picked.

When that happens, I then submit a contract to the hotel and say this is how many rooms I need, and we sign that contract saying we will fill at least 80 percent of these rooms, or 90 percent of these rooms. If we do not meet that 90 percent, or 80 percent, attrition, the council is charged for those empty rooms, and so, when we are having discussion on in-person dates, and you guys say, yes, that week is fine, I'm putting you down as needing a room, and if you let me know, a week before the closing date of the hotel cutoff date, for reserving a room that you're going to be virtual, that doesn't mean that the council is not paying for your room.

It just means that you're not filling it, and so this is not saying that I don't understand that having a virtual option does allow for some flexibility. It is not saying that things don't happen. We had that on Monday, and I fully understood. What I am saying is that, if you know you are not going to make it in person to a date, let me know more than a few weeks in advance, pretty please. I, again, recognize life happens, but there were a few emails I got, really close to that hotel cutoff date, that it was like you were making the decision if you wanted to go in-person or not, is what it felt like to me.

That's not necessarily the case, but that's what it felt like, and it did cost the council not an insubstantial amount of money, and so, if you can make it in person, it is important to be here. Like David has been saying, our conversations are very important. We do get a lot of socialization here. It is very nice to have you all here. Please just let me know in advance if you're not going to be able to make it, and, when I say in advance, I mean way in advance. We're scheduling it six

months in advance. Please let me know before, somewhere earlier than a couple of weeks, if you're not going to be able to make it. Do you have anything to add?

MR. KATHEY: So, Kathleen, can you be -- Okay, and you kind of giving us an about. Can you give us kind of a deadline for that prior to, and is it prior to the cutoff for signing up for the block rooms, that you need in advance of that, or before the meeting?

MS. HOWINGTON: Prior to us signing the contract, which typically happens three months in advance, or four to five months in advance, and so, again, I recognize people are not necessarily going to be able to plan that, but, when you know you're not going to be able to make it, just let me know right then. Please don't postpone.

MR. KATHEY: So you need about four months in advance of the meeting date.

MS. HOWINGTON: Knowing if you're not going to be able to make it in-person.

MR. KATHEY: If you know you're not going to be there, or if you're planning on coming remotely, to let you know.

MS. HOWINGTON: Recognizing, again, I'm trying not to be cruel, and things happen, and you can't make it, and suddenly you have a broken leg, or you're sick or someone in your family passes away. I get that and I understand. This is something that is not just happening in this AP. It's happening in kind of all of our APs. Having a virtual option is giving people flexibility, but they don't understand that, if they do not communicate the choice to use the flexible option, then the council still gets charged money, and we're trying to avoid that, if possible.

MS. CROWE: Also recognizing that, up until now, this meeting has historically been end of October, end of April, and so everybody should have kind of known well in advance to block those weeks out, and so please pay very careful attention to the doodle poll that Kathleen is going to send out about summer and winter, knowing that you're now changing those weeks that you need to be available, and, if that's an issue, I think then we need to let her know as soon as possible.

MR. KATHEY: One other question, and so you also are asking this of federal agency folks, who are going to utilize the block room, but, even though we're paying for it out of pocket, it does count toward you meeting that quota, right?

MS. HOWINGTON: Yes.

MR. KATHEY: So, federal agency folks, we should be doing the same thing, even though our agencies are paying?

MS. HOWINGTON: Do it for your federal agency too, because they also have room blocks on attrition. I'm certain that everyone else -- After COVID, this kind of just became more of an issue, and so we're all having conversations about this, kind of behind the scenes, but I'm bringing it to the forefront, as uncomfortable as it is.

MS. CROWE: Okay, and so you're good with that?

MS. HOWINGTON: I'm good with that.

MS. CROWE: Okay, and so the last thing then, that I have on the agenda, is, like I mentioned at the beginning of the meeting, we always open up at the end of the meeting for public comment, and so, if there is anyone -- I don't think we have public in the room. If there's anyone online that has a public comment right now, and I do not see any hands, or anyone there.

MS. HOWINGTON: I'm double-checking the written public comment. As of 10:36 a.m. on 10/30/2024, there have been no written public comments submitted online. You can see that on the left-hand side of the screen.

MS. CROWE: Okay. With that, and, so, unless there is anything that anyone wants to say -- I don't see any hands up anywhere. Then we are going to go ahead and adjourn the Fall 2024 Habitat and Ecosystem Advisory Panel meeting, and please be on the lookout for Kathleen's doodle poll for the summer meeting. Thank you, everyone.

(Whereupon, the meeting adjourned on October 30, 2024.)

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Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
December 9, 2024

Mon 10/28

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Attendee Report: Habitat and Ecosystem AP

Report Generated:

10/31/2024 08:49 AM EDT

Webinar ID	Actual Start Date/Time
442-612-099	10/28/2024 12:13 PM EDT

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Attendee Report: Oct. 2024 Habitat and Ecosystem AP Meeting

Report Generated:

10/31/2024 08:50 AM EDT

Webinar ID	Actual Start Date/Time
442-612-099	10/29/2024 07:44 AM EDT

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Report Generated:

10/31/2024 08:52 AM EDT

Webinar ID	Actual Start Date/Time
442-612-099	10/30/2024 07:47 AM EDT

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