

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT AND ECOSYSTEM ADVISORY PANEL

**Crowne Plaza
North Charleston, South Carolina**

April 22-24, 2024

Transcript

Habitat and Ecosystem Advisory Panel

Stacie Crowe, Chair	Benjamin Thepaut
Paul Medders, Vice Chair	David Whitaker
Matthew Kenworthy	Dr. Matt Johnson
Steve Miller	Scott Kathey
Thomas Jones	Dr. Wilson Laney
Stephen Morrison	Rua Mordecai
Casey Knight	Kevin Spanik
Gregg Bodar	Jordan Wolfe
Brenda Runde	
Paula Keener	

Council Members

Trish Murphey, Vice Chair	Laurilee Thompson
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Dr. Chip Collier	Julia Byrd
Dr. Judd Curtis	Suzanna Thomas
Kathleen Howington	Nicholas Smillie
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Attendees and Invited Participants

Walter "Trip" Bolton
Charlie Deaton

Observers and Participants

Other observers and participants attached.

Management Council convened at the Crowne Plaza, North Charleston, South Carolina, on April 22, 2024, and was called to order by Chairman Stacie Crowe.

MS. CROWE: Good afternoon, everyone, and happy Earth Day, and welcome to the spring 2024 Habitat and Ecosystem Advisory Panel meeting. This is our first meeting with the council's new Habitat and Ecosystem Scientist, Kathleen, to lead us through our activities, and we also have a lot of new faces on the panel, and so I think we should start with a round of introductions. I will start. I'm Stacie Crowe, and I am going to be serving as chair for the meeting, and I'm with South Carolina DNR's Office of Environmental Programs here in Charleston, and I'll go ahead and pass it to Kathleen, and we can just go around.

MS. HOWINGTON: Hi. I'm Kathleen Howington. Like she said, I am the Habitat and Ecosystem Scientist for the South Atlantic Council. Just, again, there are a lot of new people here, and so, when you click on the microphone, when it's red, you're talking, and then, when it turns off red, you're not. Make certain that it is red, and make certain that, when you're ready to speak, and you can just bring it to your mouth, and think some of you all are sharing mics, and there might be one or two extra, if we need to. Let me know, and we can readjust the room, as needed. With that, I will pass it on.

MS. KNIGHT: I'm Casey Knight, and I'm with the North Carolina Division of Marine Fisheries.

MR. RUNDE: Brendan Runde, with the Nature Conservancy in Virginia, but representing North Carolina on this panel.

MR. JONES: Tom Jones, Georgia recreational fisherman.

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

MR. SPANIK: Kevin Spanik with South Carolina DNR.

MR. BOLTIN: Tripp Boltin, U.S. Fish and Wildlife Service.

DR. LANEY: Wilson Laney, North Carolina State University, Department of Applied Ecology, I think. Did I get that right?

DR. JOHNSON: Matthew Johnson, and I'm with the Southeast Fisheries Science Center's Habitat Ecology Branch, the branch chief.

MR. MILLER: I'm Steve Miller, and I'm with the St. Johns River Water Management District in Florida.

MR. WHITAKER: David Whitaker. I was with South Carolina DNR, and I'm retired now, and a former council member.

MR. DEATON: Charlie Deaton, North Carolina Division of Marine Fisheries.

MR. MEDDERS: Paul Medders, with the Georgia Department of Natural Resources, and I'm the vice chair.

MS. WOLFE: I'm Jordan Wolfe, and I'm with National Marine Fisheries Service Habitat Conservation Division.

MR. THEPAUT: Benjamin Thepaut, South Carolina Department of Health and Environmental Control, OCRM, coastal zone consistency, and I'm with the South Carolina State Coastal Zone Management Program.

MR. MORRISON: Stephen Morrison, and I'm an Assistant U.S. Attorney in the Southern District of Georgia, but I'm here as the son of a commercial fisherman in Georgia on the advisory panel.

MS. KEENER: Hi, everyone. I'm Paula Keener, formerly with South Carolina DNR, and I'm on the Marine Advisory Committee for that, and retired NOAA Office of Ocean Exploration and Research, and now I'm doing some consulting with Ocean Associates Incorporated out of Arlington, Virginia, managing NOAA contracts.

MR. KATHEY: I'm with NOAA's Office of National Marine Sanctuaries, and this is my first meeting.

MS. MURPHEY: I'm Trish Murphey, with North Carolina Division of Marine Fisheries, and I serve on the council as the council vice chair.

MR. KOLODNY: Daniel Kolodny, and I'm with the Indian River Lagoon National Estuary Program.

MS. SCHLENKER: Lela Schlenker, and I'm the fisheries liaison for Kitty Hawk Wind.

MS. BROUWER: I'm Myra Brouwer, and I'm the Deputy Director for Management for the council.

MS. THOMAS: I'm Suzanna Thomas, and I'm the staff accountant with the council.

MS. HOWINGTON: All right, and then, online, we have a couple of members. We have a former advisory panel member, Anne Deaton, and I appreciate you being on here, but we also have Greg, and I have unmuted you, if you want to introduce yourself.

MR. BODNAR: Greg Bodnar, with North Carolina Coastal Management. I'm sorry that I couldn't be there on my first meeting ever with you all. I, unfortunately, had a conflict with a commission meeting that's going on basically at the same time, and so I'm glad that I'm able to make it virtually.

MS. HOWINGTON: Then Rua.

MR. MORDECAI: Hi, everybody. I'm Rua Mordecai, U.S. Fish and Wildlife Service, supporting the Southeast Conservation Blueprint, and, again, sorry that I couldn't make it in-person. Another one of those unescapable conflicts for this one, but I should be able to see everyone next time.

MS. HOWINGTON: Then, before we move on to the full meeting, just for everyone to know, this is being run via webinar, and so, if the two screens we have in the front are not enough, you can always sign onto the webinar, and you'll be able to see everything that we're projecting right there. For the people who are on the webinar, please make certain to mute yourself on your end, if I have unmuted you.

If I have missed a panel member, please raise your hand. You can do so by going to the right-hand side of your screen, the GoToWebinar panel, and there's a button that looks like a curved line with four lines on top, like a child's hand turkey. Raise your hand, and I will call on you. I don't think I missed anyone, but you know. Then, if you are in the room, and you do sign onto the webinar, make certain that you pick the no audio option, because otherwise we're going to be getting echoes everywhere, and it just is painful. With that, Stacie.

MS. CROWE: Okay. It's great to see so many new faces, and we have a lot of good things to do in the next couple of days, but, to get us started, the first thing that we need to do is approve the agenda for this week's meeting, and we do that by consensus, just a reminder, and so we just need to give some indication that you approve the agenda. It was in your briefing book that was sent out by Kathleen. Does anyone have any questions on the agenda, or objections, or, if you approve the agenda, please let us know that by a head nod, a hand raise, something.

MS. HOWINGTON: Lots of heads nodding.

MS. CROWE: Okay. Looks good. All right. Then we also have to approve the advisory panel meeting minutes from the November 2023 meeting, and those were also in your briefing book. Are there any questions or objections? Do we want to move to approve that? Are we good?

AP MEMBER: I move that we approve the --

AP MEMBER: I will second. I wasn't there, but I will second it.

MS. CROWE: All right. With no objections, I think we're good with that, Kathleen, and two times throughout the meeting, at the beginning and at the end, we open up for public comment from any guests that we might have, and I don't think that we have any public guests in the room. Are there any guests online that wanted to make a public comment?

MS. HOWINGTON: As of thirty minutes ago, there was no public comment submitted online either, but there is an option, if you would like to go onto the website, and I will be checking that every morning.

MS. CROWE: Okay. Then we will also ask for public comments again before we close out the meeting this week.

MS. HOWINGTON: I am seeing no hands raised, nobody online, for public comments either.

MS. CROWE: Okay, and so, next up on the agenda, and we're going to keep moving, is we have Trish Murphey here, and she is the Habitat and Ecosystem Committee chair, and she is going to provide us with some remarks, and updates, from the last council meeting. Trish.

MS. MURPHEY: Hi, everybody. Again, happy Earth Day. It's kind of cool that we're -- You know, the first meeting of the day is Earth Day, and so happy Earth Day. I'm Trish Murphey, and I am with the North Carolina Division of Marine Fisheries, and I represent North Carolina on the council, and I'm vice chair of the council, and I'm also chair of the Habitat Committee, and so, just on behalf of the council, and the council staff, you know, thank you very much for being on this committee and taking the time out to participate and, you know, helping us and giving us input as far as habitat and ecosystem issues.

I will go ahead and go over -- We had a Habitat and Ecosystem Committee meeting at the council meeting back in December, in Beaufort, and so I will just go over some of the highlights of that. Vice Chair Paul Medders gave a report on your November meeting, and one of the things that the council did find of interest was hearing more about the use of nature-inclusive design materials for offshore wind projects, and I think you guys will be discussing this on our windfarm discussion today, as well as with the decommissioning, and you'll be hearing from, I think, the Carolina Long Bay folks and Kitty Hawk, and so we have the whole crowd here for wind today.

Also, we had some very good discussion on your workplan, and I think this is a new thing that has been brought together with this AP, is a workplan, and, in reviewing the workplan, and the AP activities, the committee did suggest maybe holding off on a few things, such as the space activities, the living shoreline work, and the tide gates. I know this was discussed in the November meeting, but just the workload itself seems like an awful lot, and so I think we just asked to postpone that discussion until the fall meeting, you know, and so it's not coming off the plan or anything, but just, you know, it's a workload perspective.

We also got into some discussion on artificial reefs, and we got into that old producer versus aggregator thing, and so it was suggested that, in looking at EFH, and artificial reefs as one of those, that we can maybe start moving up the tiers. Right now, all the EFH is based off of Tier 1 stuff, which is just presence-absence, and Tier 2 will look at abundances, and so, you know, talking about that producer or aggregator, and, you know, we may be able to pull abundance in, as far as artificial reef stuff.

I mean, even some of the discussion was artificial reefs versus natural bottom, and they kind of serve -- You know, they do the same thing, and so, lastly, we did talk about coral management, and we did get a presentation on some modeling work on coral, that you can apply to management, and the SSC, which is our science and statistics committee, had reviewed this and found that it would be good for management and that it would be considered the best science information available, BSIA, and so we can use -- We can incorporate these models into maybe expanding our coral habitat areas of particular concern. It would -- Or even come up with new ones.

It would take an amendment, and it would probably take some time to work through it, but that's something that we did discuss, and then we also talked about Coral Amendment 10. As you know, that had been disapproved by the agency in 2022, and I believe Kathleen is probably going to go into more detail on that, and so I will just leave that to her, and that was really pretty much it. It was a short, maybe couple-hour, meeting, and so that's it. Any questions?

MS. CROWE: Wilson.

DR. LANEY: Thanks, Trish. Yes, I have one. This is relative to -- It's one that I should have sent you all an email about it, but I know there's an NMFS proposed rule on data confidentiality that has a comment due date coming up of April 25th, and I was wondering if the council had discussed that at all, and/or whether the council had any concerns with it, and, in the interest of full disclosure, I haven't read the whole thing, and so I don't really have a sense of whether what they're proposing is just an update of what has always been standard operating procedure, and, you know, maybe Myra can comment on it, or whether there are new things in there that would give the council concern, and the SSC concern, from the standpoint of increasing confidentiality, and making it more difficult to get needed data for conducting stock assessments, and so that's my question, and I apologize for not submitting it before now.

MS. MURPHEY: Well, I don't -- It's not on the council agenda for June, and I've seen some emails about it, and I don't know, and, Myra, correct me if I'm wrong, but I think it's really more about streamlining what they're already doing, and there may be a few other things in there, but, to be honest, I'm not real familiar with it, except I did see that it's coming out, and I don't know if Myra can add to it.

DR. LANEY: Okay. Thanks.

MS. CROWE: Okay. Thanks, Trish, and let's just keep on moving down our agenda, and so we're going to start today's discussions by circling back to our EFH five-year review, and so, for those of you that are new, the EFH five-year review is due this year, and, the last few meetings, we've been discussing, and working on, updating this document, and we were specifically focusing on three areas for review. The first one listed on your agenda was the limited FEP II subcommittee, and they were looking at prey and references, and Wilson Laney was leading the charge on this, and, Wilson, do you want to go ahead and give us your update on that now?

DR. LANEY: Yes, ma'am. Thank you. First of all, appreciation to Kathleen, and to Dr. Collier, and to Lauren Gentry, all of whom have had input into this discussion. Kathleen arranged a conference call for me and Kevin, and I honestly forgot that Laurent was supposed to be on our group as well, and so he wasn't involved in that, but Kevin and I and Kathleen discussed it.

I had a whole bunch of questions. The more I thought about a proposed update, relative to -- In a nutshell, for those of you who haven't been involved in it, our charge was to do a minimal update on -- We initially said Fishery Ecosystem Plan II, basically on the predator-prey portion of that document. The whole thing, and Kathleen can supplement the discussion and talk about the way-back machine and all that kind of stuff, and what the status of that document is, and why we're not going to try and update the whole thing, which is many, many hundreds of pages long, but, basically, this was a minimal effort to do an update on something that we thought was pretty important for the council, and for management purposes, which basically is, you know, given the age of that document, to update all the predator-prey aspects of it and diet aspects of it.

One of the things that occurred to me is that you've got to make some decisions about exactly how you define what constitutes an important prey item. You know, is it important because it constitutes prey for a whole bunch of council-managed species, because its habitat overlaps with what you've already defined as EFH for council-managed species, or is it important because it constitutes, you know, a primary portion of the volume of the diet of only a few species that are really, really important for council purposes, and so we had this discussion.

There was some back-and-forth between us, via email, and, by us, I mean Lauren Gentry, who is -- For those of you that don't know Lauren, she works for the Florida Fish and Wildlife Conservation Commission and is the -- I call her the diet queen, and she's the one that created the diet matrix, the diet database, that's part of the South Atlantic Fishery Management Council's Ecopath with Ecosim matrix.

I'm not going to go into great detail, but Lauren came up with three potential ways, and I will just briefly mention those, that we could address this issue and do an update. The first would be to use a trophic indicator from the Ecopath with Ecosim modeling software to look for prey groups whose biomass have a higher-than-average impact on the biomass of their predator, and that's something that she's already built in, she and Luke McEachran have already built into the model. It helps take into account multilevel trophic cascades, but interpretation can sometimes be a little bit funny, since the food web is really a tangled knot, and, if you remember that food web diagram that we will talk about shortly, it is really a very complicated thing.

The next one would be just to make a ranked list of all of those metrics that I had mentioned to her, which is the percent of the diet by volume, the percent of the species whose diet includes that prey, the results from the EwE trophic indicators, and so forth and so on, and then look to see which prey items are important across all the lists, and then the last one would be to use the Ecopath with Ecosim software, that has a handful of other values that we can look at, like overall predation mortality on a prey, diet overlap between species, and a few other things that could help tease out any questionable predator-prey relationships.

I think it was following that conversation that Kathleen and Chip had a discussion about the fact that a logical sequence of events for us, as opposed to just trying to go into the FEP document and update any text sections that deal with predator-prey relationships, is there's another document, that, to be honest with you, I had forgotten about, and that was the 2016 policy document, which remind me, Kathleen, and I can't remember the title on that one. I pulled it down last night, and I should remember it. By any chance, are you able to actually pop it up on the screen? If we could do that.

What we decided to do was it would make sense for us, because Lauren is willing to assist us with this, to update that policy document first, and then, after we finish that, to take that and use it to -- That's the one, yes. Policy Considerations for South Atlantic Food Webs and Connectivity and Essential Fish Habitats. I, again, had totally forgotten that we actually did that one back in 2016, and so it's pretty dated as well, and so it will be a useful thing to update that one.

Then, once we have this one updated, then we can update the EFH guidance, and, with that, Madam Chairman, I am going to shut up right there and just ask if anybody has any questions. That's where we are, and Lauren has agreed to assist us with this, in terms of updating the extremely complex figure, which I think is in this document, and can you scroll down to that, Kathleen, so that they can see how --

MS. HOWINGTON: Pardon, everyone, while I scroll.

DR. LANEY: There you go. That's it, and you can see what I mean. It's like a spiderweb, which is what you would expect for the South Atlantic ecosystem, in terms of predator-prey relationships,

and you can -- Obviously, it's tiny print, and so it's hard to read on the screen, but you can pull the document up and take a look at it, and you can see that it is very comprehensive. If you remember, the EwE that the council's workgroup put together has like 140 groups in it, species groups, and so it is very comprehensive. It's very complicated, and I think it's wonderful that Lauren has indicated a willingness to help us update that, and so, once we get that done, then we'll go take a look at the EFH guidance document, and I will now really shut up.

MS. CROWE: Thank you, Wilson. Does anyone have any comments on what you just heard from Wilson? Go ahead, Wilson.

DR. LANEY: I lied, and so there were a couple of other things we're doing. Kevin is touching base with those groups that we know are continuing to do real hands-on dietary work, and he may want to say a word or two about that. You know, South Carolina DNR does all the SEAMAP diet work, and then there's a group in Chesapeake Bay that some of us worked with in the past, the Chesapeake Bay Trophic Interactions Laboratory Project, which has ended, but we still were going to touch base with them, and then I am also searching through the literature, for the last decade or so, to see what new information there might be, and I'm sure that Lauren will probably be able to flag recent literature for us as well, and so I think that's it. Kevin, can you think of anything that I left out?

MR. SPANIK: We're making contacts with the Virginia Institute of Marine Science. We don't have a whole lot of overlap with the predators that we study, but we're seeing some potential boundary shifts, with species like black sea bass, and kind of the main thing that we were discussing with this is we're trying to really lay a bit of groundwork for conservation in the future, because prey, as essential fish habitat, is kind of a new designation, and so we need to do the work now to identify what prey may need to be conserved as essential fish habitat in the future, and it's kind of difficult, because there's not a whole lot of precedence for that, and so I'm kind of going back through a lot of literature, to see, in those instances where they actually have considered prey, in the bullet mackerel and frigate mackerel for dolphin and wahoo -- Those were very specific targeting predators, and a lot of ours that we deal with over here are kind of more generalist, and so it's troublesome. We're going through all the literature that we can find to get some sort of base threshold kind of levels for what's really considered important.

MS. HOWINGTON: For the notes, can you repeat -- You said "Institute of Marine Science", but I missed the first word.

MR. SPANIK: Virginia Institute of Marine Science.

DR. LANEY: Kathleen, it was, and I guess it still -- It was headed by Dr. Rob Latour at VIMS.

MS. CROWE: Great. Thanks, Wilson and Kevin. I think it's great that you all are going down that path, looking at prey that needs to be conserved, and not just managed species and such, and I think that will be really helpful with permit review and such. Does anyone else have any comments or questions about that? Go ahead, Myra.

MS. BROUWER: Thank you. Thanks for that update, Wilson. Just so I'm understanding, is the same subgroup that's been you guys, you and Kevin -- Are you guys then going to take on the task of updating the policy, and is that going to be part of the workplan for this year?

DR. LANEY: I think the answer is yes, based on Kathleen's discussion with Dr. Collier, and we thought it was a good idea. We like it, because it just -- Chronologically, it's logical that we update the policy first and then take from the policy and plug it into the EFH guidance document. That made a whole lot of sense to us, because the policy is the more comprehensive document.

Then, Myra, one other question that I had, and I think that I put it in a -- It seems to me that I put it in an email somewhere, but I'm not sure that we ever finished discussing it online, and so I will defer to Kathleen and Kevin on that point, but one of the things that we were thinking about was, if something, as is the case for the South Atlantic Council, when the council made the bullet mackerels ecosystem species, and does that relate at all to designating them as, you know, EFH, as prey?

In that case, you know, that was a very specific, targeted listing, based on the very excellent work that Steve Poland did for his master's thesis, because wahoo and dolphin, wahoo in particular, feed on those two species for a very high percentage of their diet, and we didn't know whether there was a relationship between that and then that equating them as EFH, because they are such important prey for that one or -- For those one or two species, and how does that work?

I mean, do we -- To designate a prey species, is there a separate process that we would have to go through to get them listed as EFH, or the other question was, if a particular habitat has already been designated as EFH, and prey, let's say penaeid shrimp, just to pluck one out of the air, already -- Their habitat is already designated EFH, and so, obviously, they're part of that habitat, and does that just automatically make them receive an EFH designation? I haven't dug into it, and I didn't know the answers to those questions, and so I will throw those out there for you.

MS. BROUWER: Thanks, Wilson, and so, off the top of my head, not having dug into it myself either, I believe there are separate processes. When you are going to designate a species as an ecosystem component species, there are several criteria that need to be met, and, basically, you have to prove, or justify, why that species is not in need of conservation and management under Magnuson, right, and so, if all the criteria are met, and I believe there's like eleven of them, then that species can remain within the management unit, but it is exempt from things like annual catch limits and things like that, but it's acknowledged as an important component of the ecosystem. That is different, I believe, than, you know, designating a species as EFH because they are important prey for another managed species, and so I think they're separate processes. There is different criteria that need to be met.

DR. LANEY: A follow-up, Madam Chair, and so the other question that then pops into my head too is that the council has, in effect, already designated some species, like sargassum, as EFH, and it's also prey for, what, sea turtles, I guess, whatever eats sargassum, and there are different things that eat sargassum, but I think what -- I guess, and, again, I'm thinking off the top of my head here, but I'm not thinking that we would certainly approach designation of individual species as EFH, but I could be wrong about that.

Maybe, you know, if an individual species showed up in a council managed species diet, at such a high biomass, or a high proportion of the diet, then we would probably tilt toward making them an ecosystem component, like we did for the bullet and frigate mackerels, but I'm thinking, and, again, I'm subject to adaptive management with this whole task, is that we would probably just

come up with a list and say, okay, for the EFH habitats that the council has already designated, maybe here's a matrix of the important prey species, and, going back to my earlier conversation, we have to define what we mean by important, but probably come up with some kind of a matrix table that says, okay, for Habitat X, here is the group of prey species that we think should be considered as part of EFH, and does that sound like at least a working approach for the time being?

MS. BROUWER: Yes, it does to me, and the other thing I would say is I can't think, right now, of any other councils that have already -- You know, I would look to what other councils have done, if there are, perhaps in other regions, specific species that have been designated as EFH, and I would kind of start there, and probably just sort of see how it's been done elsewhere, if it has.

MR. SPANIK: In some other regions, like in the Mid-Atlantic, species like menhaden have been designated as EFH, but that's a prey species that is abundant enough to actually have a stock assessment, and so I don't know if we start saying -- Maybe tomtate is a really important species for a lot of predators here, and SEDAR 100 is going to be the tomtate assessment, and I don't know.

MS. HOWINGTON: Lots of hands up, and so let's --

MS. CROWE: Hold on one second. Paula, I think you had your hand up early on, if you want to go ahead first.

MS. KEENER: Thank you. Where do you stop with this? I mean, suppose the bullet mackerel - - That a large component of their diet is Species X, and, you know, where do you -- In consideration of EBM, where do you stop?

DR. LANEY: That's where we started getting into the weeds on the email communication back and forth on this, and so I think the answer, Paula, is, as we consider how to revise the policy document, we will have some fairly substantive discussions, I think, with Lauren, and anybody else who wants to be engaged, and looking at Brendan maybe, but we have to decide, you know, what should constitute a prey, and that gets back to how you define what's important, and so it's not going to be everything, but it might be more than a few, and Kevin gave a good example with tomtate. You know, tomtate is an important prey species for a lot of different council-managed species, and so that might be a good candidate.

Certainly there's a lot of things that eat penaeid shrimp, in addition to the fact that they're a council-managed species anyway, and the council has already designated their habitat as EFH, and so things like that are going to enter into the dialogue, I think, and I think we can't go too far down the road until we have some more substantive discussions, and what I would envision, Kathleen, and tell me if I'm way out of the ballpark on this one, is that we -- At some point, we need to write something up and provide it back to the AP, and/or the council, and say, okay, here's how our thinking has evolved on this, and this is what we're currently thinking is the path we should walk, and see if everybody else in the council thinks that's the best way to go, you know, but, again, I'm leaning heavily here on Lauren's expertise, because she's the expert on all this stuff.

I think, as I said in one of my emails, I'm just a worker bee on this thing. You know, I know how to search literature, but, as far as all this other stuff, the modeling goes, or the EwE, and all the

considerations that go into designating a prey species as part of EFH, this is new. It's new for me, and it's new for most of us, I think, and so it's going to be fun. I think it will be a fun thing.

MS. HOWINGTON: All right, and so, to respond to Myra's concern, because I know where you're going with this, of updating a policy and being on the working plan, technically, this was already on the working plan, because the initial plan for the workgroup was to update FEP II. To give everyone a little history, Roger Pugliese had this idea, for FEP II, to make six or seven living pages that were going to constantly be updated with information.

Due to COVID, and Roger retiring, and just a plethora of issues with that, that ended up not working out, but one of the things that was developed in FEP II was the food web and connectivity policy, and so, instead of updating this 400, or 500, page document, we're now updating specifically what would be related to this, and so I think we are good. Normally, if we're going to update a policy, we have to get council permission, which is why I'm staring at Myra right now. Are we good, since we are no longer updating the FEP II policy, and we're just updating a portion of it that was created, the food web policy that was created in FEP II? She is saying yes, we're good to go. That is in response to that, and then I forgot the other thing that I was going to say, and so we'll go to Brendan, and then Jordan, and then David.

MR. RUNDE: Thanks. A couple of comments. One doesn't necessarily need a reply, but, for the small working group that's working on this, I'm just wondering if, in order to designate a prey species as EFH, is it, by necessity, an important prey species of a specialist? For example, Wilson, you mentioned that wahoo eat primarily alicia, and, therefore, alicia is an important prey species of a specialist, and so does it stand to reason then that no prey species will be defined as EFH because they're dolphinfish prey, because dolphinfish are massively generalists?

Like *Portunus sayi*, for example, is a small pelagic crab that dolphins happen to eat a lot of, and would that ever be designated as EFH, or no, because dolphins would probably get by just fine without them, or does it depend on whether there is a realistic likelihood of a threat to that prey species, from an exploitation standpoint, which one could argue there is with alicia, and probably isn't with a small pelagic crab, and a related comment, which is for Myra and others who are looking into how other councils may have handled things like this, is to look at an ongoing discussion at the Mid-Atlantic Council on an EFP that has been asked for for thread herring. I think it was Lund who asked for an EFP to explore whether there might be a viable fishery, and so there's ongoing discussions there about whether that's an ecosystem species. Thanks.

DR. LANEY: May I respond, Madam Chair? My thinking on that, Brendan, is that it goes back to, you know, how we want to define what's important enough to define something as a prey component of EFH, and so, in terms of specialist versus generalist, it could conceivably go either way, and it gets back to looking at habitats and looking at groups of species, maybe, that would be important to a number of different council-managed species, and I can think -- You know, look at dolphins, and king mackerel, and Spanish mackerel, maybe having --

Again, I don't know, and I haven't looked at the diagram recently, and so I'm not remembering all the diet overlap, but the other thing that I would think that we would maybe think about is all of those little pelagic crabs that you mentioned that are associated with sargassum would be potentially subject to harvest, and threat, if somebody decided they wanted to ratchet up sargassum harvest again.

Now, the council has pretty much proactively taken care of that, by, and, again, boy, my cobwebs are really hovering over that part of my brain on this one, but it seems, to me, that, when the council produced that plan, we established a threshold, a harvest threshold, in it, and so, even if somebody decided they wanted to crank up sargassum harvest again, there's a limit to it, and so that might allay our concerns about the whole complex of prey species that use sargassum that we could argue, from a strictly structural point of view, that, hey, they're EFH too. They're part of the sargassum out there, and so they should be EFH, and so I think the answer is either way. You know, it all depends on further discussions and how we decided to proceed on that.

MS. CROWE: Jordan, go ahead.

MS. WOLFE: Thanks. The definition of "essential fish habitat" is the waters or substrate necessary to fish for spawning, breeding -- So designating fish as EFH would warrant a change in the definition of "essential fish habitat" within Section 310 of the Magnuson-Stevens Act, and so, from the Habitat Conservation Division's point of view, we've never considered fish as essential fish habitat. The loss of prey species can have an adverse effect on EFH designated within each of the FMPs, but fish themselves designated as EFH is not something that we've ever had an -- We have an opinion that you can't designate fish, prey fish, as EFH.

DR. LANEY: So are we just using the terminology wrong here then? Would we be restricted to designating prey, that we consider important, as ecosystem components? That's what we did with the bullet and frigate mackerel, and so I guess we could conceivably do that with other species as well, is just designate them as ecosystem components, since that's already included in the regulations.

MS. WOLFE: The identification of prey within each of the managed species, yes. Within each of their FMPs, and so you identify the prey species, but you're not identifying those prey as EFH.

DR. LANEY: Correct, but what I'm asking is, if we wanted to add a layer of protection to them - - In the case of the bullet and frigate mackerels, they didn't have a management plan, and so we added a layer of protection by designating them as ecosystem components, and, Myra, feel free to jump in here if I misstate anything, but so it seems, to me, that, if we wanted to do that with other species, we could also do that, as long as we met the criteria that Myra alluded to earlier.

MS. WOLFE: I think David Dale actually might have an addition to this line of questioning.

MS. CROWE: David, do you want to go ahead?

MR. DALE: Thanks for recognizing me. I'm not a member of this committee, but I appreciate you allowing me to speak. My name is David Dale, and I'm the Essential Fish Habitat Coordinator for the Southeast Region, and what Jordan was saying is correct. A lot of councils have been -- Have had this question put before them, and, you know, we have not designated prey as EFH, and there is an opinion that we have, out of the General Counsel Southeast Office here, on why -- On the way Magnuson was written, and the regulations, why it did not envision, or allow, such a designation of prey as EFH.

That has pretty much held. I mean, we're approaching our thirtieth, or our twenty-fifth year, at least, of EFH, and so it hasn't happened yet, and that's probably the reason why. The EFH regulations do have a requirement to identify important prey species for the managed species, and recognizing that the presence of adequate prey is a function of EFH, as Jordy mentioned, and, you know, habitat and substrate -- You know, waters and substrate for spawning, feeding, breeding, and growth to maturity, and it's that feeding function that that prey is associated with, and so it's not intended -- You know, we don't see an intention, by Magnuson, or our regulations, to designate prey as EFH, but we recognize its importance, and the EFH regs do require that to be included in the EFH information, and so I can answer any other questions, if there are any, but I just wanted to bring that up.

MS. CROWE: Does anyone have any questions for David? If not, Brendan, I think you were next.

MR. KATHEY: To the extent that a prey species may already be --

MR. DALE: If that question was towards me, I could barely hear it.

MS. HOWINGTON: Could you repeat that, Scott? Sorry.

MR. KATHEY: If a prey species is already managed by the council, presumably the council would have the opportunity to -- If that were identified as a critical species that needs added protection, presumably they could use the authority that they have in managing that species already to put in some management safeguards for it, and is that correct?

MR. DALE: Yes, that would be correct, and Wilson mentioned sargassum. You know, sargassum is kind of an outlier in fishery management circles, you know, and, if I recall correctly, the harvest limit on it is something on the order of either 5,000 pounds wet weight, or 50,000 pounds wet weight, and it's pretty small, but, you know, when you start talking about fishery species that are managed, or things that are EFH -- I've heard council members make the statement of, you know, harvest of EFH should be prohibited. Well, you've got to remember that oysters are EFH, and we're not going to shut down the oyster harvest around our coast.

You know, it's really easy to tack that EFH label on something, for the purpose of wanting to protect it, but you've got to kind of step back and look at it and how it fits into our seascape and our regulatory landscape, and so the -- You know, if a species has a fishery management plan, you know, the requirement is there that the federal government has determined that there is a need for conservation and management, and we go through the process of doing that, and so we can't -- You know, we can't have a fishery management plan for something that doesn't meet that need for conservation and management, and we can't throw ecosystem component species into a fishery management plan, or a fishery management unit, just because we want them to have that extra protection. You know, they have to meet the criteria.

MR. RUNDE: Thank you, Madam Chair, and so just -- It sort of dovetails very nicely with that, but a question and a suggestion. Has the South Atlantic Council considered developing an emerging fisheries policy? That's something that is ongoing at the Mid-Atlantic Council, and that would, I think, clear up a good bit of this, because, from this discussion, it seems that, whatever designation you're going to slap on an important prey, or ecosystem species, it seems like the will

of this group, or at least those who have been talking, is to protect important forage species from overexploitation, or the threat of overexploitation, and so, to the last comment, that I think David was making, if there's already an FMP, we don't have to do anything, but what if there isn't an FMP?

Well, that's where this emerging fisheries policy would come into play, and it would be a framework that the council could point to if there's the specter of exploitation lurking around the corner for species like Auxis, the bullet and frigate tunas, or sargassum, which there's already an FMP, and so that's a bad example, but anything else that happens to start to be exploited or when an exempted fishing permit is applied for a species like thread herring, or what have you, and that would be the road to go down there, and now I'm gotten a whole bunch of hands in response, which is great.

MS. KNIGHT: I don't have much to add, except for it's a slightly different road, but the North Carolina Division of Marine Fisheries is developing, you know, issue papers that go along with, you know, looking at, you know, unmanaged species and what to do when you see, you know, increases in those fisheries, and so similar, but slightly different, and so it's definitely something that I think it's nice to have guard wheels on.

MS. CROWE: Wilson, go ahead.

DR. LANEY: To Brendan's question, that's exactly -- Again, based on my fuzzy memory of it, since it's been a while, but that's exactly the rationale behind designating bullet and frigate as ecosystem components, was to try and proactively address the potential that a fishery for those important prey species might develop. That was the very -- As a matter of a fact, I think those are the only ones, aren't they, Myra? Aren't those the only two ecosystem species, ecosystem component species, that the South Atlantic Council has, are those two?

MS. CROWE: Anyone else have any comments or questions or anything to continue that discussion? Go ahead, Wilson.

DR. LANEY: I will just say, if anybody has any thoughts, based on the discussion that we've had, please send those to us for our consideration, and, obviously, this -- Gosh, it resonated a lot with the AP, and NMFS staff especially, and so, you know, we could use all the help we can get as we go through this process.

MS. CROWE: Go ahead, Brendan.

MR. RUNDE: Thanks, Madam Chair. One final comment that maybe will be a bow on it, but I think this is an especially important discussion in the face of the changing ecosystem and climate change, and this is directly related to the banner of climate-ready fisheries, and so something like an emerging fisheries policy goes right underneath that. Thank you.

MS. CROWE: That's a great comment, Brendan. Wilson, you started us off with a bang. Everybody is excited about that, and Kathleen and I were just sitting here discussing that, wow, where do we go now, and so I'm going to let Kathleen jump in.

MS. HOWINGTON: All right, and so I think, based on what I'm hearing from the panel, that you are comfortable with Wilson, and his working group, moving forward with updating the policy identifying prey, as defined by EFH, but not defining them as EFH or ecosystem component species just yet, and just updating the policy, updating those food maps and web maps and the references, getting it from 2016 to 2024. Are we all comfortable with that? Heads nodding or yes, please. Lots of heads nodding, and lots of thumbs-up. Love that. Then, at the next AP meeting, when Wilson comes with something written down, and no pressure, Wilson, then we can have a further conversation of what the next steps would be and how to integrate it into our EFH definitions.

AP MEMBER: I am curious about Brendan's proposal about the emerging fisheries, and so including that as -- Is that what they're essentially doing, or is that how to do that?

MS. HOWINGTON: So, for the AP to be able to create an entire new policy, we need to bring that to the council, and so then, outside of Wilson's working group, the other takeaway I'm having from this conversation is an emerging fisheries policy would be of interest to this advisory panel, and you think that it would be helpful for us to that.

MR. RUNDE: If I could jump in, and not to pass the buck, but I think that would be something that the council would want to create, and not this AP. I don't necessarily see an emerging fisheries policy as the jurisdiction, so to speak, of the Habitat and Ecosystem AP, but more of the council proper.

MS. HOWINGTON: Okay. Wilson.

DR. LANEY: So the only other comment I have, and a minor modification of what you said, Kathleen, was, from my understanding from what Jordan said, and what David said, was we can't designate prey as EFH, and that's off the table, because it's not part of the policy.

MS. HOWINGTON: Right.

DR. LANEY: But the path we do potentially have is, again, depending on how we define prey importance, is that we could follow the example of designating something as an ecosystem component, if it meets the existing criteria, as Myra mentioned, and so I think that's the only option we have, other than, as you rightly pointed out, just updating the matrix itself to incorporate any new information that has manifested itself since the FEP II was originally written, and since the 2016 policy was originally written, and so just a little bit of a tweak there.

As far as the emerging fishery thing goes, I agree with what Brendan said. I think that would be a council call, as to whether they wanted an emerging fishery policy or not, and I'm not aware, and, again, ignorance is no excuse, but I'm not aware that there is any threat of an emerging fishery out there right now, for any species that is prey for council-managed species, but I stand to be corrected on that point.

MS. BROUWER: I just want to make sure that everybody understands the process for designating species as ecosystem components, and so it has to go through an amendment, first of all, and so the AP would be able to recommend to the council that they initiate work to determine whether said species are in need of conservation and management, by going through those eleven criteria,

and so it's a lengthy process, and it's not something that an advisory panel can just say, hey, council, we think you should designate these things as EC species, because it just -- You have to go through the whole evaluation, and so -- And it would require that then the council initiate an amendment to an existing fishery management plan, and so that's how that works.

MR. KATHEY: Could I get clarification on something? When this five-year review is complete, does it simply characterize these issues of prey-predator relationships, or will there be recommendations to the council for specific management action, and will it spell out what those actions should be, or will it just say we need more protection of the species, and how is that going to play out at the end of the game?

MS. HOWINGTON: That actually goes into the next part of this discussion, and so are we comfortable with the two takeaways that we had there of the workgroup will continue to make work, and they'll bring something to us at the fall meeting identifying prey, and not as EFH, but just updating the food web connectivity policy, for now, and then we will discuss next steps further, and are we comfortable with that? Then the panel also recommends that the council develop an emerging fisheries policy, and I will flesh this out later, but to try and protect emerging prey forage fisheries that could potentially be over -- Help me. Give me a word.

AP MEMBER: Exploited.

MS. HOWINGTON: Exploited. There we go. Okay. Sound good? All right. So the next part of this is, like Stacie said, there have been two other working groups that have already made recommendations, and so the first one was the buttonwood clarification subcommittee and the tidal freshwater boundary subcommittee. They actually brought their recommendations to us last November, at the advisory panel, and the advisory panel approved them, and then we took that to the council, and the council also approved those changes, and so that's the -- Scott, that's the process, is, ultimately, the changes to the policy will go to the council as recommendations of this is what we think should be integrated in, and the council is ultimately the one that makes the final decisions.

Following the December council meeting, I then integrate those recommendations into the User Guide, and so we're going to have further conversations, at the end of this meeting, about this User Guide and how we use it and what it defines, but, right now, for the South Atlantic, this is our document that we use to define EFH for each FMP. This is where we, as an advisory panel, build our language that is then used for amendments. Whenever I go in, and I'm writing, I'm using this User Guide as my basis for EFH.

The two changes that were recommended were integrating buttonwood as a definition with mangroves. Mangroves are defined, in this document, as a tree or shrub, and this definition included coastal areas dominated by buttonwoods as they are a habitat with similar ecosystem services, and so that is what I talked with the working group lead, and Simen I believe was buttonwoods, and that was his recommendation of how we integrate it into the User Guide.

Then the second recommendation was integrating North Carolina's tidal boundary as an appendix in our User Guide, and so, for everyone online, I apologize for the scrolling. I will do it as fast as I can. All right, and so that table, the freshwater tidal boundaries, has now been integrated. It clarifies upstream tidal boundaries for EFH in the South Atlantic. The GPS coordinates are the

tidal boundary defined as the furthest point upstream where the river is affected by tidal fluctuations.

This was, again, the working group recommendation, and I passed it by the working group lead after the December council meeting, after it was already approved, to make certain that the formatting was good, and he has approved it, and so this is how we've integrated it in, and so that is how ultimately it gets integrated in, is, if there's an FMP, if there's amendment, I need to pull this, and I have it good to go, and it gets integrated into the legal system that way. Make sense? Does anyone have any comments on my edits?

MS. CROWE: Wilson.

DR. LANEY: So, relative to the buttonwood, it just occurs to me that -- So we are recommending adding that as EFH, but it's not prey. In that case, it's a structure. It's a structural habitat component that we're recommending to be added, and so that's just interesting, and so we can add -- I guess, to Jordan, or David, online, and so, as we learn more about habitat use, and we discover that our EFH definition perhaps left something out, as in this case, buttonwood, which is expanding its range northward, then we could recommend that those structural components be added, and then don't have to be -- I mean, they would then become included in the EFH designation, if the council and NMFS concurred that it was warranted to list those structural component, whatever they might be, and I don't know what they might be at this point in time, except that buttonwood is an obvious one.

MS. WOLFE: When you're saying "structural", do you mean substrate?

DR. LANEY: I think so. I think -- I'm trying to think. You know, water has structure too sometimes, Jordan, but I don't think that we -- I'm thinking about, you know, convergence fronts, and things like that, that are important for larval fish and foraging and things like that, but we didn't -- We haven't designated any of those ephemeral structural components as part of water column EFH, I don't think, and has any council done that? I don't think we've done that, and so, yes, primarily, it would be benthic habitats that I'm thinking about that would have some structural component that we discovered plays an important role in the life cycle of the South-Atlantic-managed species, or a prey species, maybe, either one.

MS. CROWE: I'm just going to chime in, Wilson, and, yes, it's structural, but we had a lot of discussion about the main similarity between the two was the similarity in ecosystem services that they both provided in those coastal areas, and so I think it went a little deeper than just structural, I guess is what I'm saying. Anyone else have any comments, or questions, or anything on any of that? Go ahead, Steve.

MR. MILLER: Just a small point of editing here. On the tidal boundaries, I have no problem with your tidal boundaries of the St. Johns River, except the river lies in Florida and not Georgia.

MS. HOWINGTON: I copied and pasted, and that wasn't me, but I will fix it.

MS. KNIGHT: I will claim that error, because that was the only upstream tidal boundary in Florida, and so it was a very easy drop-and-drag error. It looks like I misspelled "Alligator" somewhere too, or it looks like we need to add "River" to "Alligator", up there in North Carolina.

MS. CROWE: While Kathleen has that up, if everyone wants to just take a quick peek at it, and, if you see anything else that you can throw out right now, I'm sure she would appreciate it.

MS. KNIGHT: I was also going to add that I started looking at it, and I didn't even see these edits, but I think we could also probably get rid of that HOT ID, because that only makes sense if you have the GIS layer, and so we can probably just rid of that whole column, and it will give us a little more room to write out things like "river".

MR. RUNDE: Kathleen, the one that says "Alligator", I presume that that's the Alligator River, or maybe I'm just not up on my --

MS. KNIGHT: It is.

AP MEMBER: Does this panel have the authority to possibly cede the St. Johns River to the state of Georgia? Then you could leave it on there, and you wouldn't have to make the correction. You could just make a recommendation.

MS. KNIGHT: I'm kind of glad that I made that error, because I was really scared when I got to Florida, and I was like, I don't know anything about these, and then I was like, oh, there's only one that I have to deal with, and I can handle this.

MS. CROWE: All right. Anything else? Comments or questions or recommendations? All right. Wilson hasn't spoken up, and we're good to move on. Okay. Moving down the agenda, the next thing we're going to talk about is an update to the EFH policy statement on energy, which Paula was the lead on that group, and she has been working really hard on that, and she made a lot of significant changes, and so I think she's going to take over and walk us through that.

MS. KEENER: Thank you, Madam Chair. It's been a real team effort to update this policy, and I want to thank all of the members of the working group, and you'll see their names at the end of this presentation. The original policy, and, since we've got new members, I'm going to walk back just a little bit, and the original policy was dated December 14, 2015, and so old, and it didn't have any reference to wind energy in it, and so, in addition to two side-event meetings that were on the side of this AP meeting, Kathleen was gracious enough to set up two online meetings for the working group. We called for final comments the third week of March, and, basically, we discussed organization of the policy, how it was organized, and then, of course, updating the regs and the science.

I don't want to get into a lot of detail with this, but I will say that some of the major changes are in the introduction, and we changed -- The initial policy had an introduction section, and so we changed that to policy context, and we put it in the context of Magnuson. We developed a policy goal, and the next section is EFH at risk from energy exploration and development.

Then the two threats sections, and the first one is just addressing energy exploration, development, and operation, site decommission, and structure removal, which we're going to hear more about in this meeting, and then there's a small section that addresses wind, specific wind considerations, as threats. Then we did a lot of work on the best management practices section, separating them into categories, and I did update this slide, but I did not give it to Kathleen, and so the BMPs fell

into nine different categories of project siting and environmental regulatory review, which is administration reworded there; biological component; licensing and permitting; structural and construction considerations; cable location; navigation and safety; mitigation and compensation; monitoring and the advancement of science and exploration; and then BMPs for collaboration and stakeholder engagement. So there was a lot more organization to that particular section.

Then Kathleen was wonderful in pulling this information, or related information, out of the text of the document and putting it in an appendix, and that's Table 1 that addresses non-fishing threats, and then Table 2, which addresses the policies and the details for what the policy entails, which we think will be very useful there.

Our overall approach was to be forward-thinking and consider the uniqueness of our region, look at life cycle, entire project life cycle, considerations, update it with new EFH considerations, look at how to support the use of these platforms as exploration and R&D specific areas, look at academic collaborations, and collaborations with the extensive database that SEAMAP has, and look at stakeholder engagement considerations specific to the area. I think I speak on behalf of the working group when I say that I think we accomplished all of that, at least for the draft.

These are the working group members, and I would like to thank everyone there, and I also would like to give a big shoutout to Kathleen. She did some heavy lifting on this, and she was extremely helpful.

We did borrow heavily from the Northeast plan, policy, and the Mid-Atlantic policy. For example, our working group had not considered updating the policy with a navigation and safety section, and those other policies had it, and it makes sense, and so we put it in. I did not do wordsmithing of those policies, and so I'm hoping that -- They will let us build on looking at a larger regional approach with this. I would open it up to any other members for comment, working group members. Okay. Questions?

MR. HOWINGTON: Thank you. Just for clarification, I did contact the Northeast and the Mid-Atlantic and let them know, and they are perfectly okay with us borrowing from them, as long as we're okay with them borrowing from us, and so we're just going to be all sharing and have a unified regional policy on this, and we're going to be okay with that.

MS. CROWE: Does anyone have any comments on the updated policy, any things they would like to discuss? Did anyone read the policy?

MS. KEENER: So the next steps with this is it goes to the council for approval, review and approval? Okay, and, if there's comments, does it come back to this working group?

MS. HOWINGTON: Yes.

MS. KEENER: Okay, and so we may not be done.

MS. HOWINGTON: We're also about to get two talks about decommissioning and windfarms, and so we might not be done anyway, honestly.

MS. KEENER: Yes, I don't think we're done.

MS. HOWINGTON: But, for right now, I think we're good, and I do not foresee, based on what we have, the council saying this is unacceptable at all, and we did a huge, I think, update, and we definitely brought it into a little bit more modern times, and so I think this will meet what they wanted for us to do. They requested this of us, or we requested it of them? Someone asked if we can do this, and everyone agreed, and so I think we are meeting what the council has asked for us to do.

MR. MORRISON: I just had a question about -- I did actually read the policy.

MR. KEENER: Thank you.

MR. MORRISON: I don't know if that's because it's my first time, or I'm a lawyer by trade, and so all those problems upfront, but the stakeholder engagement -- I thought that was very important, and, obviously, it's part of what we're doing here, and it's stated at a very high level in the policy, and is that designed to be sort of the council will say this should happen, and then is it -- Who will then determine sort of at what level of specificity that happens, which community is commercial, which groups of commercial -- How those points of contacts are identified and actually engaged.

MS. HOWINGTON: Our policies, the way that they are used, is that we create these policies that are then referred to by HCD and by the states whenever they need guidance as to what -- For example, if there's a windfarm going off of your state, if there's an EFH consultation, and they then refer to this, and they would be the ones who would then utilize our guidance for whatever stakeholder interaction they would need, and so it would not be us that would be determining that. This is just meant for use and advice for other bodies, right, Jordan? So Jordan is one of the HCD -- They're one of the main EFH consultation people, and so they are one of the main users of our policies as well.

MR. MORRISON: I only ask that because I think it's wonderful to have the presentations that we're about to have from the companies that are considering putting up these windfarms and things like that. I know, from my experience in other bodies like this, that it's difficult to get folks whose maybe interests are more dispersed, and maybe not as concentrated, as those who are actually potentially putting up a windfarm, or investing in that, to come and provide comment and input, but my -- Even just sort of as I'm getting involved in this, hearing from some of the communities in the commercial and recreational fishing industry.

In Savannah, where I grew up and work, you know, they don't hear about a lot of these things, and I'm just sort of curious how that marketing happens. You know, oftentimes, it's not until there's a publication in the paper when they start to have ideas and thoughts about what should have been considered, as that project has already got a lot of inertia, and is underway, and so I'm curious, on the frontend -- Not the frontend, but, when we're thinking about engaging those communities, how that's happening, if we are making any recommendations to the council to do that in a more specific way or if that's just something that happens by the folks that use these policies once they've been implemented.

MS. BROUWER: Thanks for that question, and so what comes to mind as a potential avenue for, you know, more active engagement with stakeholders is the habitat blueprint, and so the council recently put together -- It's basically like a guidance document that is meant for us to use internally

for how the habitat program works, right, and that's where, you know, the council restructured this advisory panel, where they came up with, you know, requests like the annual report that you guys are going to be talking about here shortly.

In it as well is a request to develop -- I shouldn't say a request, but the intent to develop an outreach and communication strategy, I guess is what we're calling it, specifically for that, right, and so the council identified the need to have, you know, a way to connect with stakeholders and let them know about what the council is doing in terms of habitat mandates that they operate under, and so we're working on that.

We have received some input from the Outreach and Communications Advisory Panel, and I think it's on our to-do list for this year, to start fleshing that out, and so certainly it's something that, if you guys want to have it on your agenda, at some point, to give us more feedback, we can definitely do that, and so thank you for that.

MR. MORRISON: Thank you.

MS. HOWINGTON: I think I have it on the workplan to bring it to you guys in the spring. We will be doing something for habitat month in June. The outreach team for the council staff is going to be working with me on that. If you have any suggestions, go for it, and then, after that, we're going to start going a little bit further into how do we communicate habitat, how do we communicate progress on habitat projects, what are we doing, who are we bringing in, trying to increase stakeholder engagement, and so hopefully I can bring that to you in the spring. I have currently just been trying to get our websites more up-to-date. That was my goal, and I will review that on Wednesday, and then, after that, we can start working a little bit more on how do we get more people interested.

MR. MORRISON: Thank you, and that was by no means a criticism. It's more when they're saying, oh, what's going on, where do I point them.

MS. HOWINGTON: Jordan, did you want to comment?

MS. WOLFE: Yes, and so, on page 3 of this guidance, and correct me if I'm wrong, but I didn't notice that there was any type of reference toward the technical guidance that is provided by the Greater Atlantic Region, and you said that you pulled a lot of information. They provide an EFH assessment template that NMFS and BOEM worked on together, and that is -- That was developed for the Greater Atlantic Region, and I think that, for the South Atlantic purposes, we should be referencing that document, because there was an extensive effort between NMFS and BOEM to make sure that the developers for these windfarms were being inclusive within their EFH assessments.

Now, if we need to add to that, I think that could be like a supplemental thing specific to our region, but I feel like that document should be referenced, and, if you need it, I can also send it to you, and then, additionally, GARFO also provides recommendations for mapping essential fish habitat, specific for windfarms, and so, on page 3 of the technical document, where it says "siting, design, installation, operations", and it's Bullet 4, I think we should be referencing that document as well, because it is a pretty extensive guidance that GARFO went through with headquarters to provide

BOEM and the offshore developers on the acoustic and the different benthic mapping efforts that they should be doing.

MS. HOWINGTON: All right, and so the GARFO mapping document should be referenced in Bullet Point 4, and then you said the EFH assessment template -- Where would I reference that?

MS. WOLFE: On page -- Let me pull up the right document. It would be 5, and then probably -- In the threats, on page 7, where you have -- It's like best management practices, and you -- It states that the EFH assessment should address the development of contingency plans to be implemented, and I think language, or wording, regarding the EFH assessment, and then directing it back to the template that BOEM and NMFS developed for GARFO should be referenced in either both sections or at the very beginning of the document.

MS. HOWINGTON: Okay. All right. So either at the beginning of the document, or somewhere underneath, and you said best management practices, page 7, and, sorry, but I missed where exactly on page 7.

MS. WOLFE: (Ms. Wolfe's comment is not audible on the recording.)

MS. HOWINGTON: Thank you. Everyone ignore the fact that I just totally misspelled that. Thank you. Then page 3, bullet 5, and also put in the EFH assessment template, and then potentially adding it in the beginning, you said. Okay.

MS. CROWE: Okay, and so does anyone have any additional edits for this? Go ahead, Paula.

MS. KEENER: Thank you, Madam Chair. I will just share these back-of-the-envelope notes, to show that they really do exist.

MS. HOWINGTON: Thank you. Then, for me, for the record, with the integration of those two references, which I'm not going to be adding any wording, and I'm just going to be adding it in as a reference document, is the panel okay with me bringing this -- Well, prior to the decommissioning conversation, but, as it stands right now, is the panel comfortable with me bringing this forward to the council in June for approval, as our energy policy? I am seeing heads nodding. Okay. I'm seeing many heads nodding. Thank you. I wanted to at least get this portion, that we're good with this.

MS. CROWE: Okay. Wilson, go ahead.

DR. LANEY: Just a clarifying question, and so we're going to add those at the places that Jordan recommended, but do we have a lit citation? I haven't looked at the end of it, and so we should add them there as well? Okay.

MS. CROWE: Okay. Great. Thanks. Thank you, Paula, for leading that working group, and for everyone that helped her. It was a huge effort, and she did a lot of work, and I know, at the last meeting that I attended, she was very sick, and was still powering through this document, and so that was a really great effort, and we appreciate it. If no one has any further comments, we're going to go ahead and take a ten-minute break before we start on the wind talks, and so, if there are no other comments, we'll go ahead and break and meet back here at 2:40.

(Whereupon, a recess was taken.)

MS. CROWE: Okay, everyone. Next up, to continue talking about energy, we have a couple of presentations on windfarms, and our first presentation is by Lela, and she's going to be talking about long-term windfarm effects on habitat.

MS. SCHLENKER: Thank you to the AP for inviting us here today, and so my name is Lela Schlenker, and I'm the fisheries liaison for Kitty Hawk Wind, and so, as you will notice, there is several other authors on this presentation, and this is kind of a collaborative effort between Kitty Hawk Wind and the two Carolina Long Bay projects, and so this is an approach that we use frequently to kind of simplify information for the council and the AP groups, is do these collaborative presentations. We meet every couple of weeks, throughout the year, and so we have this sort of collaborative approach, even though we work for different companies and represent different projects, but, just so that you all know, this is something that we do frequently, is just kind of work together to try and present like a unified, simplified bit of information for different groups, including the council. I will turn it over to the rest of the authors, who are online, to introduce themselves, and so I will start with John Harker.

MR. HARKER: Good afternoon, everyone. I hope you can hear me okay, and I'm sorry that I'm not present. My name is John Harker, and I'm a lead for the fisheries outreach coordination for Avangrid. I do work across our whole portfolio, to include a New England wind project up here in the southeast part of New England, and then supporting, again, our fishery liaison, Lela Schlenker, with Kitty Hawk Wind. I wish I could be there, again, but you are in very good hands with this stellar group, and I'm going to pass it over to Nathan.

MR. CRAIG: Good afternoon, everyone. I'm Nathan Craig, and I'm with Duke Energy, and I'm an environmental permitting lead for the Cinergy Corp/Duke Energy Carolina Long Bay offshore wind lease. I'm sorry that I'm not able to make it for this meeting, and hopefully I'll be able to make future meetings in-person, but thank you for allowing us the opportunity to provide an update on the Carolina Long Bay project.

Also, you know, just to let the committee know that Duke and Total continues to work together on a lot of aspects with regard to development of the Carolina Long Bay project. Jen Banks is unable, the environmental permitting lead for Total Energies, and she's unavailable this afternoon, and so I'll be providing the Carolina Long Bay project update, and we do have both fisheries liaisons on for Duke Energy and Total Energies, and so I'm going to turn it over to Katherine McGlade to introduce herself and then Albie Solana.

MS. MCGLADE: Hi, everybody. This is Katherine McGlade, and I am the fisheries liaison for Duke Energy. I work with Nathan, and also with the Total Energies folks, where we've been collaborating on our initial permitting efforts on the Carolina Long Bay project, and I live in Hatteras, North Carolina.

MR. SOLANA: This is Albie Solana, and I'm the fisheries liaison for Total Energies. I also am a stakeholder in the offshore wind project, and I have an unlimited snapper grouper permit, a commercial vessel, that operates out of Wrightsville Beach and frequently works the areas around the proposed lease area, and that's it, and I will give it back to Lela.

MS. SCHLENKER: All right. Thanks, everyone. For the most part, Nathan and I will be doing this presentation today, and folks online can chime-in, if needed, or certainly during the Q&A, but I will get us started and just kind of do a quick overview. I'm going to talk, just very briefly, about offshore wind generally in North Carolina, and then I'll transition into kind of an update an overview on the Kitty Hawk Wind project specifically. I will then turn it over to Nathan, and he's going to do the update on Carolina Long bay, and then Nathan and I will sort of jointly present some information on decommissioning and thoughts on thinking ahead to the future, and then we should have plenty of time for questions at the end, where John and Katherine and Albie can chime-in and participate in that, as needed, as well, and, again, thanks to the AP group for inviting us here today.

Just, you know, extremely briefly, to kind of give us some context today, offshore wind is a growing need to meet federal and state renewable energy goals, and many of the advantages that we from offshore wind are that we have these really consistent windspeeds, much more consistent than over land, and it's also really nicely positioned. As you can see from this map, kind of these areas of high windspeeds just so happen to be close to high-density populations, which we all know that as well that populations along the coast are growing very rapidly, and so having this resource close to where the energy is needed is an additional advantage. In addition to just increasing populations, you know, needs coming from data centers, and even electric vehicles, are making the need to transition to renewable energy ever more important.

In North Carolina, just to give you a sense of sort of how this process has happened, BOEM has worked directly with the states to kind of establish areas that both have good windspeeds and bottom types suitable for offshore wind areas, and then they're required to sort of work with the states to kind of evaluate any ocean co-uses and minimize conflicts, and so, whether that is through fisheries, concerns of migrating bats or birds, or viewshed concerns, and, basically, they start out with what you see on the left of the screen, these big green areas, and then, gradually, as kind of environmental or viewshed concerns are sort of taken into account, or, you know, Department of Defense, et cetera, all these different co-users of the ocean, those areas get sort of winnowed down, and the idea being to sort of maximize the power harvested from the wind as well as minimizing any kind of conflict.

You can see went from basically what's on the left, with both the Kitty Hawk Wind and Carolina Long Bay projects, to what is on the right, and so these areas have gotten smaller than what was originally sort of sited. Kitty Hawk Wind was awarded to Avangrid in 2017, and then the Carolina Long Bay project was awarded to Duke and Total Energies in 2022.

Just very quickly, kind of an overview of this process. From that point where a lease is awarded to a developer, it typically takes about a decade before any construction is happening, and so this sort of figure at the bottom kind of shows what's going on in that intervening decade, and so the first thing that developers need to do is conduct surveys and studies to learn about their lease area, and so that includes, of course, surveying the wind resources, and understanding the currents and waves, as well as, you know, the biological resources, the species that are in that area, fishing that may or may not be occurring in the area, and any kind of other environmental concerns that might come from either marine mammals or birds or bats.

Starting with the site assessment plan, and then, finally, moving into what's called a construction and operations plan, basically that are submitted to BOEM for approval, and so I do want to note that, when developers win a lease, what they win is the right to submit a plan to BOEM. They don't win the absolute authority to develop the project, and it's the right to submit a plan, and so BOEM has the authority to sort of either approve, modify, or disapprove those plans, as they are submitted.

I will transition now into kind of an update on Kitty Hawk Wind, and where we're at in that process, and then, as I mentioned, I will switch back to Nathan, and he can talk about Carolina Long Bay, and we'll end with some thoughts on decommissioning.

The Kitty Hawk Wind lease area, as you can see on the map, is just about twenty-seven miles offshore of Corolla. It's about 122,000 acres, and this is a 3,500 megawatt potential project, which is about enough to power a million homes and businesses. This is an area where we have -- I live in the Outer Banks, and we have a lot of wind. It's a very windy place, and this is also -- This particular lease area is soft, sandy bottom, for the most part, and there is very little fishing activity in the area.

There is some, and that is something that we are, you know, of course taking into consideration, but, overall, we have about eight to nine meters per second windspeed. The depth is about thirty to fifty throughout, soft, sandy bottom, and we have it divided into two different project components, which is mostly just for the ease of permitting and sort of potential to bring the power to different places, but we have Kitty Hawk North is one-third, the north third of the lease, and Kitty Hawk South is about the bottom two-thirds, and so we are, in our COP, permitted to do up to 176 monopile foundations within this lease area.

This is more for your reference later, and there's a lot of detail on this slide, but, essentially, just to give you a sense of where we're at in the process, in 2024, we have a number of benchmarks we would like to reach this year, in terms of our permitting, and we anticipate that construction could start as early as 2027, and that's probably looking more like 2028, but somewhere in there is where we anticipate construction starting, with the potential for the first power in 2030, and that's for Kitty Hawk North, the Kitty Hawk North portion of the project.

Of course, considering fisheries experience and knowledge in the area is a big part of my role with the company, and it's a really important component of both understanding the resources that exist in this area and developing our fisheries monitoring plan, which I will talk about in just a moment, but how we started this process, back when the lease was acquired, was doing a lot of captain interviews and analysis of landings data, basically to understand the fishing activity within the lease, and so some of the ways we've used that information was the orientation of the turbines are actually designed to accommodate historical trawl tow patterns within the lease, and also make it so there's direct paths to the shelf, both from Oregon Inlet and Rudee Inlet.

The spacing of these turbines is about a nautical mile in each direction, and you can see the exact numbers up there on the screen, and so there's plenty of room for vessels to maneuver through the lease, to fish wherever, and there is no restrictions on any kind of activity, other than just not to touch or tie-up on the pilings themselves, and, as you can see, these are pictures from the two CVOW turbines that have been out in the water since late 2019, the two test turbines. Within two years, there's already a huge amount of fouling and community around these two turbines, and so,

you know, it's pretty well understood that these turbines will act as artificial reefs, and how -- The exact sort of species composition, or how effective they are as habitat, is something that we'll be looking at with our fisheries monitoring plan.

A little bit of detail about scour protection in the habitat around the turbine itself, and so the first component of determining the amount of what we call scour protection, which is basically just natural stone supporting and preventing erosion around the turbine foundation, is what size turbine, because that determines the radius of scour protection that is needed, and so, in our construction for Kitty Hawk Wind, our construction and operations plan, which is publicly available and online through BOEM's website, is we're permitted for an up to twenty-megawatt turbine.

We may not use a turbine that size, and it depends both on what's available when construction is approaching, as well as sort of modeling that sort of estimates what is the most efficient, and effective, turbine size, and so we're permitted up twenty megawatts, and so the most possible amount of scour protection we would have for each turbine base then would be a radius of 105 feet extending from the turbine foundation, and that is comprised of natural stone.

To give you some idea of how we engage with the fishing community currently, and how we might do so in the future, one of the main things that we do, in terms of our outreach component, is go to fishing tournaments, as well as community events, and basically just speak to the public about project, and the fishing community in particular, and so, last year, we were at five different fishing tournaments. We're in the process still of calculating what our schedule this summer is going to look like, but we will be at the Big Rock Tournament in June.

We have three fishing representatives that work with us, who are not sort of -- They're not required to say nice things about us, or to promote offshore wind, but we use them sort of just like a way to connect to the fishing community and as a resource for fishers to ask questions of, or, you know, to just find out more information about the project, and they've been an invaluable resource for us, and so we have Dewey Hemilright, Hank Beasley, and Daniel LeGrande that all support in that role.

In the future, ways that we may engage with the fishing community is through scout and contractors, using fishing vessels for surveying and safety work, as well as through our fisheries monitoring plan, using vessels and commercial fishers to do some of the scientific research we're planning, and we're also, of course, always looking for sort of joint developer initiatives, mostly with the Carolina Long Bay folks, but also with the CVOW project and Dominion Energy as well.

We do have our website, which is undergoing some construction at the moment, but I did put it up there, and that's where, in the past, when we've had survey vessels out, or scientific equipment, such as our buoys out in the lease, we've used the website and other ways to put up notices to mariners and that sort of thing.

Just a quick note on what research we've completed in the lease area already, and so I mentioned buoys a moment ago, and you can see the picture of that buoy, one of the buoys, that was deployed, at the bottom-left, and so we had two meteorological buoys out for a total of about two years, gathering lots and lots of information on windspeeds, currents, and wave information, and we've done our geophysical surveys, which is basically sonar mapping of the seafloor, and some sediment cores, to get a very fine-scale look at sediment type and composition.

The big thing that we do have coming up, and we're in the process of right now, to sort of determine what this monitoring plan will look like, is really building up our fisheries monitoring plan, and so we have elected to do that in a way that really centers iterative input from a variety of different stakeholders, and so we started this process, more or less, in terms of getting feedback with a workshop this December, in 2023, where we had about twelve different researchers, from five universities, as well as two commercial and recreational fishers, basically just brainstorming research questions, and ranking those, in terms of what are the most important and critical research questions from the scientific perspective.

We've started to get feedback on that from NOAA Fisheries, and we anticipate setting up some meetings very soon to get input from DMF and VMRC, and then, just a few weeks ago, we had our first sort of formal workshops with commercial and recreational fishermen, both one in Wanchese and one in Virginia Beach, and we got feedback from fishermen on sort of the species that they feel are most important, the fishing that does happen in the lease, and the gears that are most appropriate to sample those species, and so, again, this is all kind of planning our fisheries monitoring plan, which will have to be approved by BOEM, but we'll collect two years of preconstruction data, data throughout construction, and then post-construction, to get a sense of basically, you know, the big question of how does the construction and operation of this windfarm impact different species and ecosystems. All right. Nathan, I will turn it over to you for the Carolina Long Bay update.

MR. CRAIG: Thanks, Lela. Again, I'm Nathan Craig, with Duke Energy. I'm the environmental permitting lead for the Duke Energy/Cinergy Corp Carolina Long Bay offshore wind lease. Just to remind the group, Carolina Long Bay is comprised of two offshore wind leases. Cinergy Corp holds the lease 0546, where Total Energies hold the lease for 0545, and, as many of you know, Cinergy and Total is working very closely together on development activities, and we plan to continue to do so as long as it makes sense.

Here is kind of the major project milestones, and, you know, we'll talk about some of these activities as part of the update, but where we're at in the process is that we submitted the site assessment plan, and that site assessment plan is under review by BOEM, in the early stages, and, you know, we're in the early stages of reviewing comments that they've received this far, and so, as you can see, you know, we've still got several years out to submit a construction and operations plan, and, obviously, several years out for the operations and actually construction of the facility.

Just as a reminder, and I think some probably have already heard this, but, you know, we did our offshore activities last August, primarily to just survey the areas that we have proposed, or did propose, to deploy the meteorological buoys and environmental buoys. We did use a local contractor, Geodynamics, out of Morehead City, and then we had protected species observers, as well as an offshore fisheries liaison, you know, on the vessel as those survey activities were occurring.

This is pretty much the results of those survey activities, and so we surveyed basically three activities within the two lease areas, and we were able to get preliminary clearance of those three activities, and what I mean by preliminary clearance is that, you know, video transects that we're taking, the geophysical data collected, didn't show any type of habitat or other materials, archeological resources, that would prevent us from putting a buoy in those locations, and so those are the only three locations that we needed to survey, and those are the three locations where we're

planning on deploying meteorological buoys and environmental buoys, and so what we're thinking of, and what we propose, is a meteorological buoy within -- Kind of somewhat centrally located in Total's lease area, and a meteorological buoy centrally located within the Duke Energy lease area, and then an environmental buoy within -- More or less centrally located within Carolina Long Bay, to provide additional monitoring, primarily environmental wildlife monitoring, of a lease area also.

Here's what our proposed plan is, and so the primary purpose of, you know, the data collection campaign will be to collect meteorological data for the wind -- For the offshore wind lease area, with a focus on windspeed and direction and other constituents that would come into the design of the wind facility, but we also want to make sure we use this opportunity to collect environmental data, and so we will be, as required by our lease -- We will have a Motus station on both of the meteorological buoys within the prospective lease areas, and we're also looking at doing PAM monitoring for both the North Atlantic right whale and tooth whales, dolphins and porpoises, and deploying the fish tag acoustic receivers, as well as collect data on water quality.

The environmental buoy, you know, we're also proposing to put in a bird acoustic sensor there, as well as a bat ultrasonic sensor, in addition to a bird PAM system and the fish tag acoustic receivers there as well, and, in both of these areas, we'll be looking at the wave sensor, whether it be tied to the Lidar buoy or the environmental buoy, and that is kind of yet to be determined, but we'll have a wave sensor there as well.

Where we're at in the process, so, again, we submitted the joint site assessment plan in November. We did have our meeting with the North Carolina agencies, and that was required, via the federal consistency determination. BOEM is coordinating the reviews with the agencies, and they have completed the first round of reviews with NOAA Essential Fish Habitat and the Coast Guard and is currently conducting the review with the Department of Defense.

We, as the lease holder, are in the process of addressing that first round of comments. The pace at which we're addressing those comments, and, really, what we're doing is we're aligning our pace of activities with the North Carolina Utilities Commission's regulatory process for selecting offshore wind, and so the pace of how fast we're moving to address these comments, and complete the SAP, is kind of aligning with the North Carolina Utilities process, and so we probably won't really get completed with this process until the end of the year, or early next year.

Once we have a clearer picture of the schedule, kind of based on kind of that regulatory review process, that's when we'll engage with regards to these other permitting activities and review activities, you know, specifically as listed here, the Coast Guard, Nationwide Permit 5, as well coordination on the Motus system with Fish and Wildlife Service, and so that's kind of where you'll see, and you'll hear, you know, the pace of activities kind of aligning with that North Carolina Utilities review process that is currently in the works.

With that, I'm going to shift to kind of provide some discussion on the decommissioning process, and then I will turn it over to Lela, to kind of provide some additional insight on kind of what these structures can provide with regard to fish habitat.

As we're going through kind of development of our constructions and operations plan, and, for those not familiar with a construction and operations plan, that's kind of the design envelope to

what's going to be -- What's proposed to be installed and constructed on the lease area, as well as the transmission corridor coming onshore.

As part of that process, you know, we're required to provide a conceptual decommissioning plan that really, you know, provides broad coverage of, you know, how things are planned to be decommissioned, you know, how they're going to be -- The methods of removal, as well as any potential impacts and mitigation measures of that decommissioning process. Then, you know, as the process evolves, once a construction and operations plan is approved, we're required to go through a financial assurance review.

What this does is it sets up a fund to ensure that there are funds available, when the lease expires, to decommission any structures within the water. Now, you know, the decommissioning piece of this is, you know, once we get to the operation period, it's about a twenty-five to thirty-year operating period, and so what we do with the conceptual decommissioning plan, as well as the financial assurance, is we try to predict how we're going to decommission, but it's important to note that, you know, regulatory changes could affect the decommissioning process, and, also, you know, what actually gets approved, you know, thirty years down the road, could change, and so, once we do get to the point of lease expiration, there are several avenues that can be explored, and one of those is, you know, the facility could be repowered, and a request to renew the lease could be made, which will trigger an environmental review process by BOEM and BSEE.

You know, we could also propose any alternatives to the default decommissioning process, and that is, you know, to BOEM and BSEE's decommissioning process, to removing everything, you know, at a depth of fifteen feet below the mudline, and, you know, that alternative would go through a separate environmental review process as well, and one of those alternatives could be to convert to an artificial reef, and we would have to take any steps necessary to convert -- To make that conversion, especially, you know, looking at it from any navigation hazards, any impacts to threatened or endangered species, et cetera, and so that would be another process that BOEM and BSEE would lead, with regard to that NEPA review of what that decommissioning process would actually look like when we get closer to that kind of decommission or lease expiration deadline.

I think this is probably nothing new for anyone there, but, you know, obviously, there is a pretty good precedent of converting structures that are in the water to artificial reefs. You know, the oil industry has a pretty robust rigs to reef program, and, obviously, this would be something that we could look at, as developers, for wind turbines, and, obviously, there hasn't been too many wind turbines where their lease has expired and they're going through this decommissioning process, but this could be a program that could be structured around how we could actually decommission a wind-generating facility.

You can see how many have been converted, or how many oil platforms have been converted, to permanent artificial reefs in the Gulf of Mexico, and these are options that are available under the BSEE regulations, but it is something that, as a developer, we would have to request and demonstrate that this would be an effective decommissioning process, and you can see the different avenues with regard to tow-and-place, topple, or partial removal, and so all of those would be options that, as a developer, we would consider with regard to decommissioning, but it's just what that ultimate decommissioning looks like would be made much closer to when that lease would expire, and, with that, I think I will turn it back to Lela.

MS. SCHLENKER: Thanks, Nathan. This is, again, I'm sure information that you all are familiar with here, but just kind of thinking about what colonization of these monopile foundation structures looks like, and that's something that clearly will vary project-to-project, and, really, the fisheries monitoring plans are potentially an opportunity to look at that, at least for a few years post-construction.

This is a nice diagram that I believe I also saw on the BOEM presentation following us, and so we don't need to dwell on it, but, you know, essentially just these habitats quickly become three-dimensional, providing both food and microhabitats for all kinds of different organisms.

One thing that I think is an interesting component to consider, which, you know, The Nature Conservancy has recently detailed very nicely in a report, is thinking about nature-based designs, how that could have the potential to enhance habitat quality, and so I mentioned, earlier, that the default for the scour protection is natural stone, and there are other options as well, and so, you know, there may be the potential to kind of study these on a larger scale, to see what could be more effective than just stone, and whether that's worth the added potential cost, et cetera.

Two examples, again, from basically within the United States, and we really only have a couple of years of information from small-scale windfarms, and so the Block Island Windfarm, which is five turbines, and then the two CVOW turbines are the only projects that have been in operation for a couple of years at this point now, and so just a couple of photos of some charismatic vertebrate species. Black sea bass, which there's been a nice seven-year study now showing the Block Island Windfarm and showing that they have certainly increased around the turbines, and, interestingly, you know, we often think about structure-loving species as snapper grouper, black sea bass, et cetera, benefiting from the addition of structure.

In talking with some of the fishermen, a couple of weeks ago in Virginia Beach, they were also highlighting the pelagics that they catch off of the CVOW turbines, and so mahi-mahi, wahoo, albacore, et cetera, and so just a couple of nice, pretty fish pictures for you all.

Thinking about nature-based designs, as I mentioned, and so I do want to just share one example. Avangrid, the company that is doing the Kitty Hawk Wind project, has several projects up in New England, and so we are a 50-50 owner of Vineyard Wind, which, after the project is fully built, we will be 100 percent owner-operator of that project, and so Vineyard Wind currently has about five turbines that are sending power to the grid, and soon will have quite a few more, and so that project is one of the first larger-scale commercial projects to be operational in the United States, and they have recently used these eco-concrete, or EConcrete, mattresses, as cable protection, and so you can kind of see, if you look very closely, that each of those sort of tiers of concrete coming off the center sort of panel of these mattresses has sort of little structures all the way up, and so they sort of provide a lot more space and habitat opportunity for settling organisms.

These mattresses are basically used in areas where it's not possible to bury the cable, and so, if that's over hardbottom, this is one option, is using these type of mattresses, to make sure that those cables stay in place, and the idea is that folks can trawl over them successfully. This is one type of option. I've put, here on this slide, just a table that's directly copied from The Nature Conservancy report, but basically just some examples of different types of nature-enhanced designs that could potentially be incorporated into these projects, and, really, what would be nice is using a science-based approach, on a larger commercial scale, to really study the effectiveness

of these different approaches and see what species may or may not benefit from the different types of structures.

Basically, just to kind of summarize, very broadly, some of the information about decommissioning, you know, going back to the size of the turbine, that really determines how much scour protection is needed, and so, again, for Kitty Hawk Wind, we were permitted up to a twenty-megawatt turbine. We may not use a turbine that large. That will be determined basically closer to the start of construction, but that's -- You know, that's basically where the amount of scour protection comes from, is how big is the turbine, how big is the foundation, and, again, the default is to use natural stone, but there is, as I've just been mentioning, kind of the potential to look at other sort of nature-enhanced designs, either, you know, on a small scale, and look at different effects between turbines or, you know, potentially on a larger scale.

We know, from the examples that we do have in the United States, and, of course, we're going to see differences based on ecosystems and climates in different regions, but we know, from Block Island Windfarm and the CVOW towers, that artificial reef formation around these turbines happens very quickly, and it does, you know, with regard to certain species, enhance biomass, and there's potential to enhance biodiversity, and we've seen, at least with the CVOW towers, really opportunities for commercial and recreational fishers increase.

Again, our fisheries monitoring plans, which I outlined for Kitty Hawk Wind, how we're starting to sort of plan out what that monitoring plan will look like, and Carolina Long Bay is not quite yet at that stage for their project, but they've also been kind of included in our workshops and things, just to further stress our sort of collaborative approach to these things, but, you know, those monitoring plans really provide an opportunity to sort of scientifically look at how species, and assemblages, respond to these types of habitat in the water and this change from a soft-bottom habitat to a rocky substrate in particular areas. Nathan, I will turn it back to you for this last slide.

MR. CRAIG: Thanks, Lela. Just to recap kind of the decommissioning options, obviously, you know, there's an option that we can try to renew the lease and repower the wind energy facility. We can leave it in place as an artificial reef, and that could mean several different actions, whether it's topple-in-place or just, you know, cut it so far above the mudline, and, obviously, the default is to remove everything down to fifteen feet below the mudline, and then, you know, the decision on what option we would pursue would kind of be made towards the end of the lease term, and so you're talking about thirty years out from once operations start, and so approximately 2060, and, obviously, during that thirty-year period, there can be some changes in technology and regulations that we'll need to incorporate into that decommissioning decision as well and process.

Again, thank you, everyone, for allowing us to provide an update on Carolina Long Bay, and kind of as well as, you know, Kitty Hawk and the development process and to provide some insights on what we're thinking, or at least what we have to follow with regards to the decommissioning process. Here's all the contacts with Carolina Long Bay and Kitty Hawk, and I will turn it back over to Lela and/or John, if they have any closing remarks.

MS. SCHLENKER: Thanks, Nathan. I think, at this point, we would probably just open it up for questions, and I think -- Yes, we would be more than happy to take questions for as much time as we have. Thank you.

MS. CROWE: Okay. Thank you, Lela and Nathan and the rest of your team. I have one quick question, before we go around the floor. The TNC report on nature-based solutions, is it on the BOEM website?

MS. SCHLENKER: It is available online, and it's on The Nature Conservancy website, I believe.

MR. RUNDE: nature.org/turbinereefs is the fastest way to find it.

MS. CROWE: Thank you. I have no idea who had their hand up first, but I know you had you had yours up, and so I will start with you.

MR. RUNDE: Thank you, Madam Chair, and thanks, Lela and others online, for a great presentation. I'm really excited to see so much in that presentation about nature-inclusive designs, and you were very careful, and appropriately so, when you were talking about how they might be useful, or they could be useful, and those are really important words. I don't want, and The Nature Conservancy doesn't want, everyone to get really excited about, hey, we should put this type of scour material, protection material, versus this type of scour protection material, because there isn't much science on that that yet.

I think Seth, in the next presentation, is going to touch on a fairly small-scale study that's ongoing off of Virginia Beach, looking at five or six different potential materials, but I was especially energized, Lela, to hear you talk about what seemed to be maybe an appetite from Avangrid to perform what could be considered a large-scale experiment with the Kitty Hawk project. I mean, we're talking about this sort of ecological experiment that would be in textbooks thirty years from now, or fifty years from now, where let's say Kitty Hawk North is sixty turbine locations.

If you choose three or four different scour protection materials, and do a stratified random design, you could have something really, really interesting to monitor throughout the life of the project, and can you talk about whether that appetite might have just been a figment of my imagination, or is that real?

MS. SCHLENKER: Thanks for that question, Brendan. I think that was something that was brought up in our workshop with researchers, and, as you mentioned, I think, yes, it is important to think about what evidence we do have, and, as you mentioned, there's really not a lot right now, and so thinking about -- We know there is benefits, just from any kind of structure in the water, right, and so I do think it is important to look at that scientifically, and that's something we're going to consider for the monitoring plan. It was brought up by researchers when we met, and I know that there's a couple of people at UNC and NC State who would be quite interested in looking at that, and so that's certainly a potential, and, at this point, I can't commit to it, but it's something that we will definitely keep thinking about, and I know there's interest in that type of experiment.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair. Lela and Nathan, thanks for those excellent presentations. We appreciate you all coming and providing that information to us. I know that Nathan mentioned, Lela, acoustic receivers on the Carolina Long Bay site, and are you all planning to have acoustic receivers on the Kitty Hawk site as well? That's my first question, and then I have a follow-up.

MS. SCHLENKER: So we're still in that process of developing the fisheries monitoring plan, and I would say that I would be surprised if that wasn't -- You know, that's come up consistently with both our researcher workshop, our workshop with fishermen, and it's -- I mean, I think it's a very good technique to look at, in particular, both movement within the lease as well as, you know, movement between different projects, and so the CVOW Dominion project, the commercial-scale project, is only about twenty-six miles north of the north edge of Kitty Hawk Wind, and so, you know, looking at movement between these projects, and even when Carolina Long Bay comes online.

You know, seeing how you have Hatteras Break right there in the middle, and so thinking about another idea that came up from researchers is understanding, in particular, if Kitty Hawk Wind is at this really important location, in terms of climate migration and thinking about just temperature-driven movements of species that we anticipate happening, and so I think, yes, I think that will very likely be a component of our fisheries monitoring plan, or just potentially sort of side scientific research projects that we -- You know, we have sort of our formal monitoring plan, and then we also have the opportunity to just sort of sponsor research projects that are important, but maybe don't fit quite into that monitoring plan as well.

Up north, in New England, they've done that with their projects up there. Avangrid's projects in New England have incorporated acoustic tagging, and I don't believe they're part of the formal fisheries monitoring plans, but they're a priority for research, yes.

DR. LANEY: Well, I know they have actually published their Atlantic sturgeon data for some of the wind sites off the Northeast, and you probably already know, but there are datasets of information for Atlantic sturgeon. You know, we collected data for them from 1988 through 2016, during the cooperative winter tagging cruises.

Now, most of the time, we were inshore of where, you know, the Kitty Hawk Wind project would be located, but it still may provide some insight, and then Roger Rulifson, when he was still at East Carolina, you know, had that twelve-kilometer array at Cape Hatteras that detected all sorts of species that were carrying acoustic transmitters, and so I agree with you, and I think it would be an excellent way for you all to document, you know, what species, of course, may be using the site, but it's totally a function of which researchers are putting acoustic transmitters in which species, but there's a whole bunch of them out there, and there is a fairly large acoustic transmitter array.

Casey would speak to this better than me, but I recently had inquired about the NC DMF acoustic receiver array data, for Atlantic sturgeon in particular, and, if I'm correctly interpreting the email response I got back, Casey, you all are in the process of putting all those data into a database now, and so that information would also be available to you, I presume, at some point, but thanks, and I think -- Nathan, in particular, I appreciate you all, you know, doing the marine mammal monitoring, and the Motus monitoring, and the bat monitoring as well, and I assume that Kitty Hawk is probably going to do similar things for those other taxa as well.

MS. SCHLENKER: So we have already sort of conducted that site assessment plan and research, but that's definitely something that is -- Yes, it's required to continue to be monitored, and John I

think might want to chime-in a little bit more information about some of the tagging going on in the New England projects, if you're able to come off mute, John.

MR. HARKER: I am. Hopefully you all can hear me, but I want to make -- Thank you for bringing this up, and I want to make a point here too that we welcome, very much so, the input from the council as part of this development. You are an integral part, as we go around and gather, not only with the researchers and the commercial and recreational fishermen and state and federal agencies, but we definitely would love to hear more regarding these topics, and more suggestions going forward, but, again, we're not trying to duplicate completely from the Northeast, but we have had success in the years coming up to, and then soon a full deployment of our fisheries monitoring plan for our projects up there, and kind of creating, again, the storybook, but I want to also just go back to what Lela said.

We are not confined by the fisheries monitoring plan and the research that we're going to be doing. We welcome research and any type of methodologies that can benefit the greater area, and habitats within and outside of the lease areas, and so we have done that consistently in the Northeast, with whelk studies, false albacore tagging, acoustic tagging with the New England Aquarium, and so please keep that in mind, and we would be more than welcome to hear any of your input. Thank you.

DR. LANEY: So a follow-up. Once you all have your fisheries monitoring plan completed, and BOEM has signed-off on it, will you all put out requests for proposals for some of the work that you would like to see get done?

MS. SCHLENKER: Exactly, yes, and so what I'm working on now is both holding these workshops, to get feedback from stakeholders and researchers and managers, and then, as we get, you know, sort of closer to building that more formally, we will submit that to BOEM for approval, and if it is, you know, approved, that's basically -- It sort of goes out to bid, more or less, for research universities, or even potentially environmental consulting groups, and so that's kind of the secondary purpose of having these researcher workshops, and meetings, is, you know, just building relationships and making folks aware that that's a funding opportunity, a research opportunity, that is coming down the pipeline very soon, and so I want to make sure that nobody is caught off-guard or surprised by that, so we get good proposals to do that work.

MS. CROWE: David.

MR. WHITAKER: Are you anticipating using the concrete mattresses at this time, or is that going to depend on what you're finding out there nearer shore, I guess?

MS. SCHLENKER: I know, for Kitty Hawk, you know, we have very little to no hardbottom, and so we wouldn't probably need the mattresses for cable protection, but there is the potential to use that EConcrete for either scour protection around the turbines or -- Yes, probably in scour protection, and I think Nathan, and Katherine, and Albie, if you want to chime-in on that, and I know, for Carolina Long Bay, it's a bit different with the bathymetry, and so if you want to say anything here.

MR. CRAIG: Just quickly, you know, I think we're a little earlier in the process on kind of what the facility looks like, and where the turbines would be laid out, and, you know, obviously, we

haven't done our full lease geophysical survey yet, but I'm sure that, when we do kind of encounter that, that the EConcrete would be one of the options that we would evaluate, and more than likely propose in certain situations, and within certain locations, but we're just not there yet, from a facility design standpoint, or a lease survey or transmission corridor survey standpoint, kind of where that's going to be and how that's going to be set up.

MR. WHITAKER: Well, if you're assuming -- Let's assume you're going to use them, and would they be decommissioned, or would you just leave them in place? I hope you leave them in place.

MR. CRAIG: Yes, and, I mean, I think it's probably too early to know, you know, what we would be allowed to do with those, and, I mean, I think we would probably prefer to leave them in place as well, you know, but we would have to go through BOEM and BSEE's process, with regard to the decommission activities, you know, in order to be able to do that, but I would agree, and I think we would like to leave them in place as well.

MS. SCHLENKER: John, did you want to make any additional comments about the EConcrete mattresses up in New England?

MR. HARKER: I was just going to mention, for the group there, that the mattresses can be used also -- Not just when a cable cannot be buried, and so it would be on the top of the surface, but it also is used if the depth is not achieved for the targeted burial depth, through a sea burial cable risk assessment of five to eight feet under the stable seabed, and they can use the mattresses additionally to mitigate any kind of EMF effects, and so that may be used for the Vineyard Wind project.

They did only have to use it twice, and considering the dynamic corridor that they have, going from the southeast corner of Martha's Vineyard through Muskeget Channel and then to Cape Cod, and so the research that's done, the geotechnical and physical work that's done over the years, and then prior to cable installation, significantly mitigates the use, or necessary deployment, of any kind of mattresses, and so it is not a preferred method, but, if it has to be used, in those instances it would be. Thank you.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: Thank you, Madam Chair. So far, in the Q&A, we've been talking about habitat created by offshore wind, and I am sure that there are more questions, and comments, on that, but I wanted to turn briefly to the potential for habitat disturbance, and I'm wondering if Lela and John can give any update on the cable export route, and, specifically, I'm wondering about Kitty Hawk South, which has been something that this panel has discussed, the possible cable export route that goes through Pamlico Sound, versus the more offshore routes. Thanks.

MS. SCHLENKER: Thanks for that question, Brendan, and so, right now, I would say that we still have all options on the table. We have done -- I will say that we have -- So we have a potential cable route to Sandbridge, Virginia, and we have a potential cable route down to Atlantic Beach, and there is a potential cable route through Pamlico Sound, and so, right now, all those options are still being considered. There has been a lot more research, and planning, in terms of the southern routes for the oceanic route to Atlantic Beach, and so that is the more developed route at this point, but we are working on -- That's something that I hope to have more clarity on soon.

We are still exploring options where we could -- We're still exploring options about where the power is going to go, and I will say that. There is the potential for it all to go to Sandbridge, in Virginia Beach, and there is the potential for it all to go down to North Carolina, depending on who is interested.

MS. CROWE: Go ahead, Benjamin.

MR. THEPAUT: Thanks for the presentation. I also was thinking about the potential habitat loss, or impact, for those transmission lines, and I was trying to visualize it, and so is it one transmission line per turbine, or do you conglomerate all those transmission lines into one thing, and that goes above and underground, and is that, I guess, together, like a thirty-six-inch cable tied together, and then the other thing that I wanted to mention was hurricanes, or, in this group, fish storms, and how are you all designing this around hurricanes?

MS. SCHLENKER: Okay, and two really good questions, and so, yes, I will say that the -- Sorry, and I just blanked on your first question.

MR. THEPAUT: Transmission lines and the size of the combined --

MS. SCHLENKER: Thank you. There's a number of -- Basically, a string of turbines is connected to one another, and then that is basically kind of coupled up, and delivered to a substation, and so, from a substation, you have then cables going to shore, and so, for us, it does, again, depend on if we have power going to two different locations, but, for example, it could be six cables going to Sandbridge, and that's -- They are sort of like those dinner-plate-sized cables, that would, again, be buried five to eight feet below the stable seafloor and come up -- With that plan, that's basically to come up in a parking lot, just behind the beach, and so we would use a technique called horizontal directional drilling to basically go underneath the beach and come up in a parking lot.

As far as your next question about hurricanes, right now, the turbines that have come out have been basically rated to Category 3 hurricanes, and there is some really neat advancements in the software that really controls, very fine-scale, the feathering of the blades, to really adjust for variable windspeeds, and higher windspeeds, that could have the potential to damage the blades.

Above a Category 3, you know, it's a bit of a risk, but, in Kitty Hawk, we're looking at the historical data, and there really haven't been more than I think like two storms that have gone directly through the lease area in the last 150 or so years, which, obviously, has the potential to change, but that's, you know, something to -- It is a risk, always, but it's something we're feeling fairly optimistic, about with those Category-3-verified turbines.

AP MEMBER: I have a question for both Lela and Nathan. In acquiring these leases, does BOEM require a characterization of the standing ecosystem out there before any installation of equipment goes in, and what would that research plan look like? You know, I saw the part about how recruitment is going to be studied, but how will the existing ecosystem be characterized, since you can see what your baseline is, what you're changing?

MS. SCHLENKER: Nathan, do you want to start with that? I feel like I've done a lot of the talking.

MR. CRAIG: Yes, I can take a first shot at that, Lela, and so, basically, you know, what BOEM does is, you know, they go through their process, identifying call areas by gathering a lot of input from the public and other stakeholders, and then, you know, once they kind of use that to identify, you know, wind energy areas, then BOEM goes through their environmental review process, and what that environmental review process entails is looking at, you know, what are the impacts of development activities, and not necessarily construction of a windfarm, but development activities on the resources within the lease areas, the offshore wind area, and that's completed prior to BOEM conducting the auction.

What we do, as developers, is we propose what we're going to plan to put on the lease area to conduct site assessment activities, and, you know, BOEM goes through a review process and kind of makes sure what we're doing, and the information -- You know, they have information that we have to supply to BOEM in a site assessment plan, and they review that information and compare it to what they -- The environmental review they conducted pre-auction, to make sure that everything is aligned and that their assessment kind of covered what, you know, the estimated impact, or the predicted impact, would be from doing any site assessment activities.

Then, obviously, we do all the site assessment work, and the site characterization work, and then that goes to BOEM, and BOEM conducts another review process, you know, prior to approving any construction of an offshore wind facility, and that it includes turbines, the array cables, the transmission corridor, and any onshore transmission work that has to be completed to get it to the point of interconnect, and so that's kind of that long development process, where a lot of the activities that BOEM previously has kind of set the stage to allow us to put equipment in the water, to do site characterization and site assessment activities, with the intent that we'll provide more information, and a more detailed review, to permit any facilities in the lease area, and, obviously, Lela, if you have anything to add, please do so.

MS. SCHLENKER: I guess I would just add, quickly, that, you know, in terms of the biological activity in the area, that's something that hopefully should be covered within the fisheries monitoring plan, to look at if there's any -- You know, to collect two years of data, pre-construction, on any particular benthic species.

AP MEMBER: So that's not something that the developer would typically do, and you're saying that's going to fall within the responsibility of NOAA Fisheries?

MS. SCHLENKER: No, and so we do -- The developer does the fisheries monitoring plan.

AP MEMBER: Okay, and so you'll do a focused monitoring plan for two years prior to installation.

MS. SCHLENKER: Yes, and that's the plan that I mentioned that I'm putting together now, and we're getting the input on from research that's been done.

AP MEMBER: That wasn't clear to me, whether the research began once it was installed, and you're just looking at recruitment, or if there was --

MS. SCHLENKER: No, it's two years of pre-construction data.

AP MEMBER: Sorry if I missed that.

MS. SCHLENKER: No problem.

AP MEMBER: Thank you.

MS. CROWE: I'm going to go to Wilson next.

DR. LANEY: Thank you, Madam Chair, and so this is a question for Lela, or Nathan, or anybody else on the webinar, and, some while back, I had read an article about putting color on turbine blades as a possible means of reducing bird strikes, and has anybody done any additional work on that, and is that something that the companies are considering that would be a useful add?

MS. SCHLENKER: I'm guessing those may have land-based studies. I would love to take a look at them, and I know that there are considerations, in terms of the coloration, with regards to navigation safety, and viewshed concerns as well, and I know that Virginia Beach has just sort of requested the Dominion project, I believe, to use a particular shade of gray, to kind of minimize the viewshed disturbance, and I would open that up maybe to John, and I know you've done some of the work, in terms of the navigation safety.

MR. HARKER: Thank you for that, and I was just kind of picking through my brain as well, and I believe RWSB is looking into some research as to some avian avoidance with the blade colors, but that's something that we can look into and get back to you as well. Besides that, from the kind of navigational side of the house, I mean, we're really kind of sticking with the standard, which is increasing exponentially on coloring, retroactive taping, numbering, things of that sort, for up north, but, in regard to the avian, we can definitely get you more information on that.

MR. CRAIG: I would just add, real quick, you know, Duke University project, as well as some other efforts, like Dominion, for their CVOW project, they're also looking at avian interaction, as well as bat interactions, and how that corresponds, or correlates, to windspeed. You know, obviously, all these turbines will have a minimum kind of shutdown speed, where, you know, the turbines will not speed, when you reach kind of those minimum windspeeds, and that somewhat can be correlated to avian and bat activity, where, you know, the higher the windspeeds, the less likelihood some of these species may be present, and so that's another effort ongoing, with regard to impacts to birds and bats.

DR. LANEY: Lela, I think the article that I read about the red colors on the blades probably was more terrestrially-oriented than marine-oriented. The other thing that I wanted to just mention was that another recent article that I read, and, again, it was more terrestrially-oriented, but it indicated that they were working on a system, and this was for golden eagles, I think, that would automatically shut down the turbines if golden eagles were detected in the area. Now, how they were -- You know, what sort of equipment they were using to make those detections, and to pause the blade operation, I don't know, but that's something else that I suppose might be a possibility.

Again, it would be totally dependent on what sort of data you all determined relative to migration of seabirds through your wind lease area, I would imagine. If it turns out there's not much going on there, then it might not be a very big concern, and then, obviously, if it does turn out that painting them bright red, or something like that, would go a long way toward reducing avian

impacts, that is sort of counter to your, you know, aesthetic considerations, as far as the viewshed goes. One again, you know, BOEM would be in a balancing situation there, I suppose, of, you know, balancing human visual considerations with bird visual considerations.

MS. CROWE: We had Brendan, and then I know Jordan had her hand up.

MR. RUNDE: Thank you, Madam Chair. I have a little bit of concern, not just with Kitty Hawk or the other southern projects, but sort of across-the-board with the amount of monitoring that's required as a baseline, the two-year thing. I think, for certain aspects of a fisheries monitoring plan, that's perfectly appropriate, but I wonder -- You know, acoustic telemetry isn't that expensive, and Kitty Hawk -- Avangrid has the lease now, and I presume that there's some activity, some vessel activity, that Avangrid is either doing themselves or having contractors do out in the area right now, and is there an argument for tossing a couple of receivers out there soon, starting to gather that information, in anticipation of that being included in the fisheries monitoring plan and/or a future NOAA Fisheries biological opinion, with conservation recommendations that turn into requirements?

MS. SCHLENKER: Definitely, yes, and so that's what I think John had mentioned earlier, and I alluded to, is basically there is what we do within the fisheries monitoring plan, and then there's extra additional research, and so that's -- Yes, acoustic tagging is -- Particularly considering there's a sort of concentration, as you know, of researchers focused on that in the area, and, yes, it's a -- Yes, I would say we would think to do that well in advance of any fisheries monitoring plan, potentially.

MR. RUNDE: If I can just jump back in, and I'm not even necessarily talking about tagging. I'm just talking about throwing some receivers out there, because of all the tagging efforts that are ramping up coastwide right now.

MS. SCHLENKER: Definitely, yes, and I think that's -- Yes, it's something we'll start to think about, because, you know, we're already sort of having those conversations with folks, and so another opportunity that is sort of timely, and kind of speaks to the strength of these type of meetings, and just collaborative work in general, is, when we were at the council meeting last December, and holding a workshop, we took the opportunity to meet with some folks at the Southeast Fisheries Science Center in Beaufort.

We have now been sort of planning, with them, and they're extending their trap and camera survey up to the Virginia line, and so that will cover the Kitty Hawk lease, and so we're in talks with them about planning exactly where they're going to put those traps, and have shared things like our sidescan survey -- Our sidescan sonar survey data, and our future turbine locations, and so they're actually planning their trap locations, sort of with our input, and thinking about like how we can use that data going forward in the future.

Sure, it's sandy bottom now, but there's going to be a turbine here, in five years or so, and so that's kind of another research opportunity that is sort of unofficially starting this summer, where we're going to be getting some data, but, yes, as you mentioned, yes, putting receivers in is a low-cost options for just getting some good data on who is swimming by or hanging out.

MS. WOLFE: We've talked a lot about how these platforms and offshore wind will change the distribution abundance and catchability and stuff of fish, and can you provide any information on either discussions with the Southeast Fisheries Science Center and either NOAA Fisheries with regard to fisheries-independent monitoring and then, also, dependent monitoring that informs stock assessments, and then how those surveys will be impacted by the projects, not only the distribution of the fish, but like the changing in the survey designs, the research objectives that the surveys will now need to be altered, and then also within -- Is there going to be an exclusion zone within these offshore wind lease -- Or the Kitty Hawk North offshore wind lease area, and so like monitoring that has been done there historically won't be able to be done anymore, at least where those turbines are, and can you provide any information on that?

MS. SCHLENKER: Great question. We are not excluding any surveying, or any -- You know, we're not excluding anything, basically, and that's sort of determined by BOEM, that all of these wind projects need to be open to regular vessel traffic, fishing, whatever, survey work, and there is ongoing -- As you might be aware, there's an ongoing sort of hot topic within NOAA Fisheries that they have stated they will not -- By their own choice, they will not sample within windfarms, because they don't, I guess, feel that they are -- They're not prepared to operate their boats within a one-nautical-mile spacing.

We are part of ongoing conversations, basically, of how can we mitigate those surveys, and so that's like a big, larger conversation that's sort of being led, I guess, more by what's going on in New England, because those projects are further along, and so -- But, basically, in New England, what's happening is that there's these regular meetings happening now, as of just a couple of months ago, to kind of discuss, both with on the NOAA side, BOEM, and the developer side, sort of how we do that and approach it in a sort of sensible way that makes sense for both NOAA Fisheries and data collection, and on the developer side as well.

MS. KEENER: Thank you both for this informative presentation. In your discussion with the research community, have you heard any discussion of monitoring for like eDNA or microplastics?

MS. SCHLENKER: Microplastics, and that's one that actually we haven't really talked about, and so that's something to think about, but eDNA, yes, certainly. That is, it seems like, in addition to putting some acoustic receivers out there, and eDNA is a very effective, low-cost, you know, easy to add on to any kind of basic sampling plan, and so that's something, and, very importantly, also, you know, it's no-kill, I guess, and so we do think about that, in addition to thinking about, you know, is it a trawl survey, is it a gillnet, and eDNA has the advantage of not being so invasive to the environment for a species.

MS. KEENER: Just to mention exploration, use of these platforms as exploration platforms, and so, in your comment about working with NOAA, and I can't remember, and just a few minutes ago, but anyway, NOAA's Office of Ocean Exploration and Research would be a good place to start looking at what the needs might be there, in terms of exploring ocean exploration over time, and so I can give you some contacts, if you need them.

MS. SCHLENKER: That would be great.

DR. JOHNSON: To answer your question about the Southeast Fisheries Science Center, being that I'm from there, and part of that team, we're working extensively on modifying all of our

survey techniques. We've gone so far as to purchase an additional vessel. The one-mile restriction is related to OMAO, which operates our large white ships, and so we're basically moving away from those type of platforms, and so we can sample in these type of fields.

I am currently working on a project with the Northeast Fisheries Science Center, where we're working to start actually work around CVOW, to start testing out different techniques, how we can monitor our sampling programs to make sure that they function in this particular environment, and so we have a lot of people working on these issues.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. To tag-on to what Matt just said, and what you said earlier, Lela, are you all including the Atlantic States Marine Fisheries Commission and the NEMAP program within your discussions as well, because they also are fishery-independent-survey oriented, and I just wanted to make sure that you were including the commissions as well as the councils.

MS. SCHLENKER: Yes.

DR. LANEY: And NMFS. Okay.

MS. SCHLENKER: Yes, certainly, and I guess it's -- You know, I don't want to give the impression that Kitty Hawk is leading the way on that. You know, we're part of that conversation, and so that's a big sort of collective discussion that's ongoing, but we're certainly in the mix.

MS. CROWE: Okay. Any other questions?

AP MEMBER: I stepped out, really briefly, and so, if this has already been answered, you can just tell me that, but I'm curious what relevance, if any, some of the international projects that have come along, and research that's come out of that, as to your development, and I'm not a scientist, and so maybe I shouldn't have been surprised not to see examples from France, or other countries that have done offshore wind development, or are doing offshore wind development, and have you guys considered that, and is there a reason that some of these gaps in knowledge aren't at least informed by some of the other products that have taken place?

MS. SCHLENKER: I would say they're certainly informed, and there's a number of distinctions between European projects and in the U.S., and like, in particular, turbine spacing is quite different there. They're much closer together, and I believe that almost all, or all, exclude fishing activity, and as well as, you know, just sort of having basic ecological differences and species assemblage differences, but, you know, for Avangrid, we're part of an international -- We have a parent company, Iberdrola, which is a Spanish company, and we have a lot of international projects, and so certainly that data is all taken into consideration, but it just typically --

It's a little bit better to compare U.S.-based projects, and we've met some -- I guess we've had some criticism in that way, to say like, well, you know, let's not think about what's going on in Europe, and let's talk about like, you know, the CVOW towers, and so that's kind of why I chose to highlight U.S.-based examples, but we certainly take that data, and that information, and that is all taken into consideration, and there's a lot of similarities, even though there is differences in the

ecosystems, and the species assemblages, but, yes, there are some important distinctions, in terms of the turbine spacing and fishing activity.

AP MEMBER: I figured there probably were some important distinctions between what they're doing and what we're doing, but are there any parts of the globe -- I guess, simply, are there any other areas of the world that have wind turbines that have more similar coastlines or ecological development or species out there, or is it just this is a pretty unique area, which I personally think it is, but I really don't know enough about the world to say that there aren't other places out there where we can learn something, but I didn't know if that was -- If you knew the answer to that.

MS. SCHLENKER: I mean, I guess there's always -- I guess it depends on how similar you want it to be. I think like, you know, some of the European projects are probably more similar to what we might see in like New England, and so, in the southeast U.S., I think we are sort of fairly unique, but, yes, certainly there is lessons to be learned and data from much -- You know, they're ten years ahead of us, in terms of offshore wind, and so there's a lot that can be learned there, yes, about the impacts.

AP MEMBER: Thank you.

MS. CROWE: Thank you, everyone. That was great discussion, and a great presentation, and thank you again, and we are going to move on to our next wind energy presentation, and that is Seth, who is online, and he's going to talk about current decommissioning methods for the South Atlantic.

MS. HOWINGTON: One sec, because Seth has actually -- He has tweaked his presentation, and so he has requested to be able to share his screen, and if you'll give me one moment.

MR. THEUERKAUF: Thank you, Kathleen. I just made some --

MS. HOWINGTON: You're going to need to switch screens, Seth.

MR. THEUERKAUF: Okay. Can you all see the correct screen there now?

MS. HOWINGTON: Yes, we can. Thank you.

MR. THEUERKAUF: Okay. Wonderful. All right. Well, thank you all, and thank you for that introduction, and I appreciate the opportunity to be with you all virtually and presenting to the Habitat and Ecosystem Advisory Panel. My name is Seth Theuerkauf, and I am a project coordinator with BOEM's Office of Renewable Energy Programs, and I am BOEM's lead manager for the Carolina Long Bay offshore wind energy leases. Again, I really apologize for not being able to join in-person, but I do appreciate the opportunity to share with you all virtually, and I've been really enjoying the discussion thus far, and hopefully what I will share here will be additive to the great information that's already been shared as part of the session.

I am presenting today on behalf of both myself with BOEM, as well as Tamara Artz, who is with the Bureau of Safety and Environmental Enforcement, or BSEE, and BSEE is a sister agency to BOEM, within the Department of Interior, and BSEE is really charged with overseeing and enforcing activities related to operations, maintenance, and decommissioning of offshore wind

facilities, and so they basically take over once offshore wind projects are constructed, and they begin -- Their regulatory activity is really more about the operations and enforcement side of things.

Tamara is not able to be with us today, but, at the end of the presentation, I will have her contact information available, and it's also available in the PDF that was posted on the council's website, and, if there are any particular questions for BSEE that folks have, I will be happy to take those back and make sure they are answered.

In terms of topics to be covered, there are three main areas that I will be touching on in my presentation. One is the long-term effects of offshore wind facility structures on habitat, and we've already heard some great information from the North Carolina developer team on this topic, and so, again, I will try to be additive, and not be duplicative, with information there. Beyond that, I will touch on offshore wind facility materials and effects on biofouling, and Brendan, I believe, mentioned the project that we have, that has just gotten underway, with some BOEM Environmental Studies Program funding support, to actually look at different scour protection materials and their effects on biofouling and habitat provisioning.

Then, lastly, I will touch on decommissioning regulations and processes, another area that I agree with the information that was shared by the North Carolina developer team, but I will go a little bit more in-depth on those regulations and what that process looks like, and then we'll leave some time for questions and if there are any requests.

Beginning here with a brief discussion of the science around long-term effects of offshore wind facility structures on habitat, and I noted, as well as Lela, that, you know, we're pulling from the same synthesis study here for the graphics, and this is a really good paper, that I certainly encourage folks to take a look at, and I have, as one of the few slides, a references list, and that will be a way to get access to this particular publication.

What's really relevant here is that any new wind turbine foundations, scour protection, transmission cable mattressing, met ocean towers or buoys, or really any of the sort of hard infrastructure components that are a component of an offshore wind facility, have the potential to create benthic relief, and why that's important is that that hard structure, in terms of providing and creating benthic relief, could function similarly to artificial reef or hardbottom habitat, and you've heard a little bit about that already from the presentation that preceded this one.

What's important here is that benthic species that are dependent upon hardbottom habitat have the potential to benefit from that increase in hard surfaces, resulting in an increase in benthic diversity, in terms of that fouling community that can develop on these hard structures, and then, beyond that, the associated reef-dwelling species, or reef-associated species, that would benefit from that structure.

What is important to note is that, in terms of, you know, a need for longer-term monitoring, is that, in terms of high initial diversity levels that are often observed, in terms of development of the fouling community, that can often decline over time, as early colonizers are replaced by successful communities, and you sort of have the development of semi-stable artificial reef communities.

Other long-term effects that are noteworthy, and are part of the environment analysis, the environmental assessment process, of any proposed offshore windfarm include, you know, evaluation of the potential for establishment of novel habitat that could be colonized by invasive species, and there are concerns, in certain instances, that the addition of hard structure could create sort of stepping stones that could spread the distribution of certain invasive species, such as certain tunicates.

Additionally, given that soft-bottom habitat is the dominant habitat type in the Mid-Atlantic region, much of the environmental assessment that's been done on projects to-date has anticipated that the scale of impacts associated with offshore wind facility installation is not expected to generate population-level impacts to species dependent upon soft-bottom habitats. However, it is expected that structure-oriented species, and their predators, would likely moderately benefit from the reefing effects that are associated with deployment of offshore wind infrastructure. Again, that gives a bit of a kind of higher-level, with some detail, overview of some of the long-term effects that we can expect from offshore wind facilities.

Here, I want to dig a little deeper into that study that I mentioned, that's already been brought up related to offshore wind facility materials and effects on biofouling, and so this is a study that is being conducted in partnership with BOEM's Environmental Studies Program. In the PDF of these slides, we have two links, the first of which will take you to a study profile, which is basically a two-pager that describes this particular project on BOEM's website, and so I encourage you to take a look at that, but this study is titled "Evaluating the Effectiveness of Nature-Inclusive Design Materials".

The purpose of it is to test the effectiveness of different materials in promoting marine growth and enhancing habitat, and so, specifically, several materials, five materials in particular, that are listed here, are being deployed, and work is underway to monitor epifaunal growth and habitat utilization of those particular materials, and so you can see, from this map here, and this is the location of the study area, and that is adjacent to the Coastal Virginia Offshore Wind project that is nearing construction.

What's important to note here is that the field data collection is anticipated to be completed in early summer, and there will be some post-processing happening during the summer, and then we expect a report associated with this project to be available by the end of 2024, and so, if this is a study that is of interest to the AP here, we could certainly work to have a presentation, likely sometime early next year, if that's of interest, on the results of that project.

Now I want to turn my attention to, or turn our attention to, the decommissioning regulations and process. There's a lot of information here, and so I'm going to try to step through it in sort of a step-wise fashion, but I'm happy to take any questions, after I share this information, and then, in the slides that are linked on the website, there is all this information captured there as well, and so that's a resource that you can point back to.

The Bureau of Safety and Environmental Enforcement, BSEE, is the lead agency for enforcing decommissioning of offshore wind facilities in U.S. federal waters. In particular, there are specific regulations, BSEE regulations, that describe decommissioning, and also, within individual offshore wind leases, there are further requirements describing infrastructure decommissioning.

What's been shared by the North Carolina developers, in their past presentation, or the presentation prior to mine here, is that, as part of the construction and operations plan, or the COP process, leaseholders submit a conceptual decommissioning plan that basically lays out a broad overview of anticipated project decommissioning activities.

However, when it comes time, you know, towards the end of the lease duration, the end of the lease or project lifespan, there will be a formal decommissioning application that is developed and submitted by the leaseholders, and that formal decommissioning application will be evaluated under a future environmental analysis conducted under the National Environmental Policy Act, or NEPA, and that would likely take the form of an environmental impact statement.

Now, just to kind of drill into that a bit further, and talk through this a bit more sequentially, within 30 CFR Part 285, those are the specific BSEE regulations that dictate the regulations and processes that BSEE undertakes as part of their responsibilities as an agency, and then, as I described, there are further requirements within renewable energy leases, the offshore renewable energy leases. Within both of those sets of requirements, leaseholders are required to remove or decommission all facilities, projects, cables, pipelines, and obstructions and clear the seabed of all obstructions created by the project, and, specifically, and this was mentioned in the last presentation, the regulations specify a requirement to remove to fifteen feet below the mudline.

Absent permission from BSEE, the lessee is responsible for achieving complete decommissioning within two years of termination of the lease, and so, essentially, two years after the end of the lease term, all materials associated with the project need to be removed and either reused, recycled, or responsibly disposed of, again with two years of termination of the lease. I've already mentioned this, that leaseholders submit that conceptual decommissioning plan, as part of their construction and operations plan, and then that final decommissioning application would outline the process for managing waste and recycling project components. It can also include some other outlets, and I will talk about that here in just a second.

In terms of the timing of the decommissioning application, there are specific time drivers that are specified in the regulations surrounding that application. That is the submission of that decommissioning application either two years before the lease expires or ninety days after completion of commercial activities of the lease area or ninety days after cancellation, relinquishment, or other termination of the lease.

Once BSEE is in receipt of that decommissioning application, BSEE will conduct a series of technical and environmental reviews, and the outcome of that is BSEE either approving, approving with conditions, or disapproving the decommissioning application. What's important to note for the group here, for the committee here, is that the process would include an opportunity for public comment, in consultation with a variety of government agencies, and so the process under which that decommissioning application will be reviewed will be a public process, and there will be opportunities for input, likely ahead of the decommissioning application submitted, but certainly once that application is under review.

This has also been mentioned within the past presentation, but there is the ability, per the BSEE regulations around decommissioning, for specific facilities, for specific pieces of infrastructure, to be requested to be sort of retired in place, or remain in place, or to be converted to an artificial reef, and, again, the approval of those requests, those activities, would require compliance under

NEPA and other federal statutes in the Code of Federal Regulations. One important note, that I heard in the last presentation, was considerations around safe navigation, and so there are a number of considerations that would go into any future decision-making related to retiring in place or other decommissioning-related decisions.

The last note I have here, as it relates to decommissioning, is that, if the COP is approved, and so, again, that construction and operations plan that specifies, you know, plans for the development of an offshore wind facility, at the time of COP approval, or actually prior to that COP approval, the leaseholder is required to submit a bond or other form of financial assurance that would be held by the United States government that covers the cost of decommissioning the entire facility, in the event that the leaseholder would not be able to decommission the facility, and, again, the idea here, within this regulation, is really to ensure that the resources are available, should, for some reason in the future, a leaseholder be unable, financially, to decommission their specific project, and this decommissioning financial assurance requirement ensures that there are funds available for the U.S. government, should that need arise, to actually decommission the facility.

That's what I have, in terms of the specific areas that I was asked to cover, and here I have the references that were linked in the slides that I've shared, and then, on this slide, I have both my contact information as well as the contact information for Tamara, and so I really appreciate it, and I'm happy to take any questions or talk about anything that I shared.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: Thank you, Madam Chair, and thank you, Seth. Can you, within even just the order of magnitude, talk about the value of the magnitude of those bonds that you just had in the last slide?

MR. THEUERKAUF: Sure, and it's -- It's very project-dependent, and what I can share is that the Bureau of Safety and Environmental Enforcement, BSEE, often contracts an engineering firm to do a detailed study that would explore and evaluate the decommissioning costs associated with decommissioning and removal of every element of an offshore wind project, and so there is a detailed study that really, you know, goes over what those costs are, and so, in terms of what -- You know, what those costs actually are, it's going to vary depending upon the specific project, and there are certain projects that are smaller scale, in terms of ten, fifteen, twenty turbines, versus those that are proposed at the scale of a hundred-plus. What I can share is that it is not inexpensive, and it's on the orders of tens to hundreds of millions of dollars, in certain cases, to decommission projects, and so it not an inexpensive endeavor.

MS. CROWE: Anyone else have any questions, or comments, on Seth's presentation? Benjamin.

MR. THEPAUT: Hi, Seth. Thanks for the presentation. Maybe in terms of a different maybe threat to decommissioning, what about if a Category 4 hurricane -- We learned, in the last presentation, that these are rated upwards of Category 3, and what would happen if a hurricane came through and mangled everything, and who would be responsible for the cleanup?

MR. THEUERKAUF: Thanks for the question, and so I can share that, as part of the process for reviewing construction and operations plans, there's a wide variety of consultations that occur, including discussions between the developers and BOEM on what's proposed, as well as the

developers and other agencies, and, often, what results from all of that review, and all of that process, are specific conditions of construction and operations plan approval, and so those conditions are placed upon the developer, should their construction and operations plan be approved.

What that can include, and it can include a wide range of things, and so we've seen, in certain instances, that include post-storm monitoring, and so actually specific monitoring that's required following major storm events, to understand what those impacts might be, and I know that, in terms of the decommissioning financial assurance -- I will have to double-check all of the details, but I do believe that that bonding is intended to, in certain instances, cover in the event that there's a catastrophic storm, of some nature, that could cause, you know, bankruptcy, or some sort of severe financial challenges to a company, that that decommissioning financial assurance is in part intended to ensure that there are resources available to cover cleanup of any project, should one, you know, reach a catastrophic endpoint of any sort.

I will also share, and this is maybe something that the developers can share a little bit more about, but I do know that, often, projects are insured, and so there's actually insurance that the companies have for these specific infrastructures, and so I imagine, you know, in certain instances, and, you know, should a hurricane impact several turbines, there are resources, through likely their insurance vehicles, that would be able to cover restoration activities.

MS. CROWE: Wilson.

DR. LANEY: As a follow-up, Seth, you just mentioned the insurance, and I know many of us have been following the saga of the Key Bridge in Baltimore, and so I guess insurance would cover a ship strike as well, probably, although we hope that nothing like that would happen, but, then again, we hoped that one wouldn't hit the bridge either, and so would that be covered under insurance as well, and is that actually addressed in the decommissioning plan? I mean, that one would be a little bit tricky, I guess, and it would probably depend on the amount of damage that the ship did, and I could even see a ship the size of the one that hit the Key Bridge could collide with multiple turbines, I suppose, in an array, and so does a decommissioning plan address that sort of potential impact as well?

MR. THEUERKAUF: Thank you for the question. In terms of the decommissioning process I shared, it is the conceptual decommissioning plan that is submitted early on, or relatively early on, as part of that construction and operations plan process, and it's more of a high-level, broad overview of what could be envisioned, in terms of decommissioning, and then, at the sort of tail-end of a project, there's a much more detailed decommissioning application that comes into BSEE, and that would be further reviewed, and so that's, in general, how the process works through decommissioning.

I would say that it's a little hard to speculate, and maybe, in that past answer, speculate a little bit there, but it's kind of hard to speculate, you know, the instances of catastrophic events exactly, and, you know, which direction, or which process, would be triggered there, if there would be interest in going the route of, you know, full-scale decommissioning of a project, should an event be catastrophic enough, or, you know, in the case, restoration activities that would likely be covered by insurance, but decommissioning bonding, the decommissioning financial assurance, those resources are intended to really sort of protect the United States government from having to

bear the cost of full-scale decommissioning of a project, should a company that holds a lease run into financial challenges, and so that bonding is really focused around that larger-scale sort of resetting the baseline decommissioning of a project, versus, you know, specific instances that could potentially result in either restoration or, you know, perhaps removal of certain pieces of damaged infrastructure.

DR. LANEY: Okay. Thank you.

MR. THEUERKAUF: Absolutely.

MS. CROWE: Any other comments, or questions, in the room or online? If there's nothing else, I'm going to hand it over to Kathleen here for a minute.

MS. HOWINGTON: All right, and so I'm going to take control back, if you give me one moment.

MR. THEUERKAUF: Sounds great. Thank you, all.

MS. HOWINGTON: Thank you very much for presenting. We really appreciate it. All right, and so, with that in mind, and this has been a fantastic discussion, but I'm now going to actually utilize the reason why we have two screens up here, and I'm going to pull you guys back into thinking -- Instead of just discussion, but more action items. What can we, as an advisory panel, do with this information?

One suggestion has already been made of integrating the references that were made on the slides 4 and 5 into the energy policy, and that's one thing that we can do, and so, if you look up in front of you right now, we actually have my notes that I have been taking, that I am going to zoom-in as far as I can, so that we can actually see. One moment.

If you are on the webinar, you are only seeing my notes right now. If you're in-person, you're seeing my notes on one screen and the presentation on the other, and so I can pull up any presentation that you all want to discuss, and I can pull up my notes, but my real question is, is there any AP action items that we want to discuss? This was very good, and is there anything that we want to integrate into the energy policy, because of these decommissioning plans, or do we want to just say thank you very much, and this was very informative, and move on? How do we want to proceed?

MS. CROWE: Wilson, go ahead.

DR. LANEY: So I would ask Paula. You know, now that we have all sat through these presentations, did you see a lot of, you know, additional information that would be beneficial for us to integrate into the energy policy?

MS. KEENER: Well, I think the recommendations that were just presented on decommissioning -- That we could reference those, and, I mean, I guess that's state-of-the-art now, right, and so referencing what was just presented. I am looking for -- We also discussed insurance, and do you want to take that?

AP MEMBER: Yes, and so it struck me, when we were talking about, you know, whether it's mitigation of a -- Basically, if it's a foreseeable risk, a hurricane coming that is above the rated -- Or even at the rated degree, but just ensuring that adequate insurance exists, and is in place, for all life cycles of the development plan, and I think that would be -- I was looking just briefly through the energy policy, and, I mean, there's a lot. There is discussions of putting a fund in place, particularly when it comes to decommissioning, or just making clear kind of how that would be paid for, whether it's a ship strike or a hurricane or something that, you know, we can't think of.

I mean, strikes - A hurricane coming through, you might get an insurance company that says act of God, and there's no insurance coverage, and so kind of anticipating those types of things, ensuring that insurance coverage would cover losses, or that the company would -- Or that the bond would be specified not just for decommissioning in the end of the life cycle, but due to a natural disaster or something like that.

MS. HOWINGTON: So is your recommendation to add into the energy policy, in our mitigation section, ensuring that a bond, or insurance area, is available to cover disasters as well as decommissioning?

AP MEMBER: Yes, and I would say all reasonably foreseeable risks to, you know, habitat, ecosystem, environment, that type of thing.

MS. KEENER: Bonds are already mentioned, but the insurance could certainly be added. I think -- So I guess one of the questions I have is do we want to add a separate section on decommissioning, or do we want to -- Decommissioning activities, or would we want to put that under the structural -- The construction section?

MS. WOLFE: Thank you for your question, and so, in the NMFS BOEM guidance that I had recommended that we put into that section, they -- Within that document, it breaks down what decommissioning should be done within the EFH assessment process, and it says that a comprehensive decommissioning plan should be provided in any initial EFH assessment, but a follow-up EFH assessment will need to be done prior to decommissioning, and so, in that twenty-five-year span, and so I think splitting that up, with regard to how the NMFS and BOEM template does it, I think to keep things consistent within our regions, will help, and I think that makes sense.

AP MEMBER: I have a question, based kind off of what Brendan was asking about some of these low-cost, or minimally-invasive, research projects that could happen before the two to three-year program, before the two to three-year timeline, and I thought it might be good to kind of add that into the energy policy as well, something to the effect of, you know, we can say keep the two to three years before construction begins, and you should start monitoring, but maybe just emphasize that, as soon as possible, you should consider these low-risk, or minimally-invasive, research projects, getting those going as soon as possible, just to increase the -- Particularly it sounds like there's a lot, it sounds like, that we have to learn, and there are a lot of exciting reasons we need to learn these things, and we're going to take the risks of the unknown to try to move forward with some of these projects, but, if we can start researching for relatively low costs, or minimal invasiveness to the environment, we should encourage the companies to do that as soon as possible. I don't know, Brendan, what your thoughts are about including that more specifically in the energy policy.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: I guess if it's okay with the chair if we start a back-and-forth.

MS. CROWE: As long as Kathleen can keep up.

MR. RUNDE: I guess I just want to make sure we all recognize that, whatever we write down, is kind of a living document, because it seems like this whole thing, and probably rightfully so, is kicking the can down the road, because we don't know what we're going to want twenty or twenty-five years from now. The people who make those decisions at that time are probably in high school, and so I think it's appropriate for this body, along with the various federal agencies, to assume, from a financial perspective, from a policy perspective, assume that we're going to want to do the most invasive thing, and then, if we wind up backpedaling on that, then it costs less, right, I mean, from a -- That's why the value of the bond is what it would cost to take all of out of the water, down to fifteen feet under the mudline, or whatever that was. I don't know that -- I don't know that that can be adequately reflected in the verbiage of the policy, or anything that this body produces, and I guess I just wanted to see what other members think about that.

AP MEMBER: Just to clarify, this is separate from the bond and -- This is just, when you're researching what is going to be the impact of these projects in this area, and we are recommending that, when you're doing an energy project, two to three years before construction, you should start monitoring, and that's the current -- One of the current recommendations, in addition to researching and monitoring should occur, you know, before, during, and after, and would it be useful to say, you know, specifically, if there are -- As soon as you can, once you have a lease in place, whatever you can do, if you can it for a low cost or minimal invasion at that point, do it now, and so whether it's the devices that you talked about, that don't cost a lot, and you go throw them out there, and you already have vessels going back and forth to these sites and doing research, and, if you could throw a couple of other devices out there and get more data, you should consider doing that. That's my recommendation.

MS. CROWE: Does anyone else have anything to add to that? Go ahead.

AP MEMBER: I think you're going to have a decidedly data bias, because you're going to have two to three years maximum of the baseline, and you're going to have thirty years of research on the impacts of this hard structure, on what was a soft environment, and so, by the time you get to the end of that thirty years, we're going to have a great preponderance of data about the change, but you'll have a small amount of data about what it was before the change, and so I think it's just something to consider.

MS. CROWE: Casey.

MS. KNIGHT: Forgive me if this is already in the plan and I missed it, but talking about, you know, additional research and everything, and also making sure that this research is properly disseminated to us, and especially when we talk about the acoustic telemetry pings and stuff like that. As Wilson alluded to earlier, North Carolina works very closely to make sure that all of our receivers in North Carolina, which I think right now is about twenty-seven across the state, in the coastal region, and is maintained by VMF and several universities and researchers, but we are working very diligently to make sure that all of that is included in these universal databases that

are accessible to all of the different researchers, and so I would hate to see this kind of work done in a vacuum and then not be, you know, disseminated to the folks that can really use it, even outside of the wind energy world.

MS. CROWE: I think that's a great point. Go ahead, Wilson.

DR. LANEY: Amen to what Casey just said, and so we did that with our Atlantic sturgeon data from the offshore tagging work, and so National Marine Fisheries Service has that database, and ASMFC has that database, and Lisa Wickliffe, et al., when they produced that 2019 document on environmental windows for the South Atlantic, or North and South Carolina, but they took the data that we had provided them and went ahead and did some additional analytical work on it to produce a really nice GIS heatmap of where we found Atlantic sturgeon in doing our work offshore, and so that's the kind of thing that can happen, as long as the point that Casey made is implemented, and that is, you know, if the research information can be made accessible. I will just say, again, that I think BOEM does an excellent job of making the data that they are involved in producing accessible, and available, on their website, and I really appreciate that.

MS. CROWE: Thanks, Wilson. Kevin.

MR. SPANIK: There was a comment about what's been done in the Gulf with decommissioning of some of the oil platforms, and there was, I believe, a commitment that they had made towards future monitoring after that point, and was there -- Did I hear was there -- That was just a this is what they do here, or was that a commitment that was going to be made in this region too? Then, if so, it would be nice to have some information on like what that might look at, like what level of monitoring, and how long they're on the hook for after that decommission, and maybe we can make some recommendations of what that might look like, too.

MS. CROWE: Is there anyone that can speak to that?

MR. MILLER: I particularly like this one about the low-risk or minimally-invasive research, and it made me think about eDNA, and one of the challenges that NOAA faces is incorporating eDNA into the blue economy, and the real magical, million-dollar question is their relationship between abundance and eDNA abundance. It looks to me like, just shooting off the hip, that these have a perfect opportunity for you to have eDNA sampling in a place where there was no habitat, and then there is habitat, and now species are being congregated at the habitat, and you can actually have some indices of abundance that you would use to see is there any relationship between what you find with the eDNA sampling and fish abundance. That's much easier said than done, but, anyway, I think this has some real opportunities in that regard.

MS. SCHLENKER: I just wanted to answer your question, Kevin, and so I guess I would just say we're looking to BOEM for guidance on this, and so this is just an idea of, you know, we know this program exists, but, yes, the perspective of the developers on this issue is just that we have to do what BOEM says, and we're waiting to hear what that is. They've sort of loosely laid out these fifteen feet, classify as artificial reef, or re-up to renew, and so that kind of goes back on them, but whatever -- You know, thirty years down the road, whatever that recommendation is from them, in terms of how to classify as artificial reef, that's the guidance we'll look for, and so I just wanted to address that.

MS. HOWINGTON: Before we switch away, I know that Seth has texted one of our panel members. Anyone who is on the webinar, if you want to raise your hand, there's a button on the right-hand side. It's a curved line with four lines on top, and it looks like a child's hand turkey. You can click on that, and I will call on you after we're finished with the in-person comments.

MS. CROWE: Wilson and then Paula.

DR. LANEY: Thank you, Madam Chairman. Just to tag onto what Steve said, Steve, that kind of work that you just suggested, which I think is an excellent suggestion, by the way, is already being done in some of the riverine systems. You know, it's a little bit easier there, maybe, because you've got unidirectional flow, and, in some cases, you're actually monitoring the strength of the anadromous fish runs, and so you have a whole lot higher opportunity to perhaps correlate the eDNA abundance with abundance.

Then there have been lab experiments done at Edenton National Fish Hatchery where they actually put, you know, a certain number of river herring into some of the round tanks there, and then were able to correlate eDNA with numbers. I think your suggestion is a great one. It might pose some interesting, and different, challenges, you know, in a marine system, which is more wide open than a riverine system, where the water is at least confined, you know, to some extent within a defined channel.

MR. MILLER: I will just answer that. The reason I brought this up is because my daughter manages the 'Omics Portfolio for NOAA, for eDNA deep-sea ocean research, and they're focusing now on studies at greater depths of 200 meters, and I'm like, wow, this seems like this sets up well for that kind of work.

MS. CROWE: Paula, did you have a question or a comment?

MS. KEENER: Yes, and I just want to note -- Thank you. I want to note that, although we say, in this policy, draft policy, that we are addressing threats for energy exploration and development, operation, site decommission, and structure removal, we don't specifically -- I mean, that whole last section of site removal -- I mean, site decom and structure removal is not addressed in this at all, and so I think we've got some work to do.

MS. HOWINGTON: (Ms. Howington's comment is not audible on the recording.)

MS. KEENER: Thank you.

MS. HOWINGTON: Jordan and then Seth.

MS. WOLFE: Thank you. With regard to like the fisheries monitoring, have there been any discussions with regard to invasive lionfish monitoring, or any type of mitigation related to lionfish inhabiting these hard structures and artificial -- Maybe Lela can --

MS. SCHLENKER: Good question, and I think we were just talking with the NOAA folks about that, with their trap survey, and whether or not -- Because they have GoPro cameras on those as well, and whether they anticipate catching lionfish and that sort of thing, and so that's -- We heard -- You know, I guess my understanding would be that probably that would be the most effective

way to sample lionfish, potentially, other than eDNA, and it would be traps, in terms of I'm thinking about the gears that have been suggested to us, and so that's a concern.

One thing that I guess -- Like so my background as a biologist, thinking about our company is committed to this increase in biodiversity, and so that's one thing I've, you know, brought up, is it's not always a good thing to see the number of species go up, and so that's something we need to take into consideration, is just are we facilitating -- Is that going to facilitate the movement of species further north or --

MS. WOLFE: You said that the traps would be available through NOAA, and which program is -- Is that the observer, or is that the Southeast Fisheries Science Center, or --

MS. SCHLENKER: This is the SEFIS, the Southeast Fisheries Independent Survey, or SERFS, and so that's not a part of our fisheries monitoring plan, since we haven't determined yet what that looks like, but, because it's sort of opportunistic, and they were expanding that survey anyway, through the lease area, and we worked with them basically to sort of say, if you're going to do this, it would be really cool to look at like what changes we're going to see specifically on turbine locations and on any sort of structure that is already there, versus outside the lease area, and they were interested in that question, and so it's not really an official part of the monitoring plan, and it's just kind of opportunistic collaboration, I would say.

MS. WOLFE: Okay. Thank you.

MS. CROWE: Seth, would you like to unmute and go ahead?

MR. THEUERKAUF: Sure. Thank you for that, and apologies. For some reason, with my system, the raise-hand function seems to be popping up and then going away, and so, right now, I'm in a phase where it's not there. Anyway, we have moved on a little bit from the conversation, but I did concur, at least in the BOEM perspective, of what Lela had shared, and there was a question about sort of the options that are available for decommissioning, and there are really, you know, as policies and regulations stand, three main options, one being in terms of the full decommissioning of a facility, and that would be, you know, removing all infrastructure down, you know, fifteen feet below the mudline. That's one option that is possible through our regulations.

The other is potential future applications for repowering an offshore wind facility, or sustained operations of the, you know, infrastructure as it stands, and then the third option is that option of potentially retiring in place, you know, in terms of proposing specific infrastructure to be retired in place within a decommissioning application, and so I just wanted to concur with what Lela had shared on the BOEM perspective on policies and regulations as it stands. Thank you.

MS. CROWE: Brendan and then Kevin.

MR. RUNDE: Thank you, Madam Chair. I wanted to, really quickly, return to the lionfish question, for Jordan, just to fill in a couple of gaps. So the SEFIS program, or the SERFS program, sets like close to 2,000 traps a year, all of which have two GoPros on them. They catch fewer than ten lionfish in the traps, but they see on the order of a thousand on video, and so they don't trap very well at all, but they move very slowly, and obviously are very distinctive visually, and so they're easy to spot on those videos, and so it sounds like SEFIS is going to spend a couple of days

in the Kitty Hawk lease, maybe this August, and my guess is they probably won't see any lionfish there at this point, because there's not any hard structure, but, a few years down the line, once there is hard structure, it, of course, will be really interesting to see. As an aside, I've heard some anecdotal reports of lionfish off of Virginia, and so allegedly they can't overwinter north of Hatteras, and we'll see.

MS. CROWE: Kevin, I think you had your hand up, and then Paula.

MR. SPANIK: That's essentially exactly what I was going to say. Most of those detections, for lionfish and other invasives, would be from the video, and so, with monitoring, I would really recommend going with the video, other than the trap, for just ease of detection and for manpower that it would take to use either of those two gears.

MS. KEENER: Thank you. I believe it was Anne Deaton, and I may be wrong on this, that discussed, or mentioned, that the lionfish were attracted to the heat, heat generated in the cables, and is that correct? So it's not just the hard structure that they're attracted to?

AP MEMBER: They're following those cables, and they follow the heat, and then they wind up at the structure, because of the inter-array cable.

MS. CROWE: Go ahead.

MR. KATHEY: Kathleen, I see you've got "lionfish or invasive fish monitoring", and would it be appropriate to have just "invasive species monitoring", because you could have inverts. If you've got ships that are discharging ballast water, with inverts that would be normally in a soft environment, not having anything to attach to, then they wouldn't be viable, but now you've created that viability, and that might be -- I think that would be something worth tracking.

MS. CROWE: Great point. Wilson and then Brendan.

DR. LANEY: I think Nathan had mentioned, Scott, the tunicate as an example of one that they were thinking about, and this is a question probably for Myra. Myra, at one point in time, do you remember that Bill Kelley was working on a lionfish-specific trap, mostly directed at the Florida Keys, I think, and do we know if he ever did complete that design and get it certified? No? Okay. I just thought I would throw that out there, and mention it, and so there was some work being done on a trap that was designed specifically for lionfish.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: A couple of quick things. One is that a paper recently came out from South Carolina DNR and the Southeast Fisheries Science Center on the invasion of lionfish in the South Atlantic and now it appears, based on the relative index of abundance, to have plateaued a few years ago, 2015 to 2017, and has now come back down a little bit, and so check that out. I can send that around, if folks are interested.

Then the other thing I was going to say is that, in addition to this invasive species monitoring, the fisheries monitoring plans, and all of the data collection that will happen at these windfarms, it will be interesting, from a range expansion perspective. We know that artificial structures in the

ocean do facilitate range expansions, for example of tropical species at their latitudinal boundary, and so the creation of these structures may beckon those tropical and subtropical species further north, or even hasten what might happen in the wake of climate change anyway, and so I don't know that there's action item here, but it will certainly be interesting to see how long it takes red snapper, for example, to show up in the Kitty Hawk, and, if and when they do show up, to what degree will they colonize and hold on, and so keep an eye out for that.

MS. CROWE: Matt was next and then Paula.

DR. JOHNSON: With respect to the lionfish trap, Steve Giddings, from the National Marine Sanctuaries, ONMS, has recently patented one, as a matter of a fact, and it's operational, and it's a pretty good device.

MR. MEDDERS: I'm going to shift gears a little bit from the invasives and lionfish, but I'm sitting here thinking about the rigs to reefs program, and it may be implied, and it may have just not have been said, but I'm thinking, if they're redeveloping the sites, that's one thing. If they're totally decommissioning to leave in place, and I know we have experience with this, because several of you all have heard me talk about the Beaufort Navy towers that are offshore of Georgia that the Navy is supposed to be doing this to, like a reef, decommissioning to make reefs out of, and we permitted, through the Army Corps, reef sites around them, and so it seems, to me, that a state is going to have to be -- Or someone is going to have to be involved to take over those reefs, to permit them, to -- You know, when they move forward, if the windfarm company pulls out completely, and someone has to take responsibility for it in the permitting process.

The way our permitting -- The way our permit with the Corps works, and I understand that it's different in different states and different Corps offices, but we are renewing that permit on a -- It's a programmatic general permit, renewed every five years, and so then we're responsible for those reefs, and the monitoring and all that, and so it seems, to me, that something -- That there needs to be some coordination between the potential states for the decommissioning process, and are they even interested in those artificial reefs, potentially, and I don't know, but it just -- I just haven't heard that mentioned, and that's what was playing through my mind.

MS. CROWE: That's actually a really good point, Paul, and maybe we need to mention something about that there needs to be some type of coordination with states when decommissioning occurs. Paula is next, I think, and then we'll go to Wilson again.

MS. KEENER: Just briefly, I don't know if anybody is looking at some common sampling strategies, or monitoring strategies, among the lease areas, but that, I think, is a huge opportunity for, you know, science knowledge overall, just to see, you know, what is the overall effect, and are we beginning to see range shifts, or range extensions, in species, and so I don't know. Is anybody looking at something like common sampling?

MS. SCHLENKER: I will be quick, but, yes, and so both the RWSC, the Regional Wildlife Science Collaborative, and ROSA, Responsible Offshore Science Alliance, are both working on that question, and so I've recently joined the RWSC Data Governance Subcommittee, and that's a big task for that group, is to think about creating like a data ecosystem, so that it's possible just for folks, even at a very basic level, to see what sampling is being done where and then eventually I think the group is working towards recommendations for data transparency and data sharing, but

they're starting basically with just a map that shows, you know, so-and-so is doing acoustic tagging of these species in this area, et cetera, so that would be open and accessible. Those meetings are open to anyone that wants to join, and so I recommend getting on their email listserv, if you want to be inundated with webinars.

DR. LANEY: Okay, and I was jumping back to what Paul Medders just said, and I would ask our resident attorney if we need to address the ownership question, and so, I mean, Paul's point was an excellent one, and let's just -- Again, we're looking a long way down the road, and it's a long way off, but so you decommission the facility, and the owner decides it would be beneficial to request that part of it be left -- Part or all be left as an artificial reef.

Then somebody, as Paul pointed out, is going to have to permit the artificial reef, and so there is an ownership question here. At some point, would -- So should there be a provision that says, if the turbine facility, the wind installation, the wind generation facility, is going to be converted to an artificial reef, does there need to be some sort of formal ownership transfer as well, and, in a lot of cases -- So then this is where, to me, the public trust doctrine starts coming into things, and, you know, if it's a public trust -- If it becomes a public trust resource at that point, then does there need to be some sort of formal transfer of ownership document that comes into play at that stage of the game?

MR. THEUERKAUF: This is Seth, and I was trying to find the raise-hand function, and I'm happy to wait, if the conversation in the room is continuing, but I would like to jump in at some moment.

MS. HOWINGTON: Go ahead, Seth.

MR. THEUERKAUF: Okay. Thank you. I wanted to share -- So, in terms of the specific regulation, BSEE's regulation, related to being able to retire in place infrastructure, the way that regulation is written, and it's 285.909. Section (b) of that regulation talks about how basically, if there's authorization for facilities to remain in place, that that former lessee remains liable for eventual decommissioning of that facility unless they provide evidence that another party has assumed responsibility for financial assurance, and so, basically, in any case where there's a desire to retire that infrastructure in place, that still -- You know, as it would stand, that lessee would remain financially responsible for that infrastructure, unless there's a sort of transfer of ownership that happens, and there's documentation that that new owner, or new party, has financial assurance for that infrastructure.

MS. CROWE: Wilson.

DR. LANEY: A follow-up then, Madam Chair, and so, if that is the policy, do we need to think about the fact that that might then discourage the transition of facilities to artificial reef use, and so there would be a detrimental impact to the public in that case, to the angling public anyway, but also possibly to the ecology of the area, because, as we noted earlier in our discussion, you've got soft-bottom types of habitats, and you're providing a hard substrate now, and so you're creating an additional community, and I know, Paula, based on your previous comments, and Casey's comments, I think, it's still up in the air with regard to whether there is a long-term benefit or a long-term detrimental impact, but I'm just thinking about public benefit here, and public use, and so I'm wondering if we should suggest that BOEM might want to take a look at that, and, again, I think it would go back to what Seth said.

The lessee would have to document that a transfer of ownership has taken place, and then the state, or whoever took over the responsibility for the materials, then would relieve the leaseholder the responsibility, and is that something, Seth, that BOEM would buy-off on, if the company could demonstrate, you know, overwhelming public benefit?

MR. THEUERKAUF: Yes, and so the way the regulation is written, it has more to do with just assuring that there's financial assurance in place for eventual decommissioning of that piece of infrastructure. I think there's a lot of devil in the details here, in terms of how, you know, this process would exactly work out in practice, and we haven't yet, with an offshore wind project, kind of worked all the way through this process, and it's been highlighted as well that, you know, there is potential for the regulations to change in the next five, ten, fifteen, twenty years.

You know, as they're written now, it's really focused on just ensuring that, you know, liability remains on someone's shoulders for the eventual removal of that infrastructure. I think there's a lot of detail that would have to be worked out in any proposal to keep -- You know, to keep materials in place, and that's going to come out of consultation, as it relates to what that habitat value is in the future of any infrastructure in the water, and so it's a complicated -- It's a complicated answer, and it's something that would have to be evaluated in the future, but I think that there are ways to make it work, but, you know, as the regulations are written, they're really focused on making sure that there is, you know, financial assurance and it doesn't ultimately put the burden of, you know, potential future removal of infrastructure on the federal government, on, you know, federal taxpayers, to remove that infrastructure.

MS. CROWE: Paul, did you have a follow-up?

MR. MEDDERS: Thank you, and I just -- Wilson, this might explain a little, and like, if this was offshore of Georgia, and they said we want to give you these decommissioned windfarms, and this is the way that we handled the Navy towers, and this is the way we've handled other things, but we would have a contract with them to say we will take ownership of them when they're lying on the bottom, and they're finished, and everything is done, and so it's as to we're not --

The state is not, you know, taking on that burden, right, and, I mean, we do that all the time with vessels, where we'll buy a decommissioned vessel from someone, and they're reefing it for us, and our contract is written up to say you're responsible for getting it out there, in case they sink it in the channel somewhere, and it's their boat.

It's our boat when it's on the bottom, where we agreed to have it, and I think that would be the difference in the way that -- If I was -- If that was proposed to me, that would be the way that we would handle that, I think, and then, from there, once it's totally decommissioned and on the bottom, we're assuming that there is stipulations, some language, in those core permits that always makes everyone twitchy, that says, if the reefs stop functioning, you have to remove it or whatever, and I'm never sure what that means,, because all we say is, yes, they're functioning great, because the prospect of removing something from the bottom of the ocean would be cost-prohibitive for us, but, once it's on the bottom and there to be left as a reef, that's -- I think that's how we would handle it, if that helps explain.

MS. CROWE: So, Paul, the ones that you're referring to in state waters, are they within that three miles?

MR. MEDDERS: None of our artificial reefs are in state waters, except for one, or maybe two, beach reefs, and everything is in federal waters, or in the EEZ, actually, and not really in federal waters, and so that's why that Corps permit -- I think that's why the Army Corps is involved, but we do -- I mean, we are in charge of doing them, and they are our reefs, but they are not in state waters.

MS. CROWE: Okay. That makes sense. Okay. Matt.

DR. THOMPSON: So, as a former recovering BOEM employee, I was -- I worked extensively with the artificial reef programs in the Gulf of Mexico, and, essentially, the final step is exactly what he was describing, is liability transfers from the owners to the state, and so, once it's at that point, they can walk away, but it's, again, once it's on the bottom, where it's supposed to be, as they agreed it should be.

MS. CROWE: Any final comments?

MR. RUNDE: This is no longer germane really to the topic at-hand, but, just to help Paula sleep better at night, on the topic of research in various wind energy areas dovetailing with each other, it may soon be a requirement, or a stipulation, in the construction and operation plans for these projects that at least some of the research that's going on under the headline of the fisheries monitoring plan meshes with the federal surveys that also occur in that area, and so, if that's the case among projects, then you have some reciprocity of methodology, or data standardization, and I yield the rest of my time to happy hour.

MS. HOWINGTON: One comment from online. Whatever you're saying that Anne Deaton said, she wants us to know that she didn't say that. She just sent us a text. That was not an Anne Deaton quote, and I don't know who it came from.

MS. CROWE: I actually think it was Cindy Cooksey that was talking about that.

MS. KEENER: It was. Thank you.

MS. HOWINGTON: So I think -- Do you want to return to the action items, or do you think we're good for this conversation, and we can start with Pace in the morning?

MS. CROWE: I think we're good. Do you think we're good?

MS. HOWINGTON: I see heads nodding for these are the correct amount of action items for us to integrate into the energy policy in regard to decommissioning and these conversations we've been having this afternoon. Heads nodding.

MS. CROWE: Heads are nodding because they want to go to happy hour.

MS. HOWINGTON: Yes, they want to go to happy hour. You are correct.

MS. CROWE: Okay, and so that is going to conclude today's session, and we're going to reconvene tomorrow morning here at 9:00, and we will start with an update from NOAA Fisheries Habitat Conservation Division on their EFH consultations. We'll see you all here tomorrow.

(Whereupon, the meeting recessed on April 22, 2024.)

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APRIL 23, 2024

TUESDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Crowne Plaza, North Charleston, South Carolina, on April 23, 2024, and was called to order by Chairman Stacie Crowe.

MS. HOWINGTON: Good morning, everyone. It is 9:01 on Tuesday, April 23. Please make it to your seats. Thank you.

MS. CROWE: All right. Good morning, everyone. Welcome back. We're going to start day-two of our spring meeting. Okay. That was not a false alarm. We are going to get started. Today we're going to start off with Pace Wilber. He's from NOAA Fisheries Habitat Conservation Division, and he's going to give us an overview of Southeast EFH consultation activities.

MR. WILBER: Good morning. I give these presentations kind of every once in a while, and I know that a lot of the folks from the council, or from the AP, have heard bits of this before, and so I'm trying to kind of quickly rehash the stuff that I go through in every meeting, but that always adds something kind of new, and hopefully I've achieved that goal today.

This is our basic map showing where our field offices are located, and, obviously, three of the field offices are very much focused on habitats that are managed by the South Atlantic Council, through the EFH program, are at least influenced by the council through their EFH program. Since I last presented this, we have two new hires, or actually three, but the two new hires are Anne Deaton and Lisa Wickliffe. They've been added to our EFH conservation team, and Kevin Mack, who was a contractor working with us, he's been added to our group too, and he still does a lot of fish passage work, but he also is part of the EFH conservation team.

The one thing I will note is, when you look at the EFH team down there, there's a lot of asterisks in there, because a lot of these folks come with strings attached, as to the certain kinds of projects that they can really, truly work on, and so we really only have two people on the EFH team, Jose Rivera and Jordan Wolfe, who are pretty much free to work on almost any type of project in our region.

My one slide on fish passage, just to remind everyone that our group is responsible for administrating the Federal Power Act for the Southeast Region of NOAA Fisheries. Our territory is Texas to North Carolina. We have eight priority watersheds, and seven of those priority

watersheds drain to the South Atlantic Fishery Management Council waters, and why this is important for the South Atlantic Council is because a lot of your fish food is growing up inside those watersheds, and it empties out into the estuaries.

We also have a coral conservation team that we've talked about before. Most of their work is in the Caribbean, but they also do work in southeast Florida. The focus of that group, in the last couple of years, has really been on treating corals affected by stony coral tissue loss disease and then also working with researchers on targeted activities to try and better understand how to conserve coral, not only through treating corals that are affected by diseases, but also corals that are affected by dredging activities. If you look at the research section of that, a lot of that focuses on sedimentation and how sedimentation affects corals, and that's all relevant to our major project in southeast Florida, which is Port Everglades, that I will talk about at the end of the presentation.

This is just my quick recap of the Magnuson Act, and you all saw this slide before, but, basically, in a thirty-second speech, the Magnuson Act has kind of three components to it, and the first being that federal agencies are required to consult with the National Marine Fisheries Service for any activity they undertake that may adversely affect essential fish habitat, and it's really largely up to the council to define what is and is not essential fish habitat, and that's something that this AP has had a large role in historically and will continue to have a large role in.

Once the consultation has started, if we identify activities that we believe will adversely affect EFH, we are required to provide measures to conserve that EFH, or to minimize or avoid the impacts, and then, lastly, a federal agency that receives those EFH conservation recommendations is required to report back to us, within a prescribed time period, how they are going to adopt or not adopt the recommendations we made and how they're going to fulfill their obligation to conserve essential fish habitat as they move forward with that particular activity. As you can imagine, that can get a little bit contentious at times, but, you know, 95, or 98, percent of the time, it's a very willing partnership, and it moves very smoothly.

Just one quick slide, and, you know, we have multiple authorities that we operate under. In addition to the Magnuson-Stevens Act, we operate under the Fish and Wildlife Coordination Act. That's an authority that's been with what was the National Marine Fisheries Service, when it was inside the Department of Interior, way back before the National Marine Fisheries Service was created, and the same is true for the Federal Power Act. We've had that authority to prescribe fishways since like the 1920s, and it's an authority that has migrated with us as we've moved from one department to another.

Arguably, the Federal Power Act is our strongest authority within NOAA Fisheries. The Federal Energy Regulatory Commission must adopt our fishway prescriptions. They have no authority to modify those prescriptions or to determine whether the prescriptions should be included in a license. If we issue it, it has to stay in the license. The only way they can really change that is to go to court and say that our fishway prescription was illegal.

Then the Magnuson Act, you know, is the newest of the three authorities that we typically operate under, and we always kind of point out that the Magnuson Act, even though it gets a huge amount of attention, did not add to or subtract to our authorities under the Fish and Wildlife Coordination Act and the Federal Power Act, but what it really did was provided a focusing tool for how to better administer those authorities.

Okay, and so what I was going to talk about today, that I haven't talked about before, are the things that are called the habitat policies, or the council policies, and I think you guys talked a little bit about those a little bit yesterday, and so what I wanted to do was kind of give you all a feel for how they really play a role in consultations, and, to sort of have that discussion, we have to sort of do a little bit of history and recognize that the council's EFH program is really based upon two foundational documents, both published in 1988, and one is called the habitat plan, and it's got a big, long title, but everybody refers to it as the habitat plan, and it discusses sort of the ecology and the biology of the species in the area and what kind of habitat affinities they have, and it talks about how those habitats might be conserved, and protected, you know, in various situations.

That habitat plan, over time, sort of morphed into the Fishery Ecosystem Plan, and the Fishery Ecosystem Plan has undergone a couple of different versions of it, and, you know, I'm pleased to hear that the latest version of it is about to return to the web, you know, because it's an important plan to us, and one that we reference pretty regularly in our consultation work.

The other foundational document is -- It has a big, long title, but, you know, everyone basically refers to it as the comprehensive amendment, and that is where the actual EFH designations occur by the South Atlantic Council. Now, there's a couple of little oddball things, you know, some fishery management plans that weren't around at the time of the comprehensive amendment, and so they sort of bring their own EFH designations to the table, through those fishery management plans, but, you know, most of the EFH designations are in the comprehensive amendment, and then those EFH designations were tweaked, through what used to be called the Comprehensive Ecosystem-Based Amendment 1, or CEBA, CEBA-2, and then all of that stuff is kind of clarified in the EFH User Guide, and so that's sort of basically, in a nutshell, the foundational documents to our current status for EFH within the region.

The question always comes up, or often comes up, is to like, well, what are these habitat policy statements, and why do they exist, and I will be the first one to admit that I think the word "policy" was perhaps not a good word choice, you know, when it was chosen, but it's an old word choice. Those policy statements actually are inside the habitat plan, which was that 1988 document, and so you can go back to that 1988 document and find the discussion of the NEPA policy statements, and you can find the initial iterations of several of those policy statements are all in there, and that's what they're called, you know, in that document.

The question is why are they in that document, and I'm not expecting you guys, obviously, to read all that stuff, but, you know, there's regulations that determine what the contents of a fishery management plan are, and, in those regulations, there's a section on mandatory contents, and then the large bits of text there describe those mandatory contents.

Basically, they're telling the council that, when they designate EFH in a fishery management plan, or through a comprehensive amendment to a fishery management plan, they have to identify ways to conserve EFH, and there is actually some specific topics to discuss in the middle of that first bit of text up there, and we'll kind of get to that in a second. Anyway, the reason why those plans exist, or those policy statements exist, is because they're required components of fishery management plans.

Okay. Now this little table at the bottom identifies the current policy plans that the council has, and the ones with the stars next to them are the ones that debuted in the 1988 habitat plan, and there's some abbreviated titles there that don't necessarily do the actual policy statement justice, and so that one there on beach nourishment actually also includes large-scale dredging projects and other things, and it's not just limited to beach nourishment, but, for space reasons, it's kind of shortened there.

My next question is are these the right policy statements to have, and you can look at that in a lot of different ways, and I will show you my way of looking at it. Now, on the left-hand side is an examination of the EFH consultation requests that we had during fiscal year 2023, and so we had 718 consultation requests, and the pie chart breaks those 718 consultation requests out based upon the nature of the activity that the consultation request focused on.

There is sort of three parts, or three slices, of that pie that I want to talk about. The first one is the big orange one down at the bottom, and that's marinas and docks, and so it's a basic pie chart, and more than half of the consultation requests we received in 2023 were about modifying or constructing a marina or a private residential dock, you know, and dredging is the next most common category up there, and then the thing with the "SS" in there, that's my abbreviation for shoreline stabilization. Right now, shoreline stabilization does not include living shorelines, and that's a separate little slice of the pie there.

Anyway, marinas, dredging, or docks, dredging, and shoreline stabilization, and, if you just look at it from total numbers, that's where we get most of our consultation requests and so you can kind of ask, well, do we have policy statements that cover those, and you know, from the previous slide, we have a great policy statement on beach nourishment, and that includes dredging. There is no policy statement on marinas and docks, and there is no policy statement on shoreline stabilization.

Now, let's go to the pie chart on the right side there, and that's the same 718 projects, but, instead of just totaling projects, we've now assigned an acreage to each one of those projects, and the pie chart now is based upon the acreage, and we had 17,362 acres that we consulted on in fiscal year 2023, and so lots of acres, and that's actually a little bit of a low number. We usually are above 20,000. You know, we have these data that go back to 2014, and we usually are above 20,000 acres.

You kind of look at the relative slice, the large slices there, and now, all of a sudden, artificial reefs is huge, and that was a little bit of an anomaly, because artificial reefs tend to be on ten-year permit cycles, and last year was the year that a lot of the artificial reef programs came in through their ten-year renewals.

Lots and lots of acres in there, and they're specified on the entire area that's managed as an artificial reef, and not the actual physical structure that's inside the reef, and there are some papers in the literature these days that try to do that crosswalk between the total area managed and the actual size of the physical structure in there, and it's about one one-hundredth of the area is actually taken up by structure, but, when we do the consultation, we consult on the entire area and not just on the footprint of the structure.

Dredging is another huge area, in terms of acres, that we consult on, and beach nourishment is another huge area, and shoreline stabilization is relatively small, but it's still holding its own, and

the things that have completely disappeared from the pie chart on the right are the marinas and the docks. Even though it's 60 percent of the consultation requests we go through, it's less than 5 percent of the acres, and so, if you want to talk about do you really need a policy statement on marinas and docks, well, if you're focusing on what's important, and you're using acres to tell you what's important, well, you don't really need a policy statement on marinas and docks. What you might need is a policy statement on artificial reefs, and we'll see, in a moment, that you actually do have a policy statement on artificial reefs, and that's a good thing for you all to have.

The one thing that does kind of still stand out is that, you know, shoreline stabilization is an activity that we frequently consult on, also in terms of acres, and it does not have a policy statement, and that's kind of just a reminder right there, is that artificial reefs, check.

Beach nourishment and dredging, check, but we don't have one for shoreline stabilization, and the other policy statements are not so much project-oriented as they are process-oriented, and many of those also go back to the original regulations that identify the kinds of things that the regulations thought that it would be valuable for the council to have policy statements on. That is sort of my quick summary of the policy statements. The policy statements are very valuable to us, especially when we do consultations on dredging, artificial reefs, and beach nourishment.

Okay, and so now we're going to quickly dovetail into what are the major projects in the region, and I think this is a component of the report that you all are putting together. This breaks it down by state, and I added the Caribbean, even though it's outside the South Atlantic Council's jurisdiction, because it's inside my jurisdiction, and I want to keep the slides kind of coherent, but the big projects in North Carolina are, obviously, the Kitty Hawk and Carolina Long Bay offshore wind projects. You heard some about those yesterday.

The Wilmington Harbor navigation improvement project, that's a relatively newish kind of project, and we have a lot of staff that will begin spending time on that effort in the next year, and then we're working with the Army Corps of Engineers, and others, to evaluate the effectiveness and environmental windows for minimizing impacts to marine resources from dredging projects. There's been two lawsuits on that, and the Corps is now going through a process to try and examine the windows more carefully and avoid future lawsuits on it, and let's just leave it at that.

In Charleston, in South Carolina, the major projects are the monitoring for the Post 45 dredging, and that's kind of tidying up now, and we just got the final report for the artificial reefs they built as mitigation for the Charleston Post 45. We haven't had a chance, really, to look at that final report yet, but we're pretty optimistic that South Carolina DNR has done an excellent job describing what they saw out there and making recommendations for future projects, and so we're very happy to get that report.

Then, for the folks that are living in Charleston, the Mark Clark Expressway is back. Twelve years ago, we sent elevation letters, to try and stop the project, and we've had various conversations to address the issues identified in those elevation letters, and now it's back on the table, and we'll kind of see where it goes, but that is a fairly big project that could take up a lot of our time in the coming year.

In Georgia, the Savannah Harbor Expansion Project, or SHEP, the monitoring for that is among the most detailed and complicated monitoring projects that I've ever seen for dredging anywhere

in the country, and it's a really great effort, and it's now kind of getting into the post-construction phase, and it's been a challenge to kind of keep up with that, but it's been a really big issue, and then the evaluations of environmental windows is part of the lawsuits in Georgia as well as North Carolina, and so that's listed there. We'll talk about Port Everglades in a moment.

Just a real quick recap on the wind stuff, and this BOEM's nominal timeline for how a wind project proceeds, from the auction, where the lease is first, you know, basically acquired, to putting actual steel in the water, on the right-hand side, in the red, and so it's basically an eight-year process, from the auction that they described, and their nominal timeline.

This next slide has some notes on it, showing you where the projects in South Atlantic waters are, in terms of how far down the timeline they are. Kitty Hawk and Carolina Long Bay, the auctions occurred. Kitty Hawk's auction occurred in 2017, and Carolina Long Bay in 2022, and Carolina Long Bay is the simplest one to talk about, and they're now just sort of starting their site analysis plan, and so that big circle in the middle shows you where Carolina Long Bay is, and, if you go through the rest of the timeline, they're a good handful of years away before we'll start seeing, you know, EFH assessments and draft NEPA documents and stuff like that for Carolina Long Bay.

Kitty Hawk has been broken up into projects, Kitty Hawk North and Kitty Hawk South. Kitty Hawk South is kind of still in the middle of its site analysis phase and I don't know how quickly it's moving through that phase. You know, the fact that it's there a good six years after the lease, or, actually, more than that, and seven years after the auction occurred, and it kind of shows that, you know, Avangrid is pushing that project along somewhat slowly, and then on the right side is where Kitty Hawk North is.

Kitty Hawk North is sort of in the early parts of having its COP reviewed by the environmental agencies. That COP review is necessary in order for BOEM to allow Kitty Hawk to go ahead and begin construction. In my estimate, they seem to be about halfway through their environmental review process, and, by focusing on the preapplication stuff, but the actual environmental reviews are still a little bit down the road.

You can kind of see that a little bit in this slide. This slide focuses mostly on Kitty Hawk North, and Kitty Hawk North is actually west of Kitty Hawk South, and I think they should be called Kitty Hawk East and West, but, you know, for whatever reason, Avangrid calls them North and South, and then there's another wind project, CVOW, that's only about twenty miles north of Kitty Hawk, and so a lot of what gets discussed at CVOW has relevance to what goes on at Kitty Hawk, especially when you talking about reference sites for monitoring plans, you know, and things like that. CVOW does have its final COP approval, and it is -- I believe they're already putting steel in the water at CVOW. If they haven't started putting steel in the water, then they will begin doing that very soon.

On the upper-right here is the current schedule for Kitty Hawk North, and so you can see that the EFH assessment is supposed to really be a 2025 activity for us. About ten months from now, we should be receiving the EFH assessment and then wrapping it up with the EFH consultation recommendations by December of 2025. The NEPA process is kind of sprinkled in here, and they will do their final EIS, and their ROD, in 2026, and I think, right now, they're planning to put steel in the water in 2029.

Port Everglades, this is a project that the council has gotten the reports on sort of occasionally, and I think they will probably get more reports on it, you know, in the coming year, and Port Everglades is a really large project. We've been involved in this one for over twenty years, and it's got 287 acres of coral reef and hardbottom habitat inside its current footprint that we're examining for impacts.

Inside that footprint is habitat for all seven of the ESA-listed species of corals, you know, in the Southeast, and five of those seven species are actually present in significant numbers inside the Kitty Hawk sedimentation zones. Queen conch has recently been listed as threatened under ESA, and there is a very large spawning aggregation of queen conch that actually intersects the Port Everglades impact footprint.

Now, as far as what the footprint is, there's a lot of debate on that, and we're using a scenario, and it's called Scenario 2 by the South Atlantic Council, to determine the acreages that are listed there in that table for impact, and you can see that that impact footprint also overlaps, you know, the queen conch aggregation area.

One of the ideas that is being examined closely now is to set up essentially a real-time surveillance system of the dredging activities. Think of the dredging occurring in the channels, and all of those stars representing fixed monitoring stations, with a zillion bits of technology out there that are going to be reporting in real-time to an artificial intelligence system that's going to digest that data and identify whether or not the dredging is potentially causing impacts to corals around it.

One thing I will note is that the hashed area, that's now at the bottom, that is labeled "Naval Exclusion Zone", that's an area where the Navy has put special exemptions in place to limit environmental reviews, and environmental activities, in that area, because those exemptions are necessary to protect the Navy's training activities, and so one of the problems we're having with Port Everglades, and its adaptive management plan, is that we need to put some buoys in that naval exclusion zone, and the Navy is very interested in how those buoys are going to operate, whether they're going to generate anything that interferes with Naval activities inside that exclusion zone, and we're kind of having that conversation continuing with the Navy, and we'll come up with a solution, but, you know, it is something that takes some effort to do.

In addition to the footprint of the project that is presented here, there is four additional areas that the Fisheries Service believes might be impacted, and those are the areas north of the channel, east of the channel, south of the channel, and this nearshore hardbottom area over here that's in blue, and there is lots of oceanographic reasons why those areas should be included in the impact footprint, and we're working with the Army Corps now to see if they will include those areas in their impact footprint. If we stay on the current schedule, we'll be doing the biological opinion, and the EFH assessment, or EFH reviews for this project, during the fall and early spring of 2025. All right, and that's all I've got, and so, if there are any questions, I would be happy to answer them.

MS. CROWE: Thanks, Pace. I have one quick question, before I'm going to go around the room, and I was curious about the acreage of the artificial reefs. Does most of that acreage -- Is it just Post 45, or were there other artificial reef projects?

MR. WILBER: So there's many other artificial reef projects, and so, in Florida -- Florida's artificial reef program, while administered at the county level, or the state level, is actually very well organized, and so the counties go out, and they have to get ten-year renewals for their permits, and so, depending upon what county it is, and what artificial reef management areas -- Some of those areas are a couple hundred acres, and some of them are like a thousand acres in size, and they have some number of structures within those areas, and so it's all of the ones that we received last year, and, I mean, I could get you a list of each individual one by acreage, but it's not just the Post 45 stuff.

MS. CROWE: Okay. Thank you. Brendan, I saw your hand go up, and then I know we had several others.

MR. RUNDE: Thanks, Pace. Could you go back to the slide with the Kitty Hawk wind area, please? Can you talk about what was done for the cable export route, as far as assessment or consultation, and then what happens if Kitty Hawk North actually cannot take power along that route, because they're unable to form a power purchase agreement with the entity to the north?

MR. WILBER: Those are better questions for the Avangrid people that were here yesterday, but so, right now, Kitty Hawk has not progressed to the point where it has given us a detailed, or even a draft, EFH assessment, and so I can't really say what they've done to examine that cable route, other than to note that it is covered a little bit inside the public version of the COP that was released and posted in 2021, and so they have grabbed samples, and they've done backscatter, sidescan sonar, and stuff through that, and we have those data.

MR. RUNDE: So that figure in the lower-right, that shows a smattering of different-colored points along the export route, that's their information and not yours?

MR. WILBER: Correct, yes, and the pictures are from their report too, and we have not collected our own data, but we have manipulated their data in a way that we felt would be more useful to us, and, you know, we came up with a different map, but it's not a strikingly-different map. You know, the real issue, for us so far with Kitty Hawk, has been, you know, how much surf clam habitat the area might represent, because surf clams -- We're in the southern kind of end of their species distribution, and the question is are they concentrated enough to become a fishable population out there, and right now they're not, but CVOW shows some signs of having a fishable population of surf clams, and, like I said, CVOW is just twenty miles to the north.

We went through the Avangrid data and essentially took a whole bunch of indicators of fishable habitat and kind of massaged them together, to the best we could, because the sampling gear isn't really well suited to looking for *Spisula*, but, you know, so we've done a lot of our own analysis, using their data, but, you know, it can only get so good with their data.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thanks, Pace, for another excellent presentation. I really appreciate the details that you provide to us and the depth to which you go in these. If it's not too much trouble, could we scroll back to the river slide, the fish passage slide, real quickly, and let me ask you -- Yes, that one there, with all the dots.

I wanted to make sure that I knew which ones were a priority, and I noticed that the Neuse is on the list, and I wanted to make sure that you, and everybody around the table, knew that -- I just found out, two weeks ago, that it was added to the Sustainable Rivers Program, in the fall of 2023, and there is work going on, a collaboration between The Nature Conservancy and the Corps of Engineers, to look at flows coming out of Falls Reservoir and try and optimize those for diadromous species downstream.

The other thing that I wanted to mention to you, because I don't know that those of us in the -- Well, those of you I have to say now, and I keep forgetting that I'm not a fellow Fish and Wildlife Service staffer with Tripp, but those in the regulatory review community I don't think have had a formal opportunity for comment yet, but the City of Raleigh -- If you recall, I think we had some discussions, Pace, about ten years ago, was proposing a white water park below the falls, and that is apparently back on the table again.

They're doing some master planning, and so there have been some early discussions about the fact that, since they initially proposed that, ten years ago, there have been several additional listed federally-endangered species in the river, one threatened and one endangered, and so the Carolina madtom is there now, and the Neuse River waterdog, which are not species of particular interest to the council, but, when you combine them with Atlantic sturgeon, which already has critical habitat which has been designated since that original proposal, then that's something we all probably ought to take a look at.

Our concern, at the time, ten years ago, was for the alterations they were proposing to make a white water park might not be compatible with spawning habitat, especially for American shad and then for nursery habitat for American eel, were the two species we were looking at, and so you and I can talk about that some more offline. Then, with respect to the Savannah, is there any update on New Savannah Bluff lock and dam and what sort of passage, if any, is supposed to happen there now? Then I have another question after those.

MR. WILBER: All right, and so, just for everybody's background, the Army Corps of Engineers is required to provide passage at New Savannah Bluff lock and dam, as mitigation for dredging impacts from the Savannah Harbor expansion project and how those dredging impacts affected habitat used by shortnose sturgeon and, later, Atlantic sturgeon, that are in the estuary.

We were -- We and the Army Corps of Engineers were progressing really well to putting passage in place at New Savannah Bluff lock and dam. There was a concrete deadline in the biological opinion, and we were clearly going to meet that deadline. Then, all of a sudden, we got sued by the State of South Carolina, who didn't want to see anything happen at New Savannah Bluff lock and dam, and then the City of Augusta joined that lawsuit, and there was an injunction put out by a judge that basically stopped construction of the fish passage there.

Long story short, basically, that initial -- One line of reasoning that was part of that initial injunction was appealed to an appellate court, and the appellate court found the original court decision to be unsatisfactory and referred the item, the matter, back to the original court, and there it's been kind of stuck for a while, and, you know, maybe some with more legal knowledge than I have can maybe explain better why it's stuck, but the Army Corps though is continuing to try and find a way to provide passage at New Savannah Bluff lock and dam that is respectful of the

concerns raised by the lawsuit, and respectful of the judge's original decision, and they may, or may not, be able to have a way forward, you know, soon, but that's really about all I know.

DR. LANEY: Okay. Thank you. Then if you can scroll back to the Port Everglades slide again, and I had a question that may be somewhat off-the-wall, but has there been any discussion with respect to any proposed queen conch mitigation, and then I will follow-up on that, once you respond.

MR. WILBER: So there is talk about how to minimize the impacts to queen conch, and those talks about minimization include better control of the sedimentation from the dredging project, you know, which has benefit to the corals too, and it also includes like, well, can you relocate queen conch, and it kind of seems like you can just go around with a big old basket, fill it up with queen conch, and then just dump the basket someplace else, in an area that looks like it's the same as the one you left.

Unfortunately, efforts, in the past, to relocate queen conch have not done particularly well, and so that has kind of made people understand that, well, this is a complicated problem, and not a simple problem, and so they're trying to kind of first find out, well, what is it about this location that makes queen conch aggregate there, and can we find similar conditions elsewhere that queen conch could be moved to, and then what is the process for moving them, but all of those conversations are at very early stages, because of the recent listing of queen conch, and it's been --

You know, I said we've been working on this project for twenty years, but we've only really been working on the queen conch part of it for a couple of years, and so they haven't really quite as progressed, and, honestly, with Port Everglades, the coral parts of this project are so complicated that they kind of take all of the air out of the room every time we talk about it. I didn't even go into the seagrass impacts, and the mangrove impacts, from Port Everglades, and they are substantial, but, you know, we just talk about the corals almost all the time.

DR. LANEY: Thank you. I wanted to mention that, you know, as many children go through a dinosaur phase, I went through a queen conch phase, a number of years ago, in part because I like to eat them, but one of the things that I discovered was that, with respect to -- I will tell you that, if anybody mentions captive propagation, that, for me, would put up a big red flag, because the literature I read on captive propagation was very interesting.

They did manage to successfully propagate them in captivity, but what they found was, when they put the little guys out there, they had a much higher than normal, and normally anticipated, predation rate, and they discovered, ultimately, as they tried to figure out what the heck was going on, that, when they were raising them in what amounted to, Tripp, something similar to hatchery raceways, they weren't getting the energetic inputs that they got in a natural environment, and so their shells were a heck of a lot thinner than they were for the wild-propagated queen conch, and so it's just didn't work out.

Now, my review of the literature was a good many years ago, and I haven't delved into it recently, to discover, you know, whether they could put some sort of, you know, surge device in the tanks and cause the shells to be thicker on the ones that they produced, but I would be pretty skeptical if anybody suggested captive propagation as a mitigation measure.

MR. WILBER: So Patrick Opay, from our Protected Resources Division, is on the queen conch side of this effort, and he has put together literally the Mount Rushmore of queen conch people in the world to advise him, each and every step of the way, and I know at least one of those folks that are on his Mount Rushmore, and advising him regularly, has a twenty-year history in queen conch propagation, and knows the strengths and weaknesses of stuff, and so I think we're in good shape for this part of the project.

DR. LANEY: Okay. Thanks so much again for the presentation, and I have said this on the record before, and so Tripp is sitting here, and so I'll say it while he's sitting here, is it would be nice to see, and it's not his division too, and I will give him credit for that, but it would be nice to see a similar report from our Fish and Wildlife Service Ecological Services colleagues that details and provides the same sort of information that you provide to us. That's great, and it's just much, much appreciated.

MS. CROWE: Any other questions for Pace, or comments? Go ahead, Scott.

MR. KATHEY: So, when you were -- Just after talking about the SHEP monitoring, you mentioned that you were going to come back to, I think, come back to the evaluations of environmental windows for dredging, and did you say you were going to touch back on that again?

MR. WILBER: No, I didn't, or I might have, but I didn't mean to. I mean, I think some of you folks are aware that the Army Corps has hosted a series of workshops to examine that issue, and I believe the next one is in the end of May, and it's going to be here in Charleston, and various groups are preparing either to just attend the meeting, or maybe even to present at the meeting, and one of the best sources of information, in my opinion, to inform this workshop is all the studies that were done in North Carolina in the last couple of years to look at sediment rates from dredges and, you know, how big plumes are, where they go, and things like that.

They have some really great data, and, unfortunately, none of it has really gotten to the point of where it's a report or a published paper yet, but there have been some presentations, by all the PIs that are part of this network up there, and what they've found, and we're hoping that the Army Corps will let us present a summary of those findings at the meeting in May, because we're kind of connected and have prepared that summary.

MS. CROWE: Kathleen, go ahead, and then Wilson.

MS. HOWINGTON: Well, I'm waiting until the end. I thought we were finished.

MS. CROWE: Okay. Wilson and then Kathleen.

DR. LANEY: I was just going to chime-in, Scott, and say that is scheduled, and, if you wanted to go to it, you could probably get an invitation to that workshop. I'm invited to it, but I'm going to be in Alaska when they hold it, but I think that's going to be an important forum for discussion, because, if memory serves correctly, they lost all the lawsuits that were filed on the dredging issues, or at least for Georgia and North Carolina they did, and, well, "lost" is a prejudicial term maybe, and the judge remanded the EA that they did for Wilmington Harbor and Morehead City, and so this workshop is sort of a response to that remand, I think.

The idea is to get everybody together, and we'll talk about it again, and I'm not particularly optimistic that anything terribly new will come out of that, but at least it's good for all the regulatory review agencies, and NGOs, and anybody else that's interested in environmental dredging windows, to weigh-in, and, of course, the proposal that the Corps had put out there, we discussed at some length a year or two ago, which is that they were going to replace environmental dredging windows with -- Help me out here, Pace, but with risk assessments, basically, of some sort, and, to our knowledge, and, in the interest of full disclosure, the North Carolina Wildlife Federation, which I also have something to do with, was one of the parties in that litigation.

To our knowledge, they never have produced any sort of risk assessment, or at least there wasn't anything in writing that we could determine, and so, you know, I hope that it will be a positive exercise, and so somewhere, but I'm not overly optimistic about it.

MR. WILBER: Well, so environmental windows are used everywhere in the country to minimize impacts from dredging, except in the Gulf of Mexico, and the Army Corps is trying to reduce the costs of its dredging operations, and, in order to do that, they need more time. They need to give more flexibility to the dredging contractors, and so, if they can make the windows go away, at least in the South Atlantic, they feel they can do the dredging more economically, and that's sort of the gist of the lawsuit.

There were separate lawsuits, one in Georgia and one in North Carolina, through completely different court things. The Georgia lawsuit focused mostly on sea turtles, and the North Carolina lawsuit focused mostly on fishery impacts, although both of them discussed the other impact, and it's a matter really of emphasis between the two, and the separate decisions from the judges basically remanded it, saying you didn't go through proper NEPA process, you know, to come to this decision, and so now the Corps is trying to prepare an environmental impact statement for the whole South Atlantic, to kind of move forward with this window-less dredging process, and these workshops are all part of the public coordination that's required under NEPA, and then, hopefully, from the court's perspective, they're going to pull together an EIS that will conclude that they can go ahead and dredge without windows, and then they will have at least cleared the hurdle of having a proper NEPA process, but they will probably get sued again, but we'll see.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: I just have a short comment. Since we're hovering on this slide, I think, Pace, that you suggested that artificial reef structures occupy about 1 percent of artificial reef leased, or zones, areas, and I don't know if you saw our recent paper, that came out in January, that quantified the footprint of artificial reefs around the country, and it's actually about one-third of 1 percent, and so even less than that, and so that paper is in *Nature Sustainability*. If you want me to send it to you, I can.

MR. WILBER: No, and I have the paper, and that's the one that I was trying to remember.

MR. RUNDE: Yes, and it's one-third of 1 percent.

MR. WILBER: I got close.

MR. RUNDE: Yes, and you were in the right order of magnitude, but, yes, it's even less.

MR. WILBER: Yes.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Just real quick, for Pace's benefit, because he wasn't here yesterday, and he said he didn't listen, but I wanted to let you know that Casey let us know yesterday that North Carolina is in the process of trying to database all of their Atlantic sturgeon detections, and so that might be a useful piece of information relative to the dredging windows thing as well, at some point, when they get all of that compiled.

MR. WILBER: Thanks.

MS. CROWE: Paul, go ahead.

MR. MEDDERS: So thinking about artificial reefs too, because it's the thing that I do, and I was mentioning, yesterday, and I was just -- You're probably very aware of this, Pace, but like our -- My understanding is some of the states do this differently, that some of the core districts do this differently. With us, like I said yesterday, our reefs are permitting through a programmatic general permit that's renewable every five years.

Then the consultation letter is good for ten years, and now the worst thing has happened, and they're out of sync, and I just -- Then the other issue that I had recently, and I know it's probably more on the protected species side, was words that were written in the consultation letter by NOAA, and then words that were read by the Corps of Engineers, and I don't know that -- In my opinion, which could be just Paul's opinion, but the Corps was interpreting them different than what NOAA probably meant, and so we were having some issues with that.

The Corps was like letter-of-the-law words, and I think the spirit of the law -- It had to do with right whales, and so we wanted another -- We were asking for a new consultation letter, but it stalled everything, and so we said, no, let's not do anything with this until the new right whale vessel rules come out, and I don't know if anybody knows when that's happening, but, when that happens, I think we're going to try to readdress it, if we're not up for a new consultation letter anyway, but that's -- I know it's -- My friend, that used to work with me at DNR, that now works at the Corps, said a phrase that I will never forget in my entire life. She said, well, Paul, it's just the nature of regulatory, and I throw up a little bit every time I say it, but, anyway, I just wanted to say that, just for the good of the group, hopefully.

MR. WILBER: Thanks.

MS. CROWE: Kathleen, go ahead.

MS. HOWINGTON: Is there a logic behind why you separate living shorelines and shoreline stabilization? Really, what is the logic?

MR. WILBER: No, there -- Well, so the shoreline stabilization includes like bulkheads and stuff like that, and, a few years ago, we would have lumped the very few living shoreline projects we had with the bulkheads and just called it all shoreline stabilization. In the last three years, we're

seeing a lot more living shoreline projects, and those living shoreline projects are, you know, taking up a lot of staff time, and let's just say not very much of these shoreline projects are living, okay, and there's an awful lot of rock involved in some of these. We're kind of separating it out now, because we want to track it separately, but that's the reason why they're tracked separately now.

MR. MEDDERS: So this is another one that I've thought a lot about, and talked with our people about, and we haven't landed on it, and I think it was a representative from -- I think he was from North Carolina, and we were talking about this very thing, was the term "living shoreline" means -- Do you know where I'm going already?

MS. HOWINGTON: I know exactly where you're going.

MR. MEDDERS: It means something different in different states, and I'm trying to get our people, and they will not do it, to not call those green engineering techniques that they're calling living shorelines to call them living shorelines, because some -- I have found, in conversations, that some states consider oyster restoration living shoreline, when it has nothing to do with bank stabilization, or the green engineering technique of stabilizing a bank, versus a bulkhead, and our agency is dealing with that right now too, and I'm going to keep saying it, because there's no consensus amongst states, and it makes things confusing when you are trying to quantify how many living shorelines, or how many whatever happened, until maybe somebody will -- Maybe somebody will come to a consensus.

MS. HOWINGTON: So we are actually going to be talking about living shorelines this coming spring, and one of my action items that I have for the group is we at least, as a group, are going to decide, when we say living shorelines, what it means, and I'm hoping that, if we as a group, who are representatives from every single state -- If we can all decide that this is what we mean, that hopefully that will have a ripple effect, but, at the minimum, we'll make it clear, and we'll clarify in this group what it means, and then what it means for the council, and so that's going to be something that we have to try to tackle when we -- That's why the reason why I'm asking like why he was separating them out, what was the definition, and so that's something that needs to be addressed before we can, I mean, potentially make a shoreline stabilization policy, we need to figure out what a living shoreline means.

MS. CROWE: I think that's a great path forward. I know, in South Carolina, we've had some discussions about that too, and Benjamin has been part of those discussions, and that's a question that needs to be answered. Wilson, go ahead.

DR. LANEY: Just one quick comment on living shorelines, and I know there's been a great deal of effort to try and educate folks about the benefits of living shorelines, versus traditional shoreline stabilizations, like vertical bulkheads, and I had an interesting conversation with one of our friends last week whose parents own property in Virginia, and she had never heard, you know, of living shorelines before, and so there clearly is still a need for education out there, to let people know that there are alternatives to traditional, you know, vertical bulkheads, in terms of shoreline stabilization, or at least shoreline protection, that are much better for marine and estuarine resources than vertical bulkheads are. My favorite example that I like to use is, if you're a diamondback terrapin, it's kind of hard for you to climb a vertical bulkhead to reach your nesting site.

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

MS. HOWINGTON: That's true. It's literally every single state has a different definition, and it's going to be a fun PowerPoint for me to make.

MS. CROWE: Okay. Any other questions for Pace? Benjamin.

MR. THEPAUT: Hi, Pace. Great presentation. Because Stacie put me on the spot, living shorelines and thin-layer placement -- Is that a dredging, a living shoreline, and are you all under policy development on that?

MR. WILBER: I mean, we have not really seen more than a couple of proposed thin-layer placement projects, and the ones that we've seen were federal projects, that were kind of done through an experimental beneficial use program that a particular Corps district had. We have worked with the Coastal Zone Program in North Carolina to help develop their guidelines for thin-layer placement, but we haven't really seen any projects yet really kind of proposing it, and I will say, to kind of show my age, I guess, but I used to work for the Army Corps of Engineers, back, you know, when my first son was born, and he's a doctor now in Atlanta, and so you can see like how long ago that was.

I actually did my replacement -- When I worked for the Army Corps of Engineers, we published a couple of papers on it, in Louisiana and North Carolina, and one in Abercorn Creek in Georgia, and so I've worked a lot on thin-layer stuff, thirty years ago, and it's interesting to see how little it has changed, you know, in that time, but, whether we actually see a project or not, I don't know. There's a lot of obstacles to actually doing it.

MR. THEPAUT: We're starting to see our first projects in South Carolina.

MS. CROWE: Okay. Anything else for Pace? Any other comments? Kathleen.

MS. HOWINGTON: Okay, and so, again, just like yesterday, so then we have action items, and I'm going to pull up the presentation on the other screen. Is there anything that we would like to see us do, as a group, in regard to this? Is there anything else? Right now, I have, in the spring, we're going to decide a definition of what living shoreline means, potentially add what living shorelines are to the outreach plan, or communication plan, and that was something that Wilson just said, and so that could be something we discuss after we figure out what they mean, and is there anything else that we want to add to our action plan? Maybe discussing a shoreline stabilization policy in the spring, or any other recommendations?

MS. CROWE: Did you want to comment, Wilson? I was going to say I think it's a great idea to discuss whether or not we need something written up and bring it to the council. Wilson, did you have a comment?

DR. LANEY: Well, it's a question and a comment, and is it possible that, when we're having that discussion, if it is evident that one living shoreline structure is better than another living shoreline structure, in terms of ecosystem benefits, or minimization of impacts, and would it be possible for us to kind of list those in priority order? Pace, is that -- I mean, have you all seen that, when you do these reviews, or anybody else around the table, for that matter?

I know a whole lot of work has been done on these in Chesapeake Bay, and so we might want to talk to our Northeast Region colleagues, and certainly Simen could sort of facilitate that, through the ASMFC Habitat Committee, and ask folks, you know, what have you seen put in place out there, and are there designs that you think are better and should be priority over other types of designs. I think Paula has a thought on that.

MS. KEENER: Was that a question for Pace? Sorry. Go ahead.

MR. WILBER: The way we're approaching it, right now, is we're focusing on what degree the living shoreline impedes access to and from the marsh, as animals migrate with the tide, and there are what I will call small projects, you know, less than 500 feet in length, that get looked at differently than projects that are over 500 feet in length, and is that a smart way to look at it? You know, is it smart, but it needs a different break than 500 feet, and like maybe you need to think about at 200 feet, or 700 feet, and then how much access is really needed to still have the marsh serve its function as a predator refuge, you know, and a foraging area, during high tides.

We don't really kind of know the answer to that. It probably varies, you know, a lot from one estuary to the other, and then, when we start looking at the materials that are used to -- You know, as the living shoreline structure, and we evaluate them from their ingress and egress perspective, and I think that's basically the way we're looking at it now, and, if there's a better way to look at it, we would love to hear it.

DR. LANEY: Thanks for that. I think that makes sense, from my perspective, and length certainly would come into play in that regard, and I know, in North Carolina, and Casey may want to comment on this, but I know the North Carolina Coastal Federation has been successful in getting funding to do some fairly long living shoreline projects up there, and I haven't looked at those in detail, and I know -- I mean, from my perspective, if I had to say, right now, you know, what do I think is a priority design that better addresses the impacts, ingress and egress would certainly be, you know, one thing that I would look at, for sure.

Again, you know, Virginia, the Chesapeake Bay, has done a lot of work on this, and Florida has done a pretty good amount of work on it also, and I know Kent Smith, you know, who chairs the Atlantic Coastal Fish Habitat Partnership Steering Committee, has taken us out, and we've had field trips and looked at different types of living shoreline projects, and ingress and egress was one big aspect of those, you know, leaving gaps or using material that provided -- What's the word that I want? Spaces, interstitial spaces, you know, for water to be able to flow back and forth through the things, as opposed to just constituting an offshore barrier.

MR. WILBER: Well, I mean, we can put together like a list of the problems we've encountered with living shoreline projects. It's really just sort of an eclectic list, but, you know, you have proposed living shorelines that are on top of seagrass beds, you know, and so we try to discourage that, and you have living shorelines that let's say 99 percent of the length is concrete, or rock, and 1 percent of it is sediment and spartina, and is that a living shoreline? You know, I don't know. It's certainly called a living shoreline, and it's been funded as a living shoreline by government agencies, but, you know, does it really deserve that living shoreline kind of label to it, and are there shorelines that we shouldn't worry about stabilizing?

Like, if there's a dredge material island, and, you know, nature is reclaiming that dredge material island, and turning it back into shallow-water habitat, do you really need a living shoreline to stop nature from doing that? You know, that kind of a thing, and so there's a lot of nuances to this discussion that can take a long time to go through.

MS. HOWINGTON: What I'm hearing is that we need to recommend -- We need to request a living shoreline summary from Pace in the spring. Is that what I'm hearing?

MS. CROWE: Paula.

MS. KEENER: Thanks. I was just going to mention that, and it's been part of the discussion here recently, that considerations for criteria for establishing the -- I guess the appropriateness of living shorelines, whatever that may be, is going to depend greatly on, in terms of the Southeast Region, subregional considerations of the hydrography of the area. I think you're right, Pace, that it's going to be kind of a mess to sort through, or not a mess, but --

MS. HOWINGTON: Not spring. Fall. We're in the spring.

MS. CROWE: Are you thinking this for the fall meeting?

MS. HOWINGTON: It's already on our workplan to discuss living shorelines during the fall, and so yes.

MS. CROWE: Okay. It sounds like a plan, and so if everyone comes prepared to kind of discuss that, and maybe what they're seeing in their areas, and hopefully we can make some progress on that, and I think that would be very helpful for a lot of us that are reviewing permit applications with living shorelines.

MS. HOWINGTON: Again, any definition we make in here would not be -- Like each state has their own definition, technically, and this would just for our group, how we're defining it, so that, from now on, it is consistent, and then that would mean, hopefully, then the council would start using that wording, and that verbiage, consistently. Then, if we need to make, you know, section regional definitions, we can.

MS. CROWE: Wilson.

DR. LANEY: Well, I just wanted to note that Pace already pointed out that sometimes there are SAV entanglements with living shorelines, and that whole issue came up in the Atlantic Coastal Fish Habitat Partnership and the ASMFC Habitat Committee. The Northeast Region of NMFS brought it up, because it was an issue, as far as they were concerned, and so there is something in the administrative record there, and I can't remember, and I think we would up putting some -- We addressed that issue, and we put some language in the ASMFC living shoreline guidance document, and so that's one place we can look, Kathleen, to see what has gone before us and whether or not that might have some utility when we have this discussion.

MS. CROWE: Thanks, Wilson. Paula.

MS. KEENER: I agree with Wilson, and my point was going to be that I think going back and looking at the origin of the definition of living shorelines would be important, particularly if we want whatever we decide to potentially offer a ripple effect forward. Thanks.

MS. CROWE: Brendan.

MR. RUNDE: I was going to move off of living shorelines to another action item, and so, if there's any more on living shorelines, I guess we can come back to it, but it sounded like, and, Pace, correct me if I'm wrong, but the purpose of your pie charts was sort of to suggest to us that there might be the need for policies on other things that currently don't exist, and I'm wondering if the group thinks that we should have a policy on the dock and marina building that occupied a huge portion of your left-hand pie chart there.

MS. CROWE: So I'm going to jump in there, and, Kathleen, you can back-pedal, if you want, but I feel like that's a nice segue into our next topic of discussion.

MS. HOWINGTON: For the annual report?

MS. CROWE: For the annual report, and so it was my understanding that part of the annual report was outlining activities where we feel like there might be a gap, where we might need to suggest to the council --

MS. HOWINGTON: Something.

MS. CROWE: Yes?

MS. HOWINGTON: Yes, and so we could include this, and we also can -- Again, for what Brendan is saying, we can add in an action item of suggest the council discuss marinas and docks and the increasing EFH consultations, and what can happen, and ask for direction?

MS. CROWE: Well, even as far as our group -- So, last fall, the council approved the habitat blueprint, and, as part of that blueprint, it was stated that this advisory panel should provide an annual report that outlined activities going on in the region. I think Pace's pie charts are a great first look at that, and it kind of shows what some of the major activities are, and Pace even spoke a little bit about where maybe there are gaps, where there isn't guidance to follow, and so I think even just stepping it back, as far as our activities report, that's one of the main things we're seeing in the region.

I know that's true for South Carolina. We see a lot of docks, and we've seen a lot of marinas recently, and I'm sure Paul could speak maybe to Georgia, and, you know, someone could let us know if that's what they're seeing in Florida, and possibly that's just something we just add to our activities report and see where it goes from there. Wilson.

DR. LANEY: Your comments, Madam Chair, along with Pace's point that marinas and docks, in terms of numbers, are disproportionately high, but, in terms of area, are small, but I also -- This is prompted by all the recent discussion about EPA's new regs with regard to PFAS and PFOS, and I wonder, and I will ask you all on the AP, but is there concern about -- Even though the area is small, the potential for inputs of toxic substances might be -- I don't know, and is that a concern?

You know, do we worry more about marinas in terms of water quality, as opposed to the area, than we might worry about some of the other types of things? I don't know, and I just wanted to make sure that's on our radar screen, and don't just think about the area that's occupied by docks and marinas, but think about any potential inputs that also could be an additional quality impact that we might not think about right off the top of our heads.

MS. CROWE: So I think that's a good point, Wilson, and I was curious, and, Pace, maybe you can speak to it, but you've lumped marinas and docks together, but what proportion of that is marinas? I just know, from what I see, that it's, you know, five docks a day that are private recreational docks off the back of someone's house.

MR. WILBER: If I didn't lump marinas and docks together, the docks would be almost the same size in this pie chart.

MS. CROWE: Go ahead, Tom.

MR. JONES: Pace, can you send us the updated handouts, the ones that --

MS. HOWINGTON: I will send it to you.

MR. JONES: Okay. Great. Thank you. Can we use part of these slides in my nonprofit meeting updates on --

MR. WILBER: Sure.

MR. JONES: Thank you.

MS. CROWE: Paula.

MS. KEENER: Thank you. In consideration of potential impacts of marinas and docks, I mean, I think, clearly, marinas are going to have a much greater environmental impact than recreational docks would have, and so I don't -- I mean, lumping -- I don't know, and it depends on how you're looking at the variables.

MS. CROWE: Does anyone else have a comment on that? Scott.

MR. KATHEY: I think, during your presentation, you mentioned that dredging -- Right now, there is no policy statement on that, correct?

MR. WILBER: No, there is, and it's inside the beach nourishment policy.

MR. KATHEY: Okay. Thanks.

MS. CROWE: Mathew.

DR. JOHNSON: Can you clarify -- This is just fiscal year 2023 consultation numbers, and have you ever looked at this as a cumulative over the years, and so the total acres of marinas and docks, kind of collectively over the years, to -- Would that portion of the pie be bigger?

MR. WILBER: We haven't done it cumulatively. Every couple of years, somebody wants the pie charts, and so I will run the pie chart for that particular year. The shape of these pie charts is basically the same as what I've seen during the past times I've done it, but I've never gone every year from 2014 to the current year, which is what our dataset covers, and done a cumulative one, and I haven't done that.

MS. CROWE: Anyone else? Brendan.

MR. RUNDE: So, Pace, you're not sure what the trajectory of some of these things is over time?

MR. WILBER: Are we ever really sure about anything? Do I have a certain impression? Yes, and I think these are pretty representative numbers here. The biggest number I've seen for total acres, for example, is like 24,000, and that was in 2014, but, you know, as far as -- The dock and marina thing is a little bit bigger now than it was in previous years, because -- I mentioned this at the last meeting, that the Georgia Corps of Engineers had a general permit for docks that they let lapse about eighteen months ago, or twenty months ago, and that has moved a lot of the individual residential docks in Georgia out of the general permitting world, which I largely don't participate in, and don't track, and into the permitting world that I am part of. There's about a hundred more docks, you know, in my spreadsheet now because of that change in Georgia, but it's still basically the biggest part, if you go back even to when that general permit was still in place.

MS. CROWE: Wilson.

DR. LANEY: So, tagging onto Brendan's comment, it would be interesting, Pace, you know, if you could go back and look at that trajectory, and it would be interesting to see what, if any, changes appeared during the pandemic, because I know, as far as recreational boating goes, my perception anyway, from what I've read, is that recreational boating took a big jump upwards, along with recreational angling, because people just wanted to get outdoors, you know, and do stuff, and so it would be interesting to see if, you know, dock and marina construction showed any sort of a blip during the pandemic years.

MS. CROWE: Scott.

MR. KATHEY: Of the acreage there, do you have any idea of how much that is repeat, and so someone has got a dock they've had for twenty years, and they're coming back in, because they either want to extend it or they want to repair it, that type of thing, and so what percentage of like new acreage that's being impacted over, you know, just repeat?

MR. WILBER: So we do track docks in a way that allows us to separate modified docks versus new docks, and if the acreage number for the modification is easily extractable from the information that we received, we will record only the acreage of the new part of the dock in our records, but most -- Especially older records, most of the records don't allow us to easily extract that sliver, and so what we would tend to write in the database at that time is that total acreage of the new dock. I'm saying we make an effort to make that separation, but I don't think the quality of that effort is enough that you can really rely on those numbers a whole lot. You can get the gist of the story, but I wouldn't be sure about it.

MR. KATHEY: I was actually thinking about beyond just the docks and marinas, and everything in your pie chart, and so, when we're looking at acreage up there, is that fresh acreage that's never been touched before, or, you know, is a certain percentage of that old footprint that's just continually be reworked?

MR. WILBER: All right, and so, if we do the whole pie chart, or at least focus on the dredging and the artificial reefs and the beach nourishment part, yes, we could do that. Now, the only asterisk I will point out there is that, when somebody comes in and asks for a permit to dredge between A and B, it doesn't mean that they're going to dredge every square centimeter between A and B, and it's kind of a hop, skitch, and jump, and so how you deal with that situation, when making the differentiation that you're interested in, would have to be kind of ironed out and operationalized somehow, but, yes, we could separate that out.

MR. KATHEY: So what we're looking at, this data is a mix of both, presumably.

MR. WILBER: Yes.

MR. KATHEY: As Paul has pointed out, for the artificial reefs in Georgia, they may have, you know, one square mile of approved track to put materials in, but there's only a fraction of that square mile that's actually occupied by artificial substrate that they put in, and so, when we're looking at a total here, for instance for artificial reefs, I presume that's for the entire area that's been approved for artificial reefs, whether any material is placed there or not.

MR. WILBER: Correct.

MR. KATHEY: Okay. I'm just trying to get the context for what that acreage is telling us.

MR. WILBER: Yes, and, if you want to think about it, beach nourishment -- It's very rare to see a brand-new beach nourishment project, and so almost every beach nourishment project is a rehash of a previous one, and so you could count all of those acres as rehashes, or almost all of them.

MS. CROWE: Anything else? Okay. Are we ready to move on to --

MS. HOWINGTON: Do you want to take a break, since it's 10:20, and the annual report is going to be a long conversation.

MS. CROWE: Yes. Okay, and so ten minutes?

MS. HOWINGTON: Ten minutes sounds good.

MS. CROWE: Okay. We'll break until 10:30.

(Whereupon, a recess was taken.)

MS. CROWE: Okay. Let's dive back into this, because it's time for the annual activities report, which is super exciting, and Kathleen can't wait to get started on this, and so I'm going to turn it over to her to tell you what's going on with that.

MS. HOWINGTON: Okay, and so, just to remind you guys, again, the habitat blueprint was approved last year, I believe during the September 2023 council meeting. When the blueprint was approved, that gave us our goals for the blueprint, and it reevaluated the membership of the Habitat AP, and it changed our name, but it also gave us this, and this is one of the things that we are to turn into the council once a year, at their spring meeting, and it is -- We are dictated to provide the council with an annual report addressing habitat activities, consultations, comment letters, future threats, research needs, and the use of habitat policies during the calendar year.

It's intended to provide a mechanism for the council to be informed of activities that are outside of our AP report, and so we're not doing the same work, and we're not going to be duplicative, but this is going to be things like what we were just talking about, like thin-layer placement, and that's not necessarily something that we had on the docket today, but it is something that would be of interest to the council, and this is something that we're suddenly hearing about a lot more, and that could be added to the annual report.

The pie chart that we just saw, we think that would be really interesting for the council, and it doesn't necessarily belong in our AP report, but it can go in the annual activities report, and that would be great, especially since it's for the last year, and so it applies very well.

The format of this is supposed to be mostly bullet points, tables, summaries, quick points to it, and so one of the things that we actually, as a Habitat AP did, is we created an outline that we thought would be applicable to what the annual activities report was, and this occurred during the last November meeting, and we sent that to the council, and they agreed with the outline, and said, okay, yes, we're getting the general gist, but, if you can't hear from the way I'm describing this, this is the first time we've ever done it, and so we're going to be kind of figuring it out as we go.

I did send out an email requesting information, and I have gotten some responses, but it is going to be -- We're going to now sit down, look at that Word document that I have put the responses in, and then each section of the outline, each bullet point, I'm going to ask if anyone has anything that they would like to contribute, and so, again, this is things that are of interest, things that are coming up, things that you think the council would really appreciate seeing, that are not necessarily in our AP report.

With that, I drafted a general purpose and scope of the report, and it's basically exactly what you just saw in that little PowerPoint, but the PowerPoint had pretty pictures, and so I wanted to put that up first, and then we're going to go to the next step, and so, like I said, I took the outline, I split it out, and now each of these bullet points, and so you see the first one is status of EFH-related comments, and I am now going to ask the panel if have anything that we want to add to this section that applies to this theme that we're not going to put in the AP report. For example, the council submitted a letter to the Starship-Super Heavy Operations at Cape Canaveral, and that's not going in the AP report, but it is of interest.

The AP report is going to be -- Remember the action items that I've been showing you guys? This is what happens in our summary report. Basically, I have a little description of Pace gives a talk, and I wasn't sure if he was going to talk about 2024, and so I highlighted that, about consultation activities, and here's our discussion.

Clearly, I don't like showing this very much, because, you know, I'm typing as fast as I can, and so "acreage" is not "average". I clean up these notes, and make them very succinct, and it's just things that we're talking about, and then we have our action items at the end. One of the action items was adding the pie chart into the annual report, and I think that's great, but it doesn't necessarily belong here. It belongs in the annual report here, and does that make sense? Are we seeing kind of the line? Okay.

For the status of EFH-related comments submitted by the council, South Atlantic states, and HCD, does anyone have anything that they would like to add that they think would be of interest to the council from the last year?

DR. LANEY: Well, I will defer to the rest of the AP, and we just talked about the Corps-of-Engineer's-sponsored upcoming workshop, and maybe we should, you know, throw that in there, because we did have a fair amount of discussion, in the past, about those lawsuits in Georgia and North Carolina, and I don't know, and maybe just some sort of, like you said, a focus on keeping it short and concise and just note that the Corps of Engineers will be hosting that workshop to talk about environmental dredging windows, and that is partly litigation driven, because, in both cases, the judges remanded their environmental documents back to the Corps, and so this is an effort by the Corps to, as Pace put it, avoid future litigation, but also address the concerns that were raised by the courts. There is -- I guess we could include -- You know, I will defer to you, Kathleen, as to whether we wanted to put something more detailed, like the invitation from the Corps, in an appendix, and I don't know.

MS. HOWINGTON: So this is the report that we're giving to the June council meeting, and so I don't think the invitation would be very helpful, but -- Okay, and so discussing dredging windows, and what else are they discussing, because I can only type so fast.

DR. LANEY: Just point out that -- I mean, if you wanted to summarize the brief history of it, in a nutshell, the Corps of Engineers, for the reasons that Pace stated, which are already on the record for this meeting, wanted to get rid of environmental dredging windows and replace it with basically what amounts to onsite risk assessments, in order to cut costs and make their operations more efficient, because dredging capacity is limited in the South -- Well, it's limited everywhere, I think, pretty much.

They were sued over that decision, and, in both cases, in Georgia and in North Carolina, the environment documents were tossed out by the courts, and it was remanded back to the Corps, and then this workshop is their response to that process, basically, and, anybody else who has been involved in that, feel free to weigh-in and correct the record, if I misstated anything.

MS. HOWINGTON: Yes, and tell me if anything I'm writing down is incorrect.

MS. CROWE: Paula.

MS. KEENER: Thanks. I don't know if this is appropriate to go here, but, yesterday, we talked about -- Someone mentioned modeling work for corals management, and the potential of using that to expand existing HAPCs.

MS. HOWINGTON: Give me one second. For all the people who are online, I apologize for het scrolling.

MS. KEENER: It may be in there.

MS. HOWINGTON: Regional research would be good, regional research activities supporting EFH?

MS. KEENER: Yes.

MS. HOWINGTON: Okay, and so then we will return here -- We were returning here for Paula's comment. Okay. We're going back up.

MS. CROWE: Sorry, and I'm going to jump back to the dredging for a second.

MS. HOWINGTON: Okay.

MS. CROWE: Jordan, I don't know if you can address this, or if Wilson heard something different, but Pace referred to an EA for the Wilmington district, with regard to the dredging windows, and that -- Is it a published EA?

DR. LANEY: Yes, it was. They put out a -- They solicited comments. They had a draft EA, and they solicited comments. They finalized it, and then that's what resulted in the lawsuit, and that final EA was deemed inadequate, and it was remanded back to the Corps of Engineers.

MS. CROWE: So that EA is part of what the group is -- What these meetings are about, and they're working through the suggestions in the EA?

DR. LANEY: Help me out here, Jordan, but my understanding is they're getting all this expertise together, from all of the regulatory review agencies, and basically any other interested parties, including NGOs, and even the litigant I think may possibly be involved in that, but the whole idea is to basically try and address the -- This is my perception, and so, Jordan, jump in here if I misstate, but my perception is they're going to try and address the inadequacies, and this is based partly on a conversation with Pace during a break, but they're going to try and address the inadequacies in that EA and then put out an EIS, and still the intent, on their part, would be to get rid of environmental dredging windows, I think, as a mitigation measure.

MS. WOLFE: A lot of the environmental windows that are in that EA are kind of piggybacking off of the sea turtle windows that were provided in the SARBO, and so pulling in the expertise to make sure that the environmental windows that are recommended for the different species are up-to-date and following the relevant literature and not just piggybacking off of predesignated windows within the SARBO for sea turtles, and so going through that, but then also making sure that, as Wilson stated, that they're more recommendations under the consulting and not like hard -- Not hard stops for the dredging process.

MS. CROWE: I plan to attend that meeting in May, and so possibly I could help you with that section, after the meeting, and maybe give you some bullet points or major topics that come out of that.

MS. HOWINGTON: Okay. Sounds good.

MS. CROWE: Okay. Anything else? Do you want to keep going on this section? Anything else for this section that anyone can think of for Kathleen?

MS. HOWINGTON: Okay, and so then update of major regional activities and projects in the South Atlantic, and so we were talking about the wind policies, port development renourishment, and I was thinking that we could add in -- I'm glad that Pace gave his presentation ahead of time, because I think we're about to take a lot of his stuff. Do I have permission from the group to put this slide in here? Does everyone feel good with that? Cool.

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

MS. HOWINGTON: It is still technically in the South Atlantic. They are still interested in Caribbean. I think there might be a different section for external to our region, and I can just move it in there. All right. Of course, whatever formatting is about to occur, I apologize. All right.

MS. CROWE: Wilson.

DR. LANEY: Since we're talking about borrowing from Pace's presentation, Kathleen, I know we have a policy of freshwater inflows to estuaries, and it might be good to stick his figure, his river figure, in here, you know, that shows all the fish passage projects.

MS. HOWINGTON: Okay.

DR. LANEY: Again, for the benefit of our new members around the table, I will try and give a short, very short, explanation of the council's engagement with diadromous species. The way Magnuson works, EFH can only be designated for those species which have a fishery management plan in place, and the federal government does not have a fishery management plan in place for diadromous species, which are mostly anadromous species, because the only diadromous one is the American eel, that does the reverse of what all the anadromous species do, but, when we wrote that habitat plan, back in 1998, the council in place at the time said, well, hey, you know, what -- If you read the fine print in Magnuson, it says that NMFS, and the councils, are responsible for these species while they're in the ocean, but we're not going to designate EFH for them, because there's no FMPs.

Well, the South Atlantic Council said, okay, well, what we're going to do is we're going to include, in the habitat plan, what would be EFH for these species if we had a management plan, and so we sort of skirted the loophole by, you know, writing that into the plan, even though, you know, the council doesn't have the direct authority for it, based on the NOAA General Counsel opinions about that whole issue, and so that's the way we're skirted it, but we're still very much interested in freshwater inflows to estuaries, and, of course, those are very relevant, when you're talking about anadromous species and American eel recruitment to the nursery areas that are in the rivers, and so I think it would be appropriate for us to stick that in there, if everybody else agrees too, just to keep the council aware of, you know, where things are relative to those species, because --

This gets us back to the predator-prey thing, and most of those -- The clupeids, the anadromous clupeids, which are American shad, hickory shad, alewife, and blueback herring, are important prey for council-managed species while they're in the ocean, and so there's still the connection there. The ecological connection exists.

MS. HOWINGTON: Okay, and so, for this, you want to add in the fish passage restoration image, this one?

DR. LANEY: Yes, that's what I'm suggesting.

MS. HOWINGTON: Okay, and you want it to be underneath the update of the major regional activities and projects in the South Atlantic, and so I'll copy this, and it can go here. Got that.

DR. LANEY: Again, I will defer to you, Kathleen, and the rest of the AP, but the way we could justify doing that is to say, well, this is relevant because of the predator-prey linkage between those species and council-managed species while they're in the ocean and our desire to see robust populations of those species, but also it links to our flow policy, our freshwater -- The council's freshwater inflow policy for estuaries as well, since a lot of these are regulated rivers, and so the ones that are FERC licensed have minimum flow requirements, and, also, you know, in the case of the Roanoke, there is a negotiated agreement for spawning flows, in particular, and it looks like the Neuse River may be headed in the same direction, because the scope of work that was provided to me by the Corps, and The Nature Conservancy, indicates that they're looking at that on the Neuse River as well, which is regulated by flows from Falls Dam.

MS. HOWINGTON: It's the --

DR. LANEY: One other thing that I forgot, Madam Chair, is I think Laurilee is back there, right?

MS. HOWINGTON: Yes.

DR. LANEY: So we have been joined by another council member, and we didn't introduce her, and so you might want to do that at some point.

MS. HOWINGTON: Okay. All right, so, Laurilee, do you want to introduce yourself?

MS. THOMPSON: I am Laurilee Thompson, and I'm from Florida, and I own a seafood restaurant, and I've been in the shrimping industry all my life, and I'm a council member for one more meeting. I guess the governor didn't like me.

MS. HOWINGTON: She is also vice chair of our committee.

MS. THOMPSON: Thanks for having me.

MS. HOWINGTON: We liked you, and we're very grateful you're here, because she's also the reason why we are discussing the decommissioning project, and she's the one who brought it up, as well as the Indian River Lagoon passage, and both of those are Laurilee suggestions, and so thank you. You're half of my agenda, or a third. I will give you a third. Okay.

MS. CROWE: Paul.

MR. MEDDERS: This is really building on what Wilson was saying, and it may not need to go in there, but I will just -- What I think about, when I see this, is that we, as a state, are doing a lot of the assessments of fish passage, culvert stuff, and it hasn't been done in our area, and so it's funny that that map -- That map shows the high-priority areas that have been assessed. Areas that haven't been assessed, there may be high priorities in there that have not been assessed, and we're just now entering that data into the SARP database right now, and I think you're going to see some of those spots, on the Altamaha and other places, probably make the red mark.

Also, while I've got this, I'll make the comment that your explanation of the anadromous versus the catadromous is interesting to me, because we're been looking for a species that we can hang our hat on to get some federal money to do some culvert replacement, and we don't have an anadromous species, but we have the eel, and a barrier is a barrier, no matter which way, but all that BIL money all shows anadromous species as the -- Go ahead, Tripp.

MR. BOLTIN: The American eel is not going to fly on the DOT side, but you still have shad that you can go with there, and so, I mean, in the Southeast -- You know, I'm not sure where it's going to go for 2024, but, for 2023, you know, we had one project, and that was up in North Carolina, and that was a shad-focused project, but I would like to, you know -- While I have mic, I'm assuming that map is mostly hydro-related projects, and there's a significant road crossing issue, and I think North Carolina is starting to play with this, with their American shad work, about how road crossings are also affecting water flow, sedimentation, access to backwater, and so it's not only a hydro issue, in terms of stuff, and so, as a group, we need to think more about barriers than just hydro.

DR. LANEY: Thanks, Tripp, for putting that in there, and Tripp was telling me, during the break, that you got funding for assessment in the Neuse and Tar-Pamlico, right?

MR. BOLTON: Tar-Neuse.

DR. LANEY: Tar-Neuse, and so both of those watersheds will be getting some attention, in terms of assessment, and that is also -- I don't know, and we may want to mention that. As Paul pointed out --

MS. HOWINGTON: I'm already on it, and so there are two assessments that will be conducted in which watersheds?

MR. BOLTIN: So we got funding, internally, to do some -- It will be upper Tar-Neuse road crossing assessments, and I think North Carolina is also gearing up -- Not to speak for North Carolina here, but they're going to do some other road crossing assessment within the state, to include some coastal work.

MS. CROWE: Jordan, go ahead.

MS. WOLFE: I think these are all really great conversations, and this is important to have, but I do just want to make sure that we are dialing it back a little bit, because this specific slide, when it comes to fish passage, is not under MSA. We don't consult under MSA, and this is under the

Federal Power Act and under the Fish and Wildlife Coordination Act, and so MSA is coastal areas to the EEZ, and that fish passage figure right there -- That's the Federal Power Act and Fish and Wildlife Coordination Act, and so not within our South Atlantic EFH jurisdiction, and so just -- Cool.

MS. CROWE: So I'm wondering, and maybe this won't work, but, because one of the major projects that Pace had mentioned was the Mark Clark Expressway, are there other regional big road projects, and then could we lump the culvert replacements in with road stuff, and would that work, is that not a great way to structure that? Does anybody have any thoughts on that?

MS. HOWINGTON: As a pessimist. I don't think the Mark Clark Expressway is going to go through, but, you know.

MS. CROWE: We've got to plan for the worst and hope for the best, and so let's leave it at that.

AP MEMBER: Many of those are bridge issues, and so how bridges relate to, you know, barrier movement is a little bit different.

MS. CROWE: Well, but the Mark Clark -- Part of the issue with that is impacts from bridging, and you're working on that project, correct? So I don't know. I didn't know if it might be a cleaner way to tie it together, but I don't -- Either way works, and so whatever works best for the report, and I didn't know if there were other major roadway projects, in other states maybe, that should be noted as well.

MR. JONES: The Georgia Water Coalition has done a lot of assessments on culverts and fish passage in Georgia. I was active with that group when they started off, but, the past several years, I have not been active with them, but I can find out, for Paula, or for the Habitat AP, all the programs and projects they've identified, and they've gotten funding, federal funding, to fix a lot of those in the State of Georgia.

MS. CROWE: I feel like there was a document that came out of Georgia recently that had some BMPs for culvert replacements and stuff. Are you aware of that, Paul? Okay. I thought there was a document that came out of Georgia recently that had some BMPs for culvert replacements and such. I think I had -- There were some good BMPs for like manatee crossing and such in the document, and I will see if I can find it.

MS. HOWINGTON: Okay. Going back, right now, the section we are in is update of major regional activities and projects in the South Atlantic. We have all of these EFH conservation efforts, and we have the fish passage restoration picture, which we had a few comments on, two assessments for the upper Tar and Neuse Rivers, and North Carolina is starting some road crossing assessments, and the Georgia Water Coalition has done many studies. If you could send me a link to any kind of study, or something like that, so I can put that in here. Are there any other major projects that we feel like we need to add to this list?

DR. LANEY: Not a major project, but, just to tag onto what Jordan said, and, you know, she noted that the map is Federal Power and Fish and Wildlife Coordination Act, mostly, because the EFH nexus is lacking for those diadromous species, but I think we can make a good case for, you know,

the predator-prey responsibilities of the council coming into play here, and, to the extent that the flows, and the passage, are important for a significant --

Well, what historically was a significant component of the prey, and I'm realizing that blueback herring, alewife, and American shad and -- Well, not so much hickory shad, but the other three species are sort at historic low levels right now, and who knows whether that's related to past overfishing or climate change or a synergistic combination of all the above, but I think we can make a good case for keeping it in there, because of the predator-prey aspect of it, hopefully, and because, you know, there should be EFH for those species anyway, and it's just because of a glitch in the --

It's what I refer to as the catch-22 in Magnuson that said, well, yes, you guys are responsible for these, but, oh by the way, you can't do EFH unless you've got an FMP, and the administrative record is replete with discussion, certainly at the Mid-Atlantic Council, and, to a certain extent, here at the South Atlantic too, about -- They have talked about it before in the past, but it's deemed that, you know, the ASMFC is the management entity responsible for all those species, and so the council has kind of deferred to the Atlantic States Marine Fisheries Commission for dealing with those species, which is justifiable, and I'm not going to argue about that.

MS. CROWE: Scott, did you have something? Okay. Jordan.

MS. WOLFE: I just wanted to add a quick comment on that, and so just keeping in mind that the Fish and Wildlife Coordination Act does have a lot more teeth, like comparatively to the MSA, and so, even if we were going to go down the road of like designating EFH for anadromous, or diadromous, species, we already do comment, and provide consultation, on other Fish and Wildlife Coordination Act -- Which already has more teeth than the MSA, and so, for like the benefit to cost ratio, and that time, how much benefit would be provided, versus like what's already being done, when MSA doesn't have as much claws, if you will, to Fish and Wildlife, and so just kind of keeping that in mind for the group.

DR. LANEY: Yes, and I agree, and I was hoping that Pace would be here, but we are going to talk about the fish habitat of concerns document, which ASMFC finally finalized, after many, many years of working on that, and that's -- A lot of that is attributable to Pace recommending that we do that document in the first place, and so I think he would be -- Hopefully he's very happy that the thing is finally out there and is online as sort of a living document, and so that sort of addresses the -- It's sort of an equivalent to HAPCs anyway, because the commission used the same definitions that are used by MSA, even though they don't carry the same legal consultation requirement.

MS. HOWINGTON: All right, and so any other large projects, before we move on to the next one, which I already kind of did? Benjamin.

MR. THEPAUT: I would be remiss to add some of the submarine data cable projects that we've been reviewing, and it's kind of -- I sent you a link to a map, and there's a really nice map online that's showing all the existing and upcoming projects, because this is across the Southeast, and so we had a recent landing of a cable, with spots for future cables, at Myrtle Beach State Park, and that was permitted by the Corps, and we reviewed that under our Coastal Zone Management Program, and so I think that's something that we should all be keeping our eyes on, just like the

offshore wind development and those export cables. These data cables, from my understanding, are about the diameter of a garden hose.

MS. HOWINGTON: That is not insubstantial. Okay. All right.

MS. CROWE: For Thomas and Paul, that document that I was referring to, it's the Georgia Stream Crossing Handbook, out of the Aquatic Connectivity Team. It had some coastal BMPs in it.

MR. MEDDERS: That's our sister division that does that, and that's why I probably didn't see that.

MS. CROWE: It looks like -- It says published in 2012, but it was recently updated, and I guess that's why it had circled back around and I had seen it.

MS. HOWINGTON: I'm going to just in my brain say, because now it's making me do a QR code, and so, in that my brain, that is now in here, and I will get that eventually. Anyone else with big projects? All right. Then the status of council habitat policy statements. Sorry.

MR. MILLER: I am looking at this road crossing assessments, and it makes me aware that Florida has started what's called the Florida Aquatic Habitat Connectivity Team, and it's part of the Southeast Aquatic Resources Partnership, and our goal is to identify all kinds of issues involved with reconnection, from culvert removal to floodplain reconnection in Florida, and it involves a number of state agencies, and so that's a very active group that we have going on right now.

MS. HOWINGTON: All right. Can you give me the full name again? Sorry. Florida Aquatic Habitat --

MR. MILLER: Reconnectivity Team. It's sponsored by the Southeast Aquatic Resources Partnership.

MS. CROWE: So this would tie also to the one that I mentioned, the Georgia ACT, and so I think all of the regional states have that now and are on a similar path. Go ahead.

MR. MEDDERS: Real quick, because this will play on what you all are saying, and we're kind of belaboring this, and what Tom said too, and Georgia has done a real good job in the Piedmont, with stream crossings that go dry, and that's a lot of what you're talking about, and we are just now venturing into that, and we were trying to hang our hat on some of that anadromous stuff, because everybody has got bags of money, apparently, that we can't get ahold of, but what Wilson said is really where our brain is, and it's really about freshwater inflow to the estuary, is really where our concern is, and we're trying to play that anadromous game, because of funding opportunities, because they're forcing us to, and so I think the stuff that Stacie mentioned, and the reports you mentioned, really was focused more probably in the Piedmont, and not in the lower coastal plain at all, and now we're just doing that down -- It's gaining some pretty good traction, actually, in the coastal zone.

MS. CROWE: I think you're correct, and, like I said, it mentioned some coastal BMPs, but it was mainly focused on streams and the Piedmont.

MS. HOWINGTON: Okay. What exactly am I putting on this to-do list that is not --

MS. CROWE: I would leave it like that for right now, and let us go dig and find that --

MS. HOWINGTON: Okay. All right, and so I request that people would send me information, and I will fill this in in the future. All right. Then were there any other hands raised?

MS. CROWE: Wilson.

DR. LANEY: Just tagging on to what Paul and Steve have already said, it occurs to me that, as far as that additional information goes, Kathleen, again, because there are so many new folks around the table, that there are what Paul and Tripp have referred to as the Southeast Aquatic Resources Partnership is one of twenty-two national fish habitat partnerships nationwide. The two that occur in the council's area are SARP, and then the Atlantic Coastal Fish Habitat Partnership, and both of them are very much interested in aquatic connectivity, and so it might be, Kathleen, if we look at their planning documents --

We might want to just stick a summary in here, just to let the council members know that, hey, there are these two partner organization out there that have always, by the way, worked very closely to coordinate with each other and be complementary and not duplicative with regard to the projects they're doing on the ground, and we don't need to go into infinite detail about how they work, but, basically, they get money, through Congress, to do good stuff on the ground for our aquatic ecosystems, and so, again, we could -- You and I could talk about that offline, Kathleen, and we can probably get those documents and sort of cherry-pick the stuff that we think would be of most interest to the council.

MS. HOWINGTON: Thank you. Yes, we can insert some links in here too, and that would be good. Brendan.

MR. RUNDE: We're under Number 2 on your report, correct?

MS. HOWINGTON: Yes.

MR. RUNDE: I have something, and, before you start typing, you could tell me whether this belongs here or not, because there's nothing really concrete to this, but it's on renewable energy, specifically the Kitty Hawk Wind project, that I'm starting to get -- I don't know if "concerned" is the right word, but, reading between the lines, my guess is that at least Kitty Hawk South, if not North and South, the cable export corridor is going to wind up going all the way to Atlantic Beach, North Carolina, which is roughly 200 miles through the ocean, and with an export corridor width of something like thirty feet.

As we all know, once you get south of Hatteras, you run into a lot more hardbottom habitat, and so I just want to bring that up and say that it's something that we should all be keeping an eye on, but, again, nothing concrete, and I see that you've written it, and so maybe it's going to wind up in this report anyway, but, yes, that's --

MS. HOWINGTON: That's something, I mean, that the council should be aware of, that it has caused concerns that the cable export corridor would be going to Kitty Hawk, 200 miles of cable, through potentially -- Through EFH.

MR. RUNDE: EFH and even interact with SEFIS, or SERFS, if you will, and I think the preference, from the developer, and from the South Atlantic Council, would probably be that they take all that power north to Virginia Beach, but they're having some serious difficulties arranging that, and that's why I'm starting to believe that it might actually wind up coming south and then overlap more substantially with the South Atlantic Council's jurisdiction than it would if it went north.

MS. HOWINGTON: I don't want to say "the preference for the council", because we don't want to give them that, but the preference for -- Be preferential to take the power to Virginia, but that doesn't seem to be the case currently.

MS. CROWE: Stephen, I saw your hand up, and then we'll go to Mathew.

MR. MORRISON: Since we're on topics of concern, I haven't had a chance to learn a ton about this, but I understand that Emory University, the Rollins School, is doing a study down in Brunswick about all of the different toxic sites, superfund sites, petroleum refinery operations that have happened down in that area over the past many decades, and that research is underway, and sort of we know, somewhat scientifically, but, just from living down in that area, is that there is definitely some there, and they're studying to kind of see what it is, and what the impact is, and I think that's something to keep an eye on too, all the monitoring projects under the jurisdiction.

AP MEMBER: That's specifically in Brunswick?

MR. MORRISON: I think Glynn County, but Brunswick is kind of the epicenter of that.

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

MR. MORRISON: All the salt marshes.

MS. HOWINGTON: All right.

MS. CROWE: Mathew and then Wilson.

DR. JOHNSON: If we're going to go along the lines of adding the connectivity team information to this, we should probably include the Florida ecosystem restoration team, and I can share exact language directly with you through email, but it's a combination of state and federal nonprofit organizations focused on highlighting and prioritizing ecosystem restoration projects in the coastal environment, and there is some crossover with freshwater in that too, but you could add that, and I will send some language.

MS. HOWINGTON: All right. Thank you.

MS. CROWE: Wilson.

DR. LANEY: I just wanted to make sure I heard correctly that, if they use the Atlantic Beach route, that would be 200 miles, by a thirty-foot-wide corridor?

MR. RUNDE: Right, and so the thirty-foot width is less certain than the length of the cable, Wilson, and, I mean, it depends on how many cables they would have to wind up running in that export corridor, but a quick plot on the map shows that, from the southern end of the Kitty Hawk lease area, going around Hatteras, around Cape Lookout, and coming ashore to Atlantic Beach, that's 200 miles, and they're going to wiggle that thing to get around some hardbottom too, and so it could wind up being more than that.

MR. BODNAR: I can give you a little bit of extra information on that as well, and it's been a little while since they last kind of had a meeting with North Carolina on where their proposed landing sites were in North Carolina, but it all has to do with an appropriate substation, and there were two appropriate substations in kind of central North Carolina where they wanted to land it, that one in Atlantic Beach and then also one was up the Neuse River, which required an alignment that actually went through Pamlico Sound, which, obviously, as everyone might be aware of, was not very appetizing to a lot of the resource agencies in North Carolina. You know, it was kind of a, you know, lesser of two evils on that design that they had, being the Atlantic Beach one was a less direct route, that required that longer linear mileage of alignment.

MS. HOWINGTON: Okay. Do I need to add any of that to this? Do we have any other big projects? We're on part two of this.

MS. KNIGHT: I know I'm not as up-to-date on some of this information, but I know the SASMI, the South Atlantic Saltmarsh Initiative, has been doing a lot of work across a lot of our states in the last couple of months, and it might be worth noting.

AP MEMBER: You've got SASMI under Number 5 already.

MS. HOWINGTON: Right, and so I think that's going to be more appropriate there, and I knew it was somewhere, and I just couldn't remember where. Scrolling down, and so, yes, regional projects of interest, and SASMI is down there, as is SECAS and then the Sackett case, that we're going to be talking about later today, and then here's the coordination between regions, and so I can move the Caribbean stuff down there. Okay, and so any other big projects, before we move on to the council habitat policy statements?

MS. CROWE: I think that might be in the potential --

MS. HOWINGTON: Yes, and that's down here, because we already have living shorelines here, and tide gates, and then I actually -- We also have thin-layer placement already in here, and I couldn't remember if we did and --

MS. CROWE: I think, Kathleen, you might want to address this too, and I think that was discussed at a council meeting, and it was kind of tabled for down the road, correct?

MS. HOWINGTON: No, and thin layer placement has not been discussed at a council meeting. Tide gates and living shorelines have been. Okay. We are moving on from big projects. If you have any other big projects, let me know, and we can come back.

Status of council habitat and related policy statements, usage in submitted comments is something that I would like to return to, but I figured that adequacy of existing statements to current activities, and I can say “see graphic below”, and I also have this for the -- Or I can pull the list of current habitat policy statements, and the suggested revisions for existing policies, or creation of new policies, and we can add in the shoreline stabilization policy.

MS. CROWE: So it might be helpful to pull up the list that Pace provided of the existing policy statements.

MS. HOWINGTON: Yes. Okay, and so we’ve got food webs and connectivity, marine aquaculture, climate variability, beach nourishment, and I will go back and get rid of the asterisks in here too, and I will make these the actual full names, versus these are the shortened names that currently exist.

MS. CROWE: So, I believe it was at our last meeting that we discussed possibly adding some tide gate language into the flow alterations policy statement. We did not discuss thin-layer placement, or living shorelines, to my knowledge, and did we discuss living shorelines last time? I don’t think so.

MS. HOWINGTON: Then we already have, for the energy exploration and hydropower, adding decommissioning language, and I’m going to say that’s work ongoing, and, again, I’m going to fix all the -- All right. Adding in tide gate language, potentially, for the flow alterations and do we have any other thoughts for the adequacy of existing statements, and then we’ll move on to the next stuff.

MS. CROWE: Wilson.

DR. LANEY: We already talked about it yesterday, but we are updating food webs and connectivity with respect to the predator-prey portion only.

MS. HOWINGTON: Thank you. I’m going to go back, and I’m going to make these the actual titles, and I will also add in the year that it’s been approved, because that’s something that we should have on this list. All right, and so, for current things, those are the two things that are ongoing, and then potentially adding in tide gate language for the flow alterations, and then do we want to suggest adding in living shorelines to a specific policy, or do we want to wait until the fall, when we have that discussion, and we define what it is, and then we can recommend any kind of alterations then?

MS. CROWE: I’m going to suggest that we define what it is before we --

MS. HOWINGTON: That sounds good. What about thin-layer placement, since that is also something that has come up?

MS. CROWE: Does anyone have any thoughts on where we would put thin-layer placement, or does that need to be a separate type of document? I don’t know that we would want to put that in with -- Nourishment would be the only one where I feel like maybe that could go in, but I don’t know that that’s --

MS. HOWINGTON: Or, again, do we want until we have conversation about what this is, how often is it happening, and then --

MR. MEDDERS: If you want to wait, that's fine, but I also would like to say that, if we're going to put thin-layer placement, we might want to back up and call it beneficial use, because we're seeing a lot of projects that are not thin-layer placement, but are beneficial use of dredge spoil, that is not beach renourishment, and --

MS. CROWE: So I think -- I feel like it might be best to have a conversation about thin-layer placement too, because I think some of the agencies are going to have different definitions of what they call thin-layer placement as well.

MS. HOWINGTON: All right. Sounds good, and so then --

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

MS. KNIGHT: Well, I also kind of like Paul's idea of widening that discussion a little bit, from just thin-layer placement to just increasing beneficial use and some of those other reemerging, or potentially emerging, uses that -- Besides just beach renourishment, to kind of get ahead of that, and so I know a lot of these have a lot of permitting hurdles, and potentially are very beneficial, and so, if we can get ahead of that, then that would be helpful.

MS. HOWINGTON: All right, and so I will put adding a discussion on beneficial use and thin-layer placement into the AP workplan, and so, at the minimum, if we can't get it as a discussion in the fall, we'll get it as a discussion in the spring, but I don't think that belongs in here, since we still just need to start the discussion. All right.

MS. CROWE: Wilson had a comment.

DR. LANEY: Just to amen what Paul and Casey just said about beneficial uses, and, again, one tie-in here, if you're looking at ecosystem-based management, is all those bird islands that I know that we have in the lower Cape Fear especially, Casey, because there have been, in some cases, good proposals to try and maintain the area of those for seabird, colonial seabird, nesting purposes, and, again, the tie-in there is our South Atlantic ecosystem with Ecosim model, and it does include seabirds, and they are, obviously, important predators for some of the prey species.

MS. CROWE: Paula.

MS. KEENER: Thank you. Going back to the energy policy, this element, I don't know if we want to include this or not, but we did discuss the importance of a real focus on stakeholder outreach, and coming up with ways to do that, and then we also discussed the importance of broad dissemination of the research results, and those universal databases, and I cannot remember who mentioned that, but we were talking about common research strategies or collaboration with some of the monitoring research strategies among all of the wind areas. Thank you.

MS. HOWINGTON: All right. So, for current policies, that's the work we're doing, slash potentially could do, and then existing policies, or creation of new policies, we have the shoreline

stabilization policy and a question-mark, and that will -- So more details will be in our AP report of -- Here we go. What is a living shoreline, and is the council looking to develop a new shoreline stabilization policy, and so they will have these notes in there to be able to discuss. Then we'll have this right here, which I will, of course, add some kind of metadata to, and so, that way, it's - - So just a description of what it is, but we don't need that right now though.

Potential future or developing habitat issues or threats, and so this is one that you guys did send stuff in, and so I very much appreciate that. We have living shorelines as a potential developing habitat issue or threat, and then tide gates, thin-layer placement, and, of course, the space program, and we also already have this on our radar. The council has requested information on debris and launches, and we are currently waiting on that information, right, Myra? Are we still waiting on the FOIA for the space program?

MS. BROUWER: Yes.

MS. HOWINGTON: Whenever we get that FOIA information, the next Habitat AP meeting, we're going to be having that discussion, and so that's where we're at with that one. Impacts of sound and pressure on construction projects, and this goes into a study about black sea bass and turbine foundations. Range expansion and contraction, and this is something that all of us have been talking about when it comes to climate change, and this is specifically with SC DNR, talking about different ranges moving up and down. Up course, if anyone wants to add any other explanation, or descriptions, and this is just a South Carolina report. There you go, and so that's what we have right now for potential future or developing habitat issues or threats. Do we have any more additions?

MS. CROWE: Wilson.

DR. LANEY: Not an addition, but just to ask if everybody understands what tide gates are, and what they do, and Jordan and I had a brief discussion after our meeting yesterday, but I'm just asking that question. I know they take different shapes and forms, and they have different impacts, depending on the tidal range in our different states and so forth and so on, but I just wanted to ask that question. Then the other thing that occurred to me has escaped my brain at the moment, and so I will come back on that one.

MS. HOWINGTON: Great, and so does everyone understand what a tide gate is, or at least have a vague understanding of what it is? Okay.

DR. LANEY: I did have a question for Jordan. Jordan, when you all are talking about tide gates, I know there's these -- In South Carolina in particular, and maybe Georgia too, there are these rice field trunks, and would those be considered tide gate structure, type structures, as well?

MS. WOLFE: A type of structure, yes, but, depending on the state that we've seen, they have a different function, and so North Carolina typically has tide gates to maintain tidal freshwater areas to sustain tidal freshwater vegetation, and so we're generally in support of that, because that is a rare form of EFH, and that is utilized by different species that we manage. In Florida, we see -- Or I'm sorry. In Louisiana, and not with our region, but we see that they use tide gates to maintain tidal impoundments for waterfowl, and that's under a different regulatory program, and it's usually pretty positive.

Now, in South Carolina, we've seen a rise in tide gates, because areas that are generally built for residential construction are too low relative to mean high water, and infrastructure is not keeping up with that, and so, rather than doing road improvements, or the necessary adjacent improvements for infrastructure, they're wanting to put in tide gates and call it a day, and then that reduces tidal flow upstream of the tide gate, fish passage issues, and then, also, freshwater -- You reduce the salinity upstream of the tide gate, and then that introduces phragmites and all the things, and so it's just becoming an issue in South Carolina, that we're seeing a rise, and it's the purpose and need behind that tide gate, which is --

I think we need to have that discussion, and so, yes, between the states, there is a different function, and the purpose behind that is very different, but, specifically in South Carolina, we don't want to create that precedent, where we're just overlooking, and it's an oversight, because of the general term of tide gate, and so -- I think the state, and Stacie can provide more information, as far as tidal structures maintained and historical rice areas, which is a different function, a different purpose, for historic properties and not for residential and infrastructure. Does that sum it up?

MS. CROWE: Yes, that's correct.

MS. WOLFE: Cool.

MS. CROWE: Thank you.

MS. HOWINGTON: All right.

DR. JOHNSON: Are we still on potential threats?

MS. HOWINGTON: Yes, we're still on potential threats.

DR. JOHNSON: Well, I'm going to put our IRL-focused people on the spot, real quick, and ask if the recent fungal pathogen concerns impacting mangroves -- Is that well understood enough to include on this list, or is that something that is still developing? We might include that. So there's a newly-discovered fungal pathogen that is impacting some mangroves, in the wild and in nurseries, and it's something that is being monitored to evaluate the status and impact. Again, I can provide some other language more specific.

MS. CROWE: Is it just mangroves, or is it buttonwoods as well?

DR. JOHNSON: My understanding is it's just mangroves, but I could follow-up on that.

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

DR. LANEY: To follow-up on Mathew's recommendation, which I certainly concur with, do we want to think about putting like an emerging disease heading in here, which we could use to cover the fungal thing with the mangroves, but also what about all these spinning fish, you know, in the Florida Keys now, and what the heck is going on there?

I mean, that involves not just imperiled species, but, the last that I understood, and maybe Laurilee or Trish could say more, but, the last time I heard, they had documented at least forty-four different species that were exhibiting that type of lethal spinning behavior, and so -- I think what little I read about it suggested that there was possibly a linkage to a very abundant -- I can't remember, and it was a microorganism, or a zooplankton, or something, or maybe a phytoplankton, and I can't remember, but maybe it would be appropriate for us to have an emerging disease section in here, as a catchall for things like that that are popping up in the aquatic realm.

MS. HOWINGTON: What a beautiful addition to our concerns. I was certainly hoping that we didn't need an emerging diseases section. Anything else?

MR. RUNDE: Supposedly it's a dinoflagellate, Wilson, gambierdiscus, relative to the dinoflagellate that causes ciguatera.

MS. HOWINGTON: I am just saying potentially --

DR. LANEY: I did remember the other thing that I was going to say, Madam Chair, and that is, somewhere in here, and maybe you already mentioned it, Kathleen, that we did -- Those of us who were working on it, which included me and Brendan and a bunch of others folks, and we did finish the South Atlantic Climate Vulnerability Assessment, and so we have that information, and there may be more to come on that, and I think Brendan can add something to it. I think -- I was trying to remember if it was already mentioned in here someplace.

MR. RUNDE: Wilson, my recommendation would be to leave that off for the moment, because there are some happenings there, as far as -- How do I phrase this? Cleaning it up and preparing it for peer review, and, in fact, that's imminent, and it's been mostly cleaned up, and it will be handed to the rest of the coauthors, maybe as soon as next week.

DR. LANEY: Okay. Yes, and I was going to ask you for an update on that offline.

MS. HOWINGTON: All right. Any other risks, or threats, that we've missed, or should we move on to the next section?

DR. LANEY: Well, just to jump back to that for a second, and so the linkage there, and the point I wanted to make, is that, again, back to my passion, which is diadromous fishes, and we did, in the climate vulnerability assessment, even though we don't have designated EFH, we did evaluate a fair number of those species in that assessment.

MR. RUNDE: As well as a whole bunch of other species that are just sort of out there and otherwise not talked about.

MS. HOWINGTON: Paula.

MS. KEENER: Do we want to mention Coral Amendment 10?

MS. HOWINGTON: That's going to have its own presentation and section for the council. I mean, I don't think it would be in the future or developing habitat issues or threats, and I think it would go somewhere else, if you wanted to put something in.

MS. KEENER: It doesn't -- You know, I just wanted to mention that, and it's something that we spent a lot of time on, and I know it's going back up, and so I don't know how it's going to change, potentially, and so that's what made me think about it.

MS. HOWINGTON: Yes.

MR. MEDDERS: One quick comment to your threats, because Matt was talking mangroves, and I wasn't at the meeting, but they had a meeting with our staff, and I guess the folks from the National Parks Service -- They are seeing mangroves in Cumberland now, and so they've crossed the Georgia-Florida border, and so hopefully they don't bring their fungus with them, but there was a lot of concern about what's going to happen with our saltmarsh, and our mangroves, and Georgia has never dealt with that before, and so I don't know it's going to be like.

MS. HOWINGTON: Would we call that like an invasive species or just --

MR. MEDDERS: I think it's just migrating with the climate.

MS. HOWINGTON: All right, and so that's range expansion. All right, and so --

MR. MEDDERS: Mangroves don't really care about political boundaries though, I guess, really, and that's not their fault, but they just --

MS. CROWE: Wilson.

DR. LANEY: It occurs to me, Madam Chair, as we're going through this exercise, and this is, I guess, more of a question for Kathleen, but also the whole AP, is, since this is the first time we've ever done one of these, should we also be thinking, as we go through this exercise, about the possibility that we could use this first one as a template for subsequent ones, and so that helps us for the future reports as well, if we can thinking of generic types of modules that we could plug in here that might cover stuff that we don't have anything for at the moment, but we might have in the future.

MS. CROWE: Kathleen, I know this is to be presented at the council meeting in June, I'm assuming, and so what is your deadline for wrapping this up, just in case others go back and then have something pop into their head?

MS. HOWINGTON: So I don't have specific dates yet. I can come up with them in between now and tomorrow. Currently, in my head, the plan is we fill this out as best as we can this morning, and then I clean it up as best I can, and all of you all send me the stuff that you all have been emailing me, and I've been trying to fill it in, and then I send out to the AP and say you guys have two weeks to fill it out, as best you can. After those two weeks, I'll clean it up again, and then I'll submit it in the time for the June briefing book, and that should give me enough time to get it between now and then. Myra is saying yes. I'm pretty certain that I don't owe you anything until like mid-May, and so I need to have it done before mid-May.

MS. CROWE: So a few weeks.

MS. HOWINGTON: A few weeks, yes, but hopefully we get the majority of it done here, and then everything else is just filling it in and making it pretty. Then, next year, when I send out the email saying, hey, do you have any information on this, you all just send it to me ahead of time, and we don't have to do it during the AP meeting. Just a thought. Go ahead, Mathew.

DR. JOHNSON: A clarity question here, but, with Number 4, potential future and developing habitat issues and threats, do we have any bounds with what is included in here? Is it just habitat, or is it ecosystem, because we're the ecosystem AP, and, particularly, thinking to the spinning fish in the Keys, and there's a still a lot being learned, and we don't know for sure if it's a habitat issue, versus something else, and so --

MS. HOWINGTON: I don't think we're restricted.

DR. JOHNSON: Can we get some clarity on the bounds here?

MS. HOWINGTON: I don't think we have bounds. This is the first report we're ever giving, and I think the bounds are what we had, which I think I closed it, but right here. This is what the council has requested of us, of addressing habitat activities, consultation, habitat policies, throughout the region, and that's it. That's all they really gave us.

We then gave them the outline, and, in our outline, it said habitat issues or threats, and I don't foresee them saying, oh, that's an ecosystem issue, and not a habitat issue, and you can't include that in here, at all. Myra says yes. All right. Anything else for Number 4, before we move on to 5? We might have a little bit of a late lunch, but we're going to get this done in the morning, I promise.

All right. Number 5 is regional projects of interest to the council, and we, of course, have Saltmarsh Initiative and SECAS, and I'm going to insert a link here. Then, in regard to Sackett versus EPA, I'm actually going to add in, I think -- Yes, I still have the note here, and, Wilson, you said you were going to send me some docs, but I actually went and found them, and so ignore that. We are getting a presentation later on today from Shep, and then we can add in, or I can add in, some notes, and you all can give me a yea or nay if that's -- If those notes are okay. Is there anything else? So this is regional projects of interest to the council.

MS. CROWE: Wilson has his hand up.

DR. LANEY: Again, I will talk to you offline about it, just to save time, but there is new movement on that front, and there's a couple of cases, one of which is going to go before the Supreme Court, that could further limit the jurisdictional extent of what's considered wetlands in the U.S., and we might just want to mention that, and, again, it could be just a bullet that's in there.

MS. HOWINGTON: Can you repeat the last sentence that you said, Wilson? Of this limiting --

DR. LANEY: There are some additional cases that will be going before the Supreme Court that could further limit the jurisdictional extent of waters of the U.S., I think is probably the way to put it legally, and you and I can talk about it offline.

MS. HOWINGTON: Yes.

DR. LANEY: But I think the council would be interested in that as well.

MS. HOWINGTON: Yes. Okay. I will reach out to you guys for more information. Anything else? All right. Then we'll go on to the next one. Coordination between regions, and so I need everyone to close their eyes while I scroll all the way back up here and I copy-and-paste Caribbean. All right. The scrolling is finished. All right. Anything else? Other regions that we're interested in?

MS. CROWE: Paula has her hand up.

MS. KEENER: This crosses back to the wind energy policy, and we talked about coordination among regions there, and so I don't know if you want to add it here.

MS. HOWINGTON: I think that belongs in the policy section, and not necessarily in this section, because, while we would be suggesting that we should coordinate with other regions, we're not actively doing that just yet. Anything else that you all are working on with other regions? Go ahead.

DR. LANEY: You mentioned, and it was in here, right, and I know you put the fish habitat of concern document in here, and was it -- Did we already scroll past it, or we haven't gotten to it yet? Anyway, it's in there, and that is something that, you know, Pace was very much supportive of, if not the initiator of, and I think it's above where we are now, but I just wanted to make sure that everybody knew --

MS. HOWINGTON: Here it is.

DR. LANEY: There it is, under c, but that document has finally been completed, and it is online, and it is viewed as sort of a living document, and so, if anybody on the AP sees additional literature that they think would be beneficial in terms of clarifying, or modifying, those FHOC designations, that would be much appreciated.

There were a couple of species, and I think maybe black sea bass was one of them, that were deemed, you know, so ubiquitous, and such habitat generalists, that we didn't define anything as FHOC, and so we would be particularly, we being the Habitat Committee, would be particularly interested in knowing about any studies, literature, et cetera, that would enable us to say, hey, this is a habitat of particular concern, a fish habitat of concern, for a given species that may be solely managed by ASMFC, and those are the ones that we tried to focus on, because the jointly-managed ones already have EFH, and so I would just make that as a comment.

MS. HOWINGTON: Okay. We're back to coordination between regions. Are there any other -- I added in there's a spatial mapping project ongoing currently with the Mid-Atlantic region and the South Atlantic region. This is in regard to the windfarms in the South Atlantic. Any other regional projects that you all are working that would be of interest? Benjamin.

MR. THEPAUT: I hesitate to mention this, but there's a coordination going on between the coastal zone management programs in North Carolina, South Carolina, and Georgia regarding the red

snapper and some of the council stuff, and so we're working on that, and, again, I'm just happy to be here.

MS. CROWE: (Ms. Crowe's comment is not audible on the recording.)

MS. HOWINGTON: Sure. Give me some language.

MS. CROWE: But is it repetitive, because we've already --

MS. HOWINGTON: If we've already mentioned it, then --

MS. CROWE: We mentioned that at the top, and so maybe we don't want to.

MS. HOWINGTON: The environmental windows? I think we mentioned them at the top, didn't we?

MS. CROWE: We did, yes.

MS. HOWINGTON: Okay. Then we're just going to let it go.

MS. CROWE: Okay.

MS. HOWINGTON: All right. Everyone else think about if there's any other regional things, and I actually think I have one other that I can add, and then just send it to me, if you think of it, and, otherwise, when I send it out, you can add it in. All right. Now funding projects and opportunities, and this was one of those that we added it in as a we'll-see, and does anyone know if there are any ongoing habitat or ecosystem-related funding projects or opportunities that the council should be made aware of?

MS. CROWE: Paula, go ahead.

MS. KEENER: Thank you. There are several people from NOAA here, and I will share what I have learned about the federal budget, because of the trickle-down effect of that, and so most of FY 2024 has been terribly roughed, focused on responding to the budget for the agency, and it's been complicated by a transition between financial systems and other things. The bottom line is that president's budget called for -- It was submitted at the end of March, and it called for a \$5.5 million increase, none of which survived. So they are working on a flat budget, with no adjustment to base, and that applies across the agency, and NOS has been hit particularly hard, and so, overall, it's a 7 percent decrease in the budget.

For FY 2025, there will probably be some cost of living in the federal budget, but, with the November election, we will probably see a CR until Quarter 2 or Quarter 3 of FY 2025, and then FY 2026 -- The agency is in the process of developing that budget, and so, on top of all of that, OMAO, which is the line that's responsible for ships and planes, et cetera, for the agency, has a shortfall, and, by congressional mandate, whenever there is a shortfall within OMAO, the agency has to pull together to make up for that shortfall, and so not great news.

I don't know what that means, and I do know that I saw an email from SECOORA that their budget is in huge jeopardy of being cut, and I do know that some of the monitoring sensors that co-ops run, that they are not receiving maintenance anymore, or for now, and so those are just some of the implications, and I don't know if anyone else wants to add to that, but I think an awareness of what's happening with the budget at the federal level is important, in terms of consideration of projects, et cetera. Thanks.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: Thanks for bringing that up, Paula. I also wanted to add that on the chopping block would be programs like the Cooperative Research program, the Bycatch Reduction Engineering Program, the Saltonstall-Kennedy Program, and these are grant opportunities that researchers in this region, including myself, have in the past been successful in proposing projects to, and these are the types of projects that the South Atlantic Council is often really interested in, like discard mortality projects, habitat use projects, and you mentioned SECOORA, and the cooperative telemetry networks also stand to not receive as much money as they have in the past from the federal government, if the draft budget is what we wind up living with, and so all of those things I think are relevant to include here.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. We don't have details, but I think it's -- From what I have read, the Fish and Wildlife Service budget would also likely get a cut, and one of the things that I just wanted to mention was, you know, there are a whole bunch of coastal refuges in the South Atlantic that either are already designated to have EFH on them or serve as important nursery areas for council-managed, and ASMFC-managed, species. So, to the extent that the refuges are not able to have adequate staff to do management activities on those, it's hard for them to address council concerns, and so I will just bring that up.

I know, in North Carolina, for example, several of the refuges that currently have biologists on staff will no longer have biologists on staff, and that workforce is starting to age out, and those folks are starting to retire, and so that's going to affect several things.

One is the on-the-ground management, but, also, there are tremendous research opportunities on national wildlife refuges, and, of course, in order for those to occur, then any potential researcher has to apply for the refuge for special use permit to conduct whatever refuge they're proposing on the refuge, and then that whole process is impaired if we don't have adequate funding to have adequate staff there to, you know, prepare and review the special use permits to allow the research to happen, and so I just thought that I would mention that as well.

Maybe Tripp and I might be able to delve into that somewhat and provide some actual numbers that could go in the report, Kathleen, at some point, in terms of what the impact would be, not just to the national wildlife refuge system, but also to the national fish hatchery system, if there's an impact there, and then the ecological services program as well, because those are the ones that I think would be of most interest to the council.

MS. CROWE: Paula, go ahead.

MS. KEENER: Following-up on that, I mean, it's not good, and the fact that some of the co-ops' sensors are not being maintained, or serviced, at this time is a direct result of contractors being let go, and so it's not fun times.

MS. HOWINGTON: Okay, and so, on that depressing note, what you said, Paula, I missed it. For Fiscal Year 2026, you had a note on that.

MS. KEENER: I will have to get back to that email.

MS. HOWINGTON: Okay.

MS. KEENER: Sorry.

MS. HOWINGTON: You are fine. Let me just highlight this. Are there any opportunities? I am getting side-eyes. I am going to move on.

MS. CROWE: Well, I had actually gotten an email, recently, about \$7 million available for the U.S. Fish and Wildlife Service National Fish Passage Program, and so I don't know if any of you know anything more about that.

MS. HOWINGTON: I'm assuming that is the IRA funding.

DR. BOLTIN: That is probably -- For BIL, we're getting about \$35 million per fiscal year, and 2026 will be the last year, and actually, the Secretary, and the Director for the service, are announcing our 2024 projects today, at about 1:30 in Alabama, and there will be roughly \$35 million of projects announced. Since it's not 12:30, I can't say anything. She will probably -- I'm not sure if they're going to announce it today, but they've already selected the FY 2025 projects.

Then, in terms of our annual base appropriations for fish passage, that's -- The NOFO is on the street now, and, as a whole, there was about a \$5 million cut in our fish passage program, and then another \$5 million has been targeted by Congress to go to FEMA out west, and so our base operations for fish passage across the entire country is reduced, and is that because of BIL? I don't know what Congress was thinking there entirely.

Another aspect, in terms of the service working with other federal agencies, and states as well, is the transformational project list, where they're basically looking for larger-scale restoration activities, and so that would be another avenue to explore, kind of how can you identify, at least from a fish passage perspective, multiple projects that can move forward, and we just have a funding shortage at the moment, and try to highlight where there could be some collaboration from a funding perspective.

We've targeted a lot more inland-type of activities, with small-body fishes that historically have not gotten a lot of attention, but there are certainly some coastal projects that can move forward there. I know we have a consideration for a project along the Chattahoochee, and Georgia Power is looking to dispose of three structures there, but the transformational project list is probably something the council should be made aware of, that activity.

MS. CROWE: I think Scott has something.

MR. KATHEY: I just have a quick question for Paul. Paul, you were mentioning some money earlier that you were trying access, or tap, and is that what Tripp is talking about, essentially the same thing, or is that --

MR. BOLTIN: So DOT also got BIL money for fish passage work, and that was to focus on anadromous species, which was limited to Atlantic coast, the Pacific coast, and the Great Lakes. NOAA has BIL money, and I think the NOAA and the service have IRA money, but the DOT is I think what Paul was talking about earlier, and that was mostly for --

MR. MEDDERS: We have a potential DOT project, which we're excited about, and our Georgia DOT has specific money for an anadromous project, and they were like find us an anadromous project, and we can get the money, but we have applied for America the Beautiful, and we've applied for NOAA transformational, and we've applied for several, and it's all BIL money, and it just has gone to different groups, and we haven't been successful in cracking the nut, and, since I'm saying this, and it won't do any good, but I certainly wish that money would have been dispersed in the manner in which Fish and Wildlife does Wallop-Breaux, or something like that, SFR, based on miles of coastline and those kinds of things, because it seems, to me, that the states with the best grant writers are getting the money.

MR. BOLTIN: At least the 2024 DOT BIL scenario, there was one state that sent in a project. I wasn't that involved in it, but, basically, had there been more submissions from the DOT, state DOTs or whomever with the Southeast, we would have been much more successful, and I'm hoping that, when the 2025 proposal process kind of moves forward, that there will be a lot more successful projects in the Southeast. I think there's an appetite for DOT to fund more in the Southeast.

MS. HOWINGTON: Anything else to add to this? We're almost finished, I promise, and then we'll go to lunch. All right. Regional research and monitoring activities supporting EFH and recommended priorities. This, we're not going to do this this year, and we're going to do it next year, and I was going to ask Myra that, but anyway. I will handle that. I'm highlighting it. Regional research and monitoring activities supporting EFH, Paula, you're first.

MS. KEENER: For what?

MS. HOWINGTON: It said return to Paula for comment for regional research -- We literally talked about this not thirty minutes ago, guys, and what did we talk about?

AP MEMBER: Are you talking about projects that are directly supportive of EFH or relevant to EFH?

MS. HOWINGTON: Both.

AP MEMBER: Okay, and so what about the FACT network, and the acoustic receiver network that's all up and down the Atlantic seaboard? So they're tracking fish movements of tagged fish, sharks, turtles, all up and down the Atlantic seaboard, and I would think that data would be relevant to EFH discussions.

MS. KEENER: I remembered, or I think I remembered, and was this related to the comment that was made on modeling and the potential for the modeling information to expand EFH?

MS. HOWINGTON: I think so, yes.

MS. KEENER: I think it was so, and so there you go. Thank you.

MS. HOWINGTON: So that's the coral HAPC predictive modeling, right?

MS. KEENER: Was it specifically related to corals?

MS. HOWINGTON: I think so, wasn't it?

DR. LANEY: Yes, and I think I remember that we had a previous discussion on that, at a previous meeting.

AP MEMBER: That would be both FACT and ACT, which ACT does the same thing, but more up in the Northeast.

MS. HOWINGTON: Got it.

MS. CROWE: Casey.

MS. KNIGHT: Just to maybe clarify that last one a little bit, I don't know if it's expand, but modify, because, I know, looking at some of the coral maps of HAPC in North Carolina, I think there's -- You know, in relation to some of the discussions we had with the head of tides, that there's a little bit of an overreach in some of those areas as well, and so maybe not expanding, but, you know, honing-in, you know, modifying, whatever other word you want to use.

MS. HOWINGTON: Anything else? Then we'll return to the research and monitoring plan, because I don't have access to it right now. Outreach and communication activities, I filled this out. The habitat website, we're going to review it tomorrow, and I have edited it, and I have added in the habitat plan, FEP 1 and FEP 2, as well as a table that lists what our comprehensive ecosystem amendments are, and what they relate to, and so I will go over all of that tomorrow.

Plans for habitat month, in June, and Earth Day yesterday were underway. Yesterday, the South Atlantic Council staff actually did a habitat outreach thing, and Nick and Kim did it. I emailed them, and they said they did it, and so there we go, and then we're going to plan on doing something for habitat month as well, and then, after that, I'm going to be bringing an outreach and communications plan to you, and we all can discuss what do we feel like the public needs to know about habitat and ecosystem, and what needs to be clarified? Do we need to define "tide gates"? Do we need to define "living shorelines", and like what is important, and who is our audience, and so those are two things that are going to be coming forward, but we're not working on them yet, and so they can't be in here.

Any other outreach? Anybody else involved in outreach and communication? Just me? Okay. Cool. Then are there any -- This is the catchall of any anticipated future habitat activities of interest.

MS. CROWE: I saw Paula and Wilson with hands up.

MS. KEENER: Well, I just wanted to go back to the previous bullet, or item, and we already discussed this, but the importance of outreach, stakeholder outreach, for the wind energy development, and that is currently going on in our region, and so I think collaborating with those that are involved in outreach efforts is important. I remember -- I don't remember who said it, but I do remember the comment of engage early and often with the wind stuff. Thank you.

DR. LANEY: I'm not sure where this one goes, but I will update everybody on it, and so recall, at one of our past meetings, Mel Bell was here from the council, and Mel talked about the need for additional funding to complete the outfitting of the new research vessel that South Carolina DNR has acquired that will be used for some of those very important fishery-independent surveys.

One of the things we did, as a result of a recommendation by Anne Deaton, was to go to the four South Atlantic state affiliates of the National Wildlife Federation, which are the South Carolina, North Carolina, Georgia, and Florida Wildlife Federation affiliates, and asked them if they would be willing to write a letter to NOAA encouraging NOAA consideration of funding some of those needed vessel upfits, and so that was done. The four CEOs signed-off on that letter, and it was sent, and, to my knowledge, and based on inquiries to them, we haven't gotten any sort of acknowledgement from NOAA, but I was recently contacted by Blake at South Carolina DNR, to ask if they could use that letter.

They have been successful, and Stacie probably knows a whole lot more about this than I do, but they have been successful in getting a good bit of the funding that they needed to outfit the Lady Lilian, but they're still looking for another million dollars, I think, for needed outfits, and I have all that information, but presumably the council, Trish and Laurilee, has already heard about all that.

The ask was do you guys mind if we use that same letter again in trying to secure the additional funding that we need, and so the answer was, no, we don't mind, and it's a matter of public record that the four state affiliates were on record as supporting, you know, funding to be used for that purpose, and so that was given a green light, and the South Carolina DNR will use that letter in their efforts to secure the remaining needed funding, is my understanding from Blake anyway.

MS. HOWINGTON: Okay. Would that go under like the funding opportunities, that the Habitat AP supports resubmission of a letter?

DR. LANEY: I think it goes more under Number 9 or Number 10, Kathleen, and it's sort of under outreach and communication. I mean, in this case, South Carolina DNR is responsible for maintaining this regional asset that is involved in conducting these important South Atlantic fishery-independent surveys, and so they reached out to NGOs that they thought, or well they knew, that would be supportive of that, because the National Wildlife Federation passed a resolution of support for marine conservation, back in 2020, and they were aware of that, and so I think it would probably fit under Number 9 better than any other place, and, again, we can flesh that, any appropriate details.

MS. HOWINGTON: I'm going to highlight you on that one, and you can give me a little bit more detail. All right, and so anything else that you feel like could be of interest, and then I actually have pulled up the research and monitoring priorities, so we can review that real fast, to see if there's anything that we want to add, and then we will be done a little bit late, like I said, but we will be finished. Anything else, knowing full well that I'm going to email this to you and you can always add stuff? Okay. Cool.

Here is the 2023 South Atlantic research and monitoring plan, for the habitat research and monitoring needs. I will give you a second to read through at least what we have right here, and then I will scroll down. I am seeing people staring at me, and so I'm scrolling just a little bit more, and the highlights are the council's priorities, right?

MS. BROUWER: (Ms. Brouwer's comment is not audible on the recording.)

MS. HOWINGTON: Okay, and so, when we wrote the outline, we defined this as we would do this every odd year, and so Stacie and I decided that odd meant odd number, and this is from 2023, and so should we wait until next year to do it? Cool. All right. Then so, for us, it will be completed every odd year, with the next review in 2025. Sound good? Cool, Myra?

DR. LANEY: So that means we're way ahead of the curve then, right, for a change?

DR. JOHNSON: I just wanted to clarify. For information relevant for what we want to put in here, there's regular monitoring and mapping programs in Florida for vegetation, submerged and emergent.

MS. HOWINGTON: Okay.

DR. JOHNSON: Do we want to include that on this list, or does that fall outside of this list?

MS. HOWINGTON: No, and we have a submerged aquatic vegetation policy, and so I think that completely applies to this.

DR. JOHNSON: I will provide that to you.

MS. HOWINGTON: I'll figure out where to put it. Regional projects of interest?

DR. LANEY: To tag onto what Mathew just said, so North Carolina also has, you know, an ongoing SAV mapping program, and Casey is very much a part of all that too, and that's done through the Albemarle-Pamlico National Estuary Partnership.

MS. KNIGHT: I will actually default all of that knowledge to Charlie Deaton now.

DR. JOHNSON: Would it be more relevant under the regional research and monitoring activities?

MS. HOWINGTON: Okay.

DR. JOHNSON: So Number 8 on there.

MS. HOWINGTON: Thank you.

DR. JOHNSON: I'm adding that to my list of verbiage to get to you.

MS. HOWINGTON: Thank you. I appreciate it. All right. Does anyone else have anything else that they want to add to the annual report prior to my cleaning it up, emailing you, and asking for the specific things that I just highlighted and sending it back out to you to add more stuff? Okay.

DR. LANEY: No, but just a question, and you have referred to the spring meeting for when we're going to have some of these discussions.

MS. HOWINGTON: The fall meeting. I keep saying spring, and I don't know why.

DR. LANEY: Okay. I just wanted to make sure that you weren't talking about spring of 2025.

MS. HOWINGTON: I'm not crazy, and, no, I mean fall. In fall, we are having the discussion of the living shorelines and the tide gates. I don't know why my brain keeps saying spring, and it just does. Maybe it's because it's cold, and my brain thinks it's fall now. I apologize for any confusion that happened, and I think I fixed that, where I had written it down, but I will double-check wherever we had put that down, that it would be coming up in the fall. I will double-check and not force you all to sit here and scroll.

All right, and so we have annual activities report, draft report wording, and, like I said, the plan is I will take this report that you've just given me, clean it up, add in some links, send it back out, two weeks to try and fill it out, and then send it back to me, and I'll clean it up, and we'll submit it to the June council and see if they like it, see if it's what they want, and, if not, they will give us feedback, and then we'll do this all again next spring, of 2025, and I'm going to start just adding the year in from now on. All right. So then, with that, Stacie, we can go to lunch.

MS. CROWE: Okay. I think that wraps up the morning session. Thank you, everyone, and we will reconvene at 1:30 for the afternoon session.

MS. HOWINGTON: We will start with -- Daniel, are you good at 1:30, and then Shep will be online.

(Whereupon, a recess was taken.)

MS. CROWE: Okay. Everyone, welcome back. We are going to go ahead and get started with our afternoon session, and our first speaker this afternoon is Daniel Kolodny, and he is going to discuss Revisions to the Alterations to Riverine, Estuarine, and Nearshore Flows Policy to Address Threats to the Indian River Lagoon.

MR. KOLODNY: All right. Well, thank you. Good afternoon, and thank you for having me here. I'm the Chief Operating Officer for the IRL Council, which is a special district of the State of Florida and the host agency for the Indian River Lagoon National Estuary Program. I want to thank the advisory panel for having me here today, and especially Laurilee Thompson, from the council, to give me this opportunity to discuss the issues facing the Indian River Lagoon with you.

Dr. De Freese, the Executive Director, gives his apologies that he could not be here in-person, and he's currently undergoing cancer treatment.

Today, if you're not already familiar with the Indian River Lagoon, I'm going to kind of give you a little history of what has happened to it, and then I'll go into how that degradation has concerns, and impacts, on fisheries. I will give you an overview of what the estuary program is, and what we do exactly that's unique among organizations focused on ecosystem restoration. I will give you some updates on the progress that's going on, identify some of the challenges ahead, and, lastly, I'll focus on some solutions, and opportunities, that could be transformational in achieving a healthy estuary.

Let's start kind of like with an overview history of the IRL and the issues it faces, and, just for everyone, this picture is an aerial view of the southern lagoon, looking out at St. Lucie Inlet near Stuart. The Indian River Lagoon is actually three water bodies along the east coast of Florida. It's Mosquito Lagoon to the north, the Banana River, and the Indian River Lagoon proper. It's very spatially and temporally complex, you know, and what that means is, when you think of a typical estuary, kind of like Tampa Bay, Chesapeake, Puget Sound, you know, it's typically a lot of tributaries empty into a bay, and then they have a lot of exchange with the ocean.

Indian River Lagoon really doesn't have that. You know, it's over 150 miles long, and rarely a mile wide, and there is also only five inlets along that entire span, and so there's really very poor ocean flushing. They're also not spaced evenly, and there is really no tidal influence in many segments of that lagoon. You know, wind is kind of the primary driver of any kind of flow within this system, and so things kind of start to slosh around as the wind changes.

Some would argue that stormwater has really altered that regime, and flow, as well, and I'm going to go a little bit more into that later. We also have over forty bridges and earthen causeways along that entire span, and that further restricts flow and compartmentalizes the IRL, and so, in some instance, what we consider the residence time, or the time it takes one drop of water to enter the lagoon and make its way out an inlet, is up to two years, and so, in some areas, you know, it takes a long time for anything to happen, but what goes in the lagoon tends to stay there, for instance.

It's very rich in biodiversity, because of this long length, and it spans over two ecotones, both tropical and subtropical, but it's not only biodiversity-wise rich in species, and it's also very rich in diverse community human-wise. There is over 1.6 million residents right now in this seven-county region, and one of those counties has one of the fastest-growing metropolitan areas in the whole country.

All of this uniqueness about the system makes it also very highly vulnerable to a number of different stressors. The IRL can be impacted by shock stressors that you see there at the top, like hurricanes, tropical storm events, wastewater treatment failure discharges, and, just to give you kind of an idea of that magnitude, between 2009 and 2018, more than twelve-million gallons of untreated sewage spilled into the IRL, and this is from data from the Florida Department of Environmental Protection.

Another shock stressor is discharges from Lake Okeechobee, and so this is that magnitude of fresh water coming into the system. When that happens, all that water goes through the St. Lucie River,

and it drops salinity to near-zero for extended periods, and it inputs enormous amounts of nutrients, sediments, and other possible toxins, like blue-green algae.

Another type of stressor that you can see here are the chronic kind, and all of these are detrimental, but what I want you to really focus on is that one at the bottom there, that wetland loss/watershed alteration, because that one drives a lot of these other bullets in the list that showcases here those connections to all the flow, the riverine and estuarine flows, that you're kind of discussing here today.

I want to dig into this alteration a little bit more and show you kind of how impactful some of these have truly been to this system. You know, here's a look back at one of the most impactful alterations done in the IRL, and this is the NASA Crawlerway, built in the 1950s, and it completely cut off flow between the Indian River Lagoon and Banana River Lagoon, through Banana Creek, and so you can see a picture on the right there, where, back in the 1940s, this was a really -- It had a multitude of different wetlands in that area, and they were all shallow marshes, all interconnected, and it was really a centerpiece for fishing and hunting around the turn of the 19th century.

You know, I also talked about different bridges and causeways, and this map kind of shows you that magnitude, and this really changes that flow that I mentioned earlier. All of these lines and dots on the map represent a bridge or an earthen causeway, which have severely restricted flows and created this compartmentalization that I mentioned earlier. Most of the earthen causeways are in that white box that you see that's zoomed-in, and that's Brevard County.

There has been other alterations, and so here's a pretty good example of changes to shoreline and habitat, and so, in the late 1800s and early 1900s, a significant portion of the IRL shoreline consisted of coquina outcropping, which acted as kind of habitat for fish and invertebrates, and, as florida began to grow, a lot of that coquina was actually mined for road base construction, and so now the prevailing shoreline is kind of what you see there on the right, these seawalls and bulkheads.

A study was done by Donnelly et al. in 2018 that found that 95 percent of IRL shorelines along navigational channels had been modified by human activity, with over 50 percent being hard-armored, 45 percent being artificially steepened, often leading to severely eroded escarpments, or non-natives, like Brazilian and Australian pines that have now replaced native vegetation, and this is really important, because those natural shorelines, like sandy beaches, are disappearing, and they're essential habitat for horseshoe crabs. This lost potential to IRL shoreline ecotone has innumerable impacts to lagoon water quality, biodiversity, and the resilience of coastal communities.

Here's just another example of drastic alterations and loss of wetlands, and this is Indian Harbor Beach and Satellite Beach in Brevard County, and you can see the photo on the left, and there was pretty much no development. It was all citrus farming back then, and so you can see Merritt Island, and this is actually where Banana River Lagoon and Indian River Lagoon meet, at the tip of Merritt Island there, and you can actually see the road and old Mathers Bridge, and it's an old swing-style drawbridge, to allow for waterway traffic.

You can see the photo on the right is an aerial today, and so all of that has created an enormous amount of stormwater, when it rains. All that water that used to filter through just now pulses

straight into these lagoons and brings tons of fresh water, sediments, nutrients, and the like into the system.

This is kind of just a really good -- You know, this really drove the system to being degraded, and this is just a great infographic to kind of show you that, once you change that land, you have all these different types of pollutants, multiple sources, and now multiple pathways to enter the system. It's really led to that pulsing of stormwater that I mentioned, and these pulses bring pollutants that -- You know, besides nutrients, they bring such a large volume of fresh water that they change that salinity regime in the system, and it can have really big impacts on essential habitats. Also included are how, once these pollutants are in the system, they start to create this cycle, and a feedback loop, causing continual problems, and these problems are encountered throughout the entire lagoon.

All that chronic stress finally causes the lagoon to hit a tipping point, back in 2010 and 2011, and, in that 2010, period, we had a really cold winter, and ten days in December below forty degrees, and seven of those were below freezing. The cold actually killed a lot of the tropical species, and this massive pulse of nutrients from that biological decay fueled our first major algae bloom, which was referred to as the super bloom in 2011.

What made this bloom different from the other historic blooms that we had in the past was that it was a new microalgae never seen before, never at this cell level count, spatial magnitude, or duration, and, since 2011, there have been almost annual blooms of this magnitude, and so you can see some of these images here. These blooms are catastrophic. They create fish kills. When the bloom itself collapses, the biological decay by bacteria exhaust all the DO from the water, and so you get these fish kills, but they also can create other issues, like toxicity to humans and biological life, and they also shade seagrass for such a long duration that it does, because, you know, like most plants, seagrass needs light to thrive. That's really important, because seagrass is an essential habitat for many species in this lagoon.

The southern lagoon, and I kind of mentioned this earlier, these discharges from Lake Okeechobee, and it's also impacted by all those chronic stressors, but we now have these freshwater discharges, and it can discharge up to nine-billion gallons a day, and that shifts, like I said, the regime from this brackish saline to completely fresh water. These discharges actually just recently happened, and so we had an El Nino winter, and, because there was so much rain during this winter period, Lake Okeechobee was at a level where the Corps of Engineers was prompted to do these discharges, and it started in February, for over forty-five days, and so it ended on April 1, but, unfortunately, this has probably -- All the work that was done in St. Lucie Estuary restoring oyster reefs has probably all been damaged by this, by these discharges.

Now you've kind of seen the main issues here in this regime shift of the system, from macrophyte dominated to microphyte dominated, and, you know, how has this led to concerns for fisheries, and, no, I doubt we're going to have to deal with otters decimating the spiny lobster population, but I thought this was a really appropriate picture, because things we don't expect to see aren't really that uncommon anymore.

Let's go back to seagrass and how essential that habitat is to fisheries. This graph was actually produced by the St. Johns River Water Management District. They've done a really good job of long-term monitoring of seagrasses throughout the IRL. They have numerous transects that they

visit every couple of years, to measure the length, percent cover, and, thus, be able to kind of determine the total extent, and, you know, very prominent in this graph is that first major algae bloom, and that massive loss, and you can also see another drop-off in 2016, after the brown tide, and the most recent bloom we've had in 2020, with another drop there.

So what does it all mean though? In 2016, the study was conducted by the East Coast Regional Planning Council and the Treasure Coast Regional Planning Council, trying to capture and evaluate this economic valuation of the IRL. It was estimated at over \$7.6 billion annually are generated, with significant value coming from aerospace and defense, but some of the other big numbers there, you know, are recreation and tourism, at \$1.5 billion, the green industry at \$767 million, and living marine resources, like fisheries, at \$48 million.

Granted, these values are eight years old now, and they were calculated before the pandemic or inflation, but -- They're also before some of those catastrophic things, like the fish kills mentioned earlier, and so, even in this 2016 snapshot, there were some really significant trends being seen. There's like a 72 percent reduction in harvested pounds of shellfish, a 54 percent reduction in pounds of fish harvested, and some of this was from that first initial super bloom, but what else was going on here?

The filter feeders in the lagoon were under assault from overfishing, and so, here on the left, you can see clam landings of mercenaria, and on the right is oyster landings, and just note that Volusia County is not part of that oyster diagram on the right there. There is still a viable commercial harvest in the northern Mosquito Lagoon. However, the reefs are declining there as well, due to the expansion of mangroves. This loss of filter feeders, from the 1970s to the late 1990s, all played a role in this eventual collapse of the system in the early 2010s.

You know, here's where the rubber really meets the road on fisheries. Some of these graphs are a little hard to interpret, but I've kind of tried to show you, you know, in these areas that you can see here, how this plays out in fisheries. You know, many of the species in the snapper grouper complex spend a portion of their lifecycle in the estuary, and the Indian River Lagoon accounts for a lot, because they take up such a large portion of Florida's east coast.

Trends can be seen here in many of the species monitored by the Florida Fish and Wildlife Conservation Commission, in their fisheries independent monitoring, or FIM, and I would like to thank Derek Tremaine, of the Melbourne office, for providing this data for me, and so you can see here trends in size classes of seatrout and red drum. One of the most stark observances you can see is that drop in 2010 and 2011 of seatrout, shown in the blue, after the super bloom. Similarly, in red drum, you can see, in 2010 and 2011, events did have an impact, as shown here. More drastic, however, is that drop in red drum after the 2015-2016 fish kill from that bloom decaying.

Here is trend data for blue crab. The left side is the northern Indian River Lagoon, and the right is the southern Indian River Lagoon. Of note is the size class drop after the 2011 super bloom, shown by the blue arrows, and, if you're wondering about the lack of data on the size class for the southern, it's because they just weren't collecting data prior to 2016.

Here's trend data for commercially-important shrimp. This is a mix of pink, brown, and white. Again, the 2011 bloom, and the 2018 bloom, stand out, and subsequent years have relatively low numbers, and low error bars, shown in these blue arrows here.

Here's some trend data for mangrove and mutton snapper. What seems to be relevant is a response to the freeze and bloom in 2010 and 2011, as shown by these blue arrows. The 2010 peak in the north IRL is likely overstated, due to error bars and a result of a handful of large catches. The 2017 peak in the south IRL is also likely due to similar reasons, as is the 2020 north IRL peak, but more concerning is the trend from 2018 to 2022, which could indicate a habitat shift away from areas that FWC was able to effectively sample with their gear. Similar shifts were also to docks and other structured habitats, and they were actually shown in seatrout after the seagrass loss.

Mutton snapper is kind of hard to get any interpretation from this chart, due to large error bars, but anything -- The small error bars, as shown in the red arrows, are those little dips, and, you know, there are some really low error bars on there, and so that probably indicates some confidence in those low numbers right after those two blooms in 2015 and 2018.

Now you've seen the issues, and you know what's happening in the IRL, and I've given you a little history on the fisheries, and I'm going to give you a little history about the National Estuary Program and the IRL. It was originally formed in 1991, with the St. Johns River Water Management District. Once that 2011 super bloom happened, there was kind of some urgency to reorganize, and restructure, the NEP to kind of serve all the stakeholders in the seven-county region, convene them to address all the problems, and work towards solutions.

You know, what is an NEP though? We're actually one of twenty-eight deemed by Congress as an Estuary of National Significance. They're all authorized under Section 320 of the Clean Water Act. The unique thing about NEPs is they're non-regulatory, and we use a form of governance called network governance, through what we call a management conference network. It brings scientists, resource managers, and even concerned citizens, from all stakeholders in the region, together to discuss the problems, come up with a collaborative, coordinated, and community-driven approach.

The restructuring of the IRL NEP was done in 2015, where the IRL Council was created, through an interlocal agreement of five counties, and so Volusia, Brevard, Indian River, St. Lucie, and Martin Counties, and two water management districts, St. Johns River Water and South Florida, the Florida Department of Environmental Protection, and EPA. They all become funding members.

Here's what that management conference structure from the IRL NEP looks like. At the top is our policy board of directors, made from eight groups that make up that interlocal agreement, and the management conference is made up of several committees that make recommendations to the board of directors, and this includes a management board, which has -- We're resource managers, and stakeholders from the watershed are appointed. Inside that committee is a finance subcommittee that reviews budgets, audits, and any other relevant financial aspects of the program, and there's also a STEM advisory committee, made up of scientists from relevant universities and science-driven institutions working on lagoon science, and, finally, there's a citizen advisory committee, made up of concerned and engaged citizens from the watershed or that are from nonprofits with interest in the lagoon.

One of our most important roles, as an NEP, is to develop a comprehensive conservation and management plan, or CCMP. It's a ten-year plan, and it can be updated after five years, if needed,

and the last full update was done in 2019, and an update is expected in 2025. The document is developed with input from all the stakeholders, and its main goal is to really assist these stakeholders in identifying what parts of the plan they can implement and then track the progress of that plan.

At the heart of our CCMP is the vital signs wheel, and so it was identified thirty-two specific vital signs, which all have sometimes many action plans within them that need to be completed to help the lagoon to become a healthy estuary.

Each vital sign is also ranked by its level of urgency, or health concern, and health concerns are critical, serious, undetermined, or stable and improving. Six are considered critical, and they include wastewater, stormwater, impaired waters, harmful algal blooms, seagrasses, and CCMP implementation and financing.

What's important is that these thirty-two vital signs are not independent of each other. Many are linked together, and so taking action in one could have trickle-down effects or impact many others, and so, for instance, if you look at the living resources portion of the right-side of that wheel, you can see forage fishes and fisheries are in there. Taking action in water quality, like stormwater, has a direct impact on improving habitats, which could lead to improved forage fishes, and, thus, fisheries. Small changes can have drastic changes across many different vital signs.

Our success really hinges on communication, coordination, and collaboration of this shared vision. We have worked really hard to foster this culture in the IRL region, and some of the ways this culture has evolved is through issuing funding for stakeholders to complete CCMP projects. For the past several years, we've issued five opportunities annually, listed here. With the issuance of the Infrastructure Investment and Jobs law funds, the NEPs, across all twenty-eight, have got \$909,800 for five years, and so now a sixth opportunity is being developed to further implement the CCMP. Since the IRL Council was funded, we have funded over \$15 million, if you were to include the current fiscal year 2024 projects.

We also strive to be as transparent as possible, to build a reputation as a trusted source of information, and one way we worked really hard on that, recently, is to build a project database, or an interactive web app, that allows you to query information on all of the projects that the IRL Council has funded. Further work is going to be to try to go back into the historical, when the NEP was with the St. Johns River Water Management District, and move those projects as well onto it, to be able to see the entire thirty-years-plus of projects.

Another way we assist our stakeholders is we assist them in chasing other funding opportunities. There's a lot of funding available out there, from many different sources, and a lot of our stakeholders just don't have the capacity, or the expertise, to write a grant that is competitive, and so we have three grant writers on contract to assist. The NEP covers the cost of those grant writers, and pays their time to help and assist, and so there's no cost to the applicant who is submitting this grant, and here's just some of those successes that you can see listed on the slide here, and some of these return on investments are pretty high, like over 180-to-1, and so a really good amount spent on these.

You know, we also really work hard to seek and secure new sources of funding, and, you know, I kind of just mentioned the IJJA, and one of them is that RFP that I mentioned. Because these

federal funds were a one-time appropriation, we really decided to focus on two investment strategies of building restoration infrastructure capacity and building community capacity in our priority communities.

A significant portion of that funding, almost \$2.5 million, was put aside for a seagrass nursery network, since we've had such a drastic loss of seagrass, and we knew that capacity, and supply chain, would become to an issue, if we were to start to bring the seagrasses back, and so a competitive RFQ was issued, and five applicants responded. All of them were deemed qualified, and these organizations include Marine Discovery Center up in New Smyrna Beach; Brevard Zoo, which has constructed nurseries in Melbourne Beach and in Rockledge; Sea and Shoreline, also in Melbourne Beach; Harbor Branch Oceanographic Institute in Fort Pierce; and Florida Oceanographic Society in Jensen Beach.

This network would not only tackle seagrass issues throughout the entire lagoon, but they would be that supply needed to overcome supply chain issues and bottlenecks, and so there's many sections of the lagoon that don't have any seagrasses to expand from at this point, and so hopefully this would be able to help accelerate and restart.

One thing of note here is, if you look at that bottom-right photo, herbivory is a huge challenge in this estuary. Because we've lost so much seagrass, there's a lot of hungry predators out there that love to eat it, and you might remember hearing about the unusual mortality event for manatees that made national news back in late 2020, and it's still actually -- We're still in that UME currently, although the numbers from manatee deaths over this past winter were kind of back down to normal, and so hopefully that UME will end soon, but having this --

We're going to have to do herbivory exclusion, and so this photo shows that, you know, the seagrass grew great within the herbivory exclusion side of that fencing, but it was like completely mowed down outside. It couldn't expand outside that fencing at all, because everything wanted to eat it, and there is permit requirements that you have to pull that fencing out after a certain amount of time. As soon as the fencing is gone, they mow it down, and so there's a lot of challenges, and lessons that are going to be learned, as we start to try to accelerate seagrass recovery.

Let's talk a little bit about some events that have happened recently on the restoration front. There's a lot going on. You know, as part of our reporting to EPA, we ask our stakeholders to share information about projects they're working on that help implement our CCMP. Last year, over 300 projects were identified, and these were projects outside of the ones that we fund, and you can see there were over 870 over the last three years.

One reason there have been so many projects is actually the will of the public to have municipalities and local governments improve the infrastructure that had kind of gotten us in this mess to begin with, that stormwater and wastewater failures and all this aging infrastructure.

One of the most transformational grassroots efforts anywhere in the country was the half-cent sales tax, discretionary sales tax, that 62 percent of Brevard County voters approved in 2016. 100 percent of that revenue go to projects to improve the lagoon. The county develops a plan every year, with input from a citizen's oversight committee, and it was originally expected, over this ten-year term of this, to generate about \$300 million, but more recent estimates, as you can see here, put it at over half-a-billion.

These local efforts, you know, have not gone unnoticed at the state level, and so, in 2020, the Clean Waterways Act was ratified, declaring nutrient level thresholds and aiming to remove or abandon all septic tanks in the entire state by 2030. In 2021, the Resilient Florida Program was developed, with significant funding aimed to assist local coastal communities to become better prepared for impacts of climate change. In 2023, the Governor of Florida issued an executive order pledging \$100 million each year, for four years, to go to improving projects that protect the lagoon, or improve water quality, and we saw \$100 million from the legislature in Fiscal Year 2023, and twenty-one projects were funded, and it looks like \$75 million was appropriated by the legislature for Fiscal Year 2024.

You know, there's been a lot of money in the system, over the past eight years now, and, you know, has this really been making a difference? Well, we can say yes, to some degree, and there's been no major -- No widespread major blooms, outside of our normal blooms, like pyridinium, the bioluminescent algae that everybody likes to kind of kayak at night in. The water clarity has been really, really good, and there's been some improvement, natural improvement, in seagrass recovery, as shown in that uptick, and so this was the same graph that you saw earlier, but now you can see that little uptick in the black line. This is the transect length, but recovery is not uniform, as you can see on the right side there. It's been really kind of all up in the Mosquito Lagoon area.

There has been no significant recovery around inlets, to any degree, but the Mosquito Lagoon, as you're going to see here, is pretty impressive, and so there's been little signs of hope to be found, after almost a decade of despair.

You know, like this, and this is hundreds of acres of seagrass, all at once, that came back last summer in Mosquito Lagoon, and it was absolutely breathtaking, as you can see here in these images. It all came back at once though, like I said, which really indicates that it was probably from a seed bank, and we're trying to figure out what was the trigger that got all that seagrass to just decide that it was time to come back.

You know, one of the biggest challenges is staying the course. As you know, the public's attention span is short, and they get impatient, and they're easily distracted, and, you know, we need to have the resolve to continue, even when things are looking better, because we know the next step back is really just around the corner, and it could be a natural event, like a hurricane, or delays in permitting, and it took over seventy years for the IRL to really get to that tipping point degradation stage, and it's going to take decades to come back to something that can be considered healthy. Will it ever be the same? Probably not, but kind of the benchmark would be sustainable commercial fishing. If we could have that, I think we would be at a pretty good spot.

What are some innovative and transformational ways that we can get there, to maybe shorten this timespan? You know, I already mentioned the seagrass nursery network, which hopefully can accelerate that seagrass recovery, if done correctly, and, like I showed you on the previous slide, there's going to be some setbacks, and we've already seen that with herbivory, as I mentioned. As soon as the plants are out, they get mowed down, and so, also, pulses of freshwater from stormwater can have a huge impact on our restoration success.

Here's a really transformational opportunity, and this is with NOAA Fisheries' transformational habitat restoration grant, and we currently have a \$12.4 million proposal in, and this includes fifteen partner organizations, and so, you know, as I mentioned earlier, our collaboration is a really key part of our success, and so you can see it here in this proposal, with what we like to call a community of practice, and so hopefully -- It's going to have tons of different sites, tons of different restoration targets, as you can see here, and a lot of different collaboration with our community as well, through lots of volunteers, as you can see.

Other opportunities are the advancements in monitoring technologies. There is a vast array of sensors now available that can be used to monitor anything from water quality parameters to chlorophyll-a to fish movements, and many, many more, and some of these can be done in real-time now, and so some of the projects the NEP are funding showcase these new sensors, and so we're excited to see where it all leads.

Another transformational opportunity actually came from the Space Coast Economic Development Commission, who asked us to assist them in preparing and administering an RFP for a feasibility study on a twenty-first-century wastewater treatment plant, which is on the mainland, to serve Kennedy Space Center and central Brevard. It's really important, because the current wastewater treatment plant at KSC is not advanced treatment, and it can barely serve the need that's there now, and, as you all know, and you've heard that expansion is coming really fast, and they're not going to be able to handle the need, and so the phase-one study is actually now complete, and phase-two funding is currently being sought.

FPUA has already made the decision to move its barrier island facility, and this was one of the ones that, as I mentioned in that 2008 to 2018 and twelve-million gallons, and they were one of the facilities that was ranked highly in the discharges, and so they've decided to already move their South Hutchinson Island and Fort Pierce back to the mainland, and the new location will be more resilient, will have expanded capacity, will mitigate risks, and it has innovative secondary treatments, and ground is already broken on that new facility.

Lastly, having a regional place where residents and visitors alike can come learn and immerse and educate themselves about the lagoon will be transformational. Brevard Zoo, through this aquarium project, has pledged and signed an MOA with the NEP, where one dollar from every ticket sale will go towards a special RFP administered by the National Estuary Program to advance restoration efforts throughout the lagoon, and this aquarium and coastal conservation center will be key for education about fisheries, managed species, and species of concern.

Additionally, the zoo does a lot of rehabilitation efforts, like with sea turtles, beach mice, and other species of concern, and so this new facility has the potential to expand that capacity, and also lead to aquaculture for fish stock enhancement or other species enhancement. With that, I will go ahead and take any questions that you may have. Again, thank you for your time and the opportunity to discuss the IRL with you.

MS. CROWE: Thank you, Daniel. Let's see. I'm going to Casey and then to Wilson.

MS. KNIGHT: Thank you for the presentation, and I just had some questions about your SAV nursery network. North Carolina is, you know, also very interested in SAV restoration, and do you know a little bit about that permitting process, and where is the seed coming from?

MR. KOLODNY: So, right now, a lot of the material is actually coming from fragments that are found floating in the lagoon, in the rack line, and so they're getting the permitting for that, and then growing it out and letting it expand. There are seven species in the lagoon. However, most of these nurseries are really only focused on two, or maybe three, and I know that one is maybe dabbling in a fourth, but, because of the high light requirements, *Thalassia* is not going to really be looked at, and they're really focusing on *Halodule*, which is the main pioneering species that's found throughout the entire lagoon, but it doesn't have very -- What they're learning, in the nurseries, is that there is -- It will be able to hopefully be shared with all the nurseries, so they can do important research and science on these plants, to find, you know, best practices and best techniques.

Halodule has seeds that are kind of below the sand, and they don't flower, like *Ruppia*, and so -- But they're experimenting with ways to hopefully produce seed, you know, because that's how the Chesapeake was able to recover. They seeded with *Zostera*, and so these nurseries are just up and going, a lot of them, and so hopefully we'll learn a lot of lessons in the next -- But, yes, permitting is a challenge, for sure, especially when we want to upscale, and so say we get to a point where we kind of figure out that, okay, these -- Because there's a lot of pilot projects going on.

If we learn that caging is important, but what is that size threshold where the herbivory kind of gets overdone, because you have so many plants out there, and, you know, once we get to the larger scale, what the permit is going to look like, and can we get the general public out there planting, and there's a lot to look at with permitting, for sure.

DR. LANEY: Thank you for the presentation, Daniel. It was very excellent, and there was a lot of information. I had questions about two historical things, and I know one is -- Was anybody ever able to figure out why that horseshoe crab die-off occurred? I don't remember what year it was, but I know it was a significant die-off throughout the whole IRL, I think, and so that's my first question, and then I have another one.

MR. KOLODNY: I'm not the expert on that, but I would say that, more than likely, it was due to low DO from those algae blooms.

DR. LANEY: Okay, and the other question I had was you mentioned a little bit about fish passage and connectivity, and I know, historically, one of my Fish and Wildlife Service colleagues, Mark Epstein, when Mark was the refuge biologist at Merritt Island, was working really hard to undo a lot of the disconnectedness that happened from a lot of the Mosquito, the diking of a lot of the islands out there, and there still efforts ongoing to try and reestablish the connectivity there?

MR. KOLODNY: There's actually a lot of efforts to reconnect some of these impounded marshes, and you're probably aware that there's the rotational impoundment management strategy, and so they flood them, at certain times, to keep the breeding from the mosquitoes, and a couple of groups have looked at trying to change that management strategy as well, to see if there can be some more fish immigration through those, because, you know, when you have it low, during when they normally would try to travel out, it impedes the nurseries, and so we actually funded a project, with the Indian River Land Trust, to look at some impoundment rotational changes in that strategy, to see if we could get some more fish immigration.

MS. CROWE: Paula.

MS. KEENER: Thanks, Daniel, for the presentation. Can you tell me what the depth range is, and what the mean depth is, in the entire lagoon?

MR. KOLODNY: The average depth of the IRL is four feet, and so it's very shallow, the deepest parts of the intercoastal waterway, and Mosquito Lagoon is actually even shallower than a lot of the other portions of the lagoon, and so, if you ever look at an aerial from space, and you're like why is the Mosquito Lagoon very brown, and that's because it's a constantly turbid -- High-wind events can make it very brown.

MS. CROWE: Very interesting. Casey.

MS. KNIGHT: The only other thing that I had a question about was you said no septic by 2030?

MR. KOLODNY: Yes, and that's ambitious, but that was what was passed in the law.

MS. KNIGHT: So what are other -- How are you all going about that?

MR. KOLODNY: So, actually, the law, the statute, says no septic tanks where sewer is available, or, if there is no sewer available, then advanced treatment septic, and so no traditional septic.

MS. CROWE: Go ahead.

AP MEMBER: Thanks for that presentation. It was really neat to see all that. Can you talk a little bit about the development that's coming, as you've seen the population growth, and, I mean, are there changes in the approaches to that, and the processes and the materials used, the methods, that are going to help prevent kind of what seemed to contribute the most to this over the past seventy years?

MR. KOLODNY: Yes, I think so. There's a lot of push for, you know, green infrastructure and low-impact development. You know, there's potential changes to the stormwater rule, through the legislature, which is coming up. If that gets passed, that could have huge impacts. There is also, you know, county ordinances, and building codes, and so, you know, it is kind of localized to communities, counties.

Local home rule kind of reigns supreme, and so it all depends on the building code, but they do try and incentivize it, you know, but it all comes down to a developer. Whatever is the cheapest thing they can get in that follows the code, they will do it, but we're trying to get them to be educated about best practices, and, you know, there's a lot of effort by the NEP to try to educate everybody, like this is the best way to water your yard, you know, try to use native plants, and so there is little things, but, yes, it's --

AP MEMBER: Are you seeing areas where maybe the home rules are a little bit better than others, and you can kind of point and say look what is going on over, versus what is going on over here? Anything kind of concrete that you point to, or tell us, about what's working better or worse?

MR. KOLODNY: Yes, I think there is, but we try not to -- We try to say, yes, this is good, and we try not to get too political. You know, we don't want to point anybody out.

AP MEMBER: You don't want to make one of the children feel like they're really doing --

MR. KOLODNY: Yes, and, you know, our vision is everybody has got a part to play, and so, you know, do what you can. You know, these guys are doing pretty good work over here, and maybe you can learn from them, but we're not going to say, you know, these guys are the best.

AP MEMBER: Fair enough.

MS. CROWE: Go ahead, Mathew.

DR. JOHNSON: Do you have a timeline on the construction of the numerous earthen causeways? You showed that one image, and I think it was dated 1943, and so I was curious if we had good knowledge of when those others were put in place.

MR. KOLODNY: I don't have it off the top of my head, but there is really good information out there on when they were all built, and so some of them have been modified. Some of them were elevated causeways, and then, when they were, you know, lengthened, or widened, for traffic, or upgraded, some of them were converted to the earthen, because they were dredging the intercoastal, or these canals, and they just used that spoil as earthen causeway.

DR. JOHNSON: What is a general timeframe? Was there a window of when a bunch of these went in together, or is it -- Was that spread out over time, and I see a hand behind you that might have the definitive answer.

MS. HOWINGTON: Come join us, Laurilee.

MS. THOMPSON: So, when the first causeways were built, around the early 1900s, they weren't causeways. They were wooden bridges that spanned the entire length of the Indian River Lagoon, and then, in like the 1940s, is when they started dredging and taking fill and building causeways and then having a shorter bridge span, and that would have been like Melbourne, Titusville, Cocoa, and then the bridges from Cocoa -- They went across both the Indian River and the Banana River, and so those bridges were built in like the 1940s.

Then, in the 1960s, we had a few more that came in, because of the space center, and so the railroad, the Titusville Railroad Bridge, was built, and the 405 NASA Causeway was built, and, in the 1970s, the Pineda Causeway was built, but all of these -- All of these connectors between the barrier islands and the mainland are mostly dirt, you know, big berms across the river, and, as Daniel said, we're a long, long way from Sebastian Inlet, and so all of the causeways have blocked the movement of water, any ability for the water to circulate, because all of the water movement is wind-driven.

You know, my grandfather -- I remember standing on his fishing pier, when I was like seven or eight years old, and we were looking south, down the river, and all the big cranes were there building the NASA Causeway, and my grandfather had a seventh-grade education, but he told me then, and he said that the causeways -- All the causeways they were building, because of all the

new growth and development that was coming, were going to be the death of the lagoon, and he was right.

When I was a kid, when the wind would blow out of the north, it would push the water in the lagoon south, and you could walk across the northern end of the Indian River, and there would be exposed bars, with brass on them, and you could walk all the way across the river, and you can't do that now. There is a little bit of water movement that happens now, but, with seven causeways between Titusville and the Sebastian Inlet, we don't -- We just have no water movement, and we have a year-and-a-half to two-year residency time right there in the Titusville area.

MS. CROWE: Thank you, Laurilee. Go ahead, Scott.

MR. KATHEY: Daniel, back to the septic question. Has any funds been set aside as an incentive program for homeowners, you know, where they will match them 50/50 or something, to help them, because that's a big-ticket item for a homeowner, to replace a septic system and put in a brand-new advanced treatment, and I just wonder how they're going to get them there.

MR. KOLODNY: There are a lot of great opportunities out there, and so, you know, Brevard County has applied, and received, a lot of grants through the state for those advanced septic treatments, as part of the Save the Indian River Lagoon Tax, and they are helping assist those priorities, and so they kind of did this look at the whole county and say, you know, where are our closest septic tanks to the lagoon-receiving waterbodies, and, you know, look at sediment and a bunch of different factors to kind of identify those high-priority ones, and so they are providing funding to help assist those homeowners to convert as well.

MR. KATHEY: So they're basing that on geographic realities, rather than socioeconomic levels, and it's just like we need to be strategic about which one of these septic tanks that we need to address first kind of thing?

MR. KOLODNY: Yes, and they're definitely addressing, you know, the biggest bang for the buck on their funding, you know, and their target for that plan was over a million pounds of nitrogen removed, and I think they're pretty well on their way there, but it's definitely a big lift, and they're working on it, and so --

MR. KATHEY: That money is coming from the State of Florida, and are there any federal funds involved there?

MR. KOLODNY: That money is through that discretionary sales tax, and there is funding from the state to assist some, and there is also talk of using, you know, ten-year no-interest loans, through the state, and there is some federal funding, through I think 319, potentially, for use in this as well, and some of our grants have gone to help those homeowners, and they have done some local municipality match, 50/50, to help those homeowners.

MR. KATHEY: That's good. You're going to get there faster that way than through regulatory enforcement.

MR. KOLODNY: For sure. You know, when the line goes in, you say you have one year to get hooked up or else --

MR. KATHEY: Right, and we're going to help you get there.

MR. KOLODNY: For sure.

MR. KATHEY: Thank you.

MS. CROWE: Mathew, go ahead.

DR. JOHNSON: Another question about flow, and can you speak to any data about flow within the system and any information on alterations to flow under, you know, removal or changing scenarios of these earthen structures that are in the system?

MR. KOLODNY: Yes, and so we actually worked with FIT, and I think it was Dr. Gary Zarillo there, to do a flow study, and so the Florida Department of Transportation had a project in the works for widening the 528 causeway that goes up to Port Canaveral there, and that's that bar you see in the middle, the top one that's straight, underneath the one that kind of curves, right through Merritt Island, and, you know, their plan to do that was just to widen, but to leave the earthen, and we were saying, you know, if you could just go to an elevated causeway, you know, you would improve flow, and so they did some modeling of that flow improvement, and it was like a --

If you also elevated 520, which is the one just below it, you would get a 9 to 17 percent increase in flow, and DOT wasn't interested in that number, and so they said, if you really want to push this, we're going to put you at the back of the list, and so we kind of backed off on that one, but there have been looks into flow improvements, through just elevating those causeways, and so it is significant. You know, 17 percent is not insignificant at all.

Will that improve say -- The St. Johns River Water Management District has a really good model at looking at that 2011 super bloom, and is flow alone going to kind of mitigate those impacts of those blooms, and it wouldn't, and they applied it to the TMDL, and so all the total daily maximum load reductions, through the base management action plans, and they applied that to this model, and it actually did, and so, if you actually reduce the nutrients, without even improving any flow, you would get to where we needed to be, but it would have to be like 75 to 100 percent, and, right now, we're at about 40 percent.

AP MEMBER: Looking back at the data on the different species kind of over time, it looks like there is generally an uptick from the 1990s, when the data starts, to the early and mid-2000s, and do you have any idea what contributed to that? Is that just recovery from a really bad time before, or was there something going on?

MR. KOLODNY: Which one are you referring to? The sea bass or --

AP MEMBER: If you look at the next page, the snapper --

MR. KOLODNY: If you look at this, and it may correlate, again, with submerged aquatic vegetation, and so, if you look at that seagrass graph, it was actually increasing all the way to 2009, and maybe we had a lot of nutrients, and so those plants were happy, and they were starting to really think that this is great, and we like all this grass, and the nutrients, and they're growing, but

then it hit that tipping point, and so, right up to that tipping point, things were -- You know, people were sounding the alarm, but a lot of people were like everything looks great out there, and why do we need to do all this.

AP MEMBER: It shows the importance of the grasses, for sure.

MR. KOLODNY: Yes, and so, you know, you can see, even that little uptick, that the fish were happy, and so you have that uptick in all the fish, up until that point, and then just a drastic drop-off.

AP MEMBER: Thank you.

MS. CROWE: Any other comments or questions? Go ahead, Casey, and then Wilson.

MS. KNIGHT: Just a follow-up question there. I think, if you go to page 17, and looking at clam harvest is kind of the same. Like, all of a sudden, you see like a drastic uptick, in like the early 1980s, and then a drop-off again, and is that just because there wasn't a commercial clam fishery, or is --

MR. KOLODNY: Yes, and there really wasn't a viable commercial fishery until then, and I did a podcast with one of the old fishing guides that saw this happen first-hand, and he was like barges and barges were coming in, and guys were making thousands of dollars a day, and, you know, they were selling them for a nickel, and so that's a lot, if you're getting thousands of dollars a day, and they just absolutely wiped them out, and so they were coming from out-of-state. These guys were coming in on barges and just loading the barges all the way up, because it was so easy, you know, three or four feet deep, and you just get your rake and, bam, you're done. It was easy work, easy money, and it wasn't regulated at all, and so they just took them all.

MS. CROWE: Wilson.

DR. LANEY: I was going to ask, and this might be more of a question for Mathew than for Daniel, but is the Indian River Lagoon part of the Florida monitoring program, and I know you all have a pretty extensive estuarine monitoring program, fishery-independent monitoring, and so is IRL part of that, and what gear do you all use, and how often do you do your monitoring?

DR. JOHNSON: The IRL is broken into the northern and then the southern sections, and FIM operates a monthly stratified independent sampling in both of those sections, and so they're in there monthly, and they produce annual reports that are available to the public.

DR. LANEY: What gears?

DR. JOHNSON: Those date back to --

DR. LANEY: No, gear.

DR. JOHNSON: The gear, there is two gears that are used, and one is a 21.3-meter river seine, and so that's done in both the bay system and in the rivers, and, as Daniel mentioned, on one of those graphs, there wasn't data prior to 2016 for the southern region rivers, and that monitoring

program was expanded at that point, in the southern part of the IRL, and those capture mostly the juveniles, and the large seine is what is used for the in-season abundance for the adults and sub-adults.

DR. LANEY: Then I guess MRIP would be -- As far as the recreational fishing data go, MRIP is monitoring all that? Okay.

MS. CROWE: Okay. If there are no other comments, or questions, Kathleen, do you want to move on to your AP action for this topic?

MS. HOWINGTON: Yes.

MS. CROWE: Thank you so much. We really appreciate it.

MS. HOWINGTON: Yes. Thank you so much. All right, and so, as is tradition, we are going to talk about AP action items, and what are we going to try and do about this, and I think the first part of this conversation needs to be -- I labeled this as revisions to our flow policy, because that's what it felt like would be the most appropriate, but, in hindsight, I should have asked, AP members, what do you think is the most appropriate thing we should do, and, ultimately, we cannot fix what has happened in the past, but we can try to make it where it doesn't happen again in the future, possibly.

So, do you think it is appropriate to maybe look into our flow policy and see if we should revise, or adjust, it, or is there anything else that you think would be appropriate actions for the AP, including recommending things to the council, recognizing that this is technically state waters, but it is also EFH? So, with all of that, please discuss.

MS. CROWE: Does anyone have any comments? I'm going to go over here, with Stephen first.

MR. MORRISON: I'm going to ask this question first, because I think you probably will say this is not what we do, and I'm new, and so that's a fair answer. I was just looking at the map of where all these NEPs are, and it's really -- Like I didn't know much about this program before looking through these materials, but our sort of -- From the Carolinas down to Florida, there is two of these here, and then you look at a ton up in the Northeast, a bunch in the Gulf, and I'm kind of curious --

We have a lot of important estuaries within the SAFMC jurisdiction, and, obviously, we don't designate those, but sort of looking at ways to encourage programs like this, that are restorative, and are doing things that can come and give us a presentation on here's what happened, and here's what is being done to fix it, and ways that we can -- You know, whether it's through using EFH, because that's what we do, and maybe working with hearing more from folks that are doing those NEPs and implementing some of those types of efforts and coordinating with them, and, frankly, for me, learning about them, so that those principles and methods and things can be applied to help maybe prevent some of this in the future.

MS. CROWE: Wilson.

DR. LANEY: Thanks for that, Stephen, and so two thoughts have occurred to me. One was that I was going to give you a little bit of history on the whole freshwater inflow thing. When Roger Pugliese and the then AP conceived that whole idea, our thought was to go back and look at the historical flow regimes, to the extent that we could, and we could do that for a fair number of the North Carolina river systems, because we had long time series of, in some cases, pre-dam data even, and so we could look at the historical hydrological regimes, and then we could compare that to what the current regulated regime looked like and try and make some inferences about, you know, what sort of adjustments do we need to make to try and ensure that the estuaries remain sustainable.

Then, with respect to the other NEPs, I think the report that Stephen has put together here is a really excellent model, maybe for some of the other NEPs, and my intent would be to -- As a matter of a fact, I already emailed it to the Albemarle-Pamlico National Estuary Program and said, hey, this is a great public outreach tool for the Indian River, and can't we do something similar to this for the Albemarle-Pamlico National Estuary partnership, and so that's one thing, you know, that I can do, because I am engaged in the Albemarle-Pamlico NEP, on the science and technical advisory committee and on the ecosystem-based management implementation team up there.

As far as the freshwater inflows to the Indian River Lagoon, you know, I would defer to Daniel, and to Mathew, with respect to that, to know whether or not you have the -- You know, the time series of historical inflow data and you could -- Can you derive any, you know, flow targets for that, in terms of what you would like to see be provided, in terms of freshwater inflow, or do you have to just, you know, infer -- If you don't have the data, you can -- I mean, you can clearly make some observations about when the Corps is releasing way too much from Okeechobee.

One other question that occurs to me, as I'm talking, Daniel, is does any of that relate to, you know, the whole south Florida Everglades restoration effort, and the question would be, I guess, is it possible to route some of this water that they're currently dumping in the IRL to the natural existing historical pathway further south?

MR. KOLODNY: That's some great points, and there actually is a lot of work going on at the water management districts to do that. M1 is a great example of a re-diversion of water that was all -- Normally, it didn't go to the Indian River Lagoon, and it was drained to go to the Indian River Lagoon, and they're actually weiring it and pumping it back, to go to the St. Johns, because the St. Johns needs that, and there's talks, and discussion, between connecting the two water management districts, and so there's a giant piece of property out in northern Indian River County, and southern Brevard, where they could possibly, you know, connect those and pump water one way or the other, depending on the need, and that would divert, you know, thousands and thousands of gallons to the Indian River Lagoon.

As far as the historical, there is a really good study, done by Kai Rains and Mark Rains, and they're graduate students, and they looked at St. Lucie County, and particularly historically, from like 1850 through now, and the different channelizations and different waterways that were built, and so it was something like a 300 percent increase in the amount of channelization in the whole watershed there.

When you have that much, you know, water, that was one just sitting there and going into a wetland and not really moving, and now everything is going down to the receiving waterbody, you kind of

have an idea of the freshwater inputs that are coming into the system, and so, through that effort, they could go back and look at what was the normal regime, and we do have a pretty good idea though.

There is a natural sand ridge that runs down the 95 corridor in Florida, and everything east of that ridge, you know, eventually flowed down towards the Indian River Lagoon, and everything west went towards the St. Johns, you know, and they just cut right through that, and cut right through that, and entrained a lot of it to the Indian River Lagoon, and so there is a lot of historical out there, and a lot of efforts to try to redirect or, you know, stop that flow.

DR. LANEY: That's great to hear, and, again, Kathleen, to go back to what we originally thought, we thought, okay, this is, you know, a fairly simple exercise, and we can just make a list of all the estuaries in the South Atlantic Council's jurisdiction that we know need some level of freshwater inflow to maintain proper EFH conditions and keep those estuaries sustainable, and so we'll just make a table, you know, and we'll say, okay, here's what it was historically, and here's what it is today, and here's what we think the target should be.

Now, I think, knowing what I know today, that that was a great and gross oversimplification, and it's not an easy task, and it's a very complex one, but, to the extent it is possible, especially when we have a national estuary, you know, designated program in place, and they're already working on it, and my suggestion would be that we should just try and keep an eye on what's going on, and, when they come up with specific recommendations that we could be made aware of, and then pass that along to the council, that would be a good thing for us to do, you know, to kind of track then and then endorse, and support, recommendation for ecological flows. That maybe would be the simplest way to say it, and that seems to be the buzzword these days, you know, is what are the appropriate ecological flows for these estuarine ecosystems, in terms of freshwater inputs.

MS. CROWE: Thanks, Wilson. Steve.

MR. MILLER: This is a project that I've had a little bit of work on, and I always would challenge Chuck Jacoby to tell me what is the minimum freshwater inflow the lagoon needs, because I work with the upper basin project, a large flood-control project, which is getting a lot of water that needs to go to the Indian River Lagoon, and, unfortunately, we still have bit spigots that, when we get certain storm events, and people get upset, then you get these thousand CCS discharges, and not just from Okeechobee, but you get them from the upper basin project, but, with that project, we've reduced these freshwater discharges to about a one-in-twenty-four return frequency, where, before, they were once-in-five, or once-in-six, years.

There are a lot of projects that are looking at diverting water away, and I agree with Daniel, and several of them are in planning, and then there's a huge one down in St. Lucie County, and I'm the one that gets to deal with that water after you give it over to the upper basins, and I deal with the environmental flows.

This is different, and, in the lower St. Johns, we look at how water withdrawal, and water diversion, can affect freshwater flow to the estuary, and how it will affect the resources, and this one is more we're just trying to get water out of the lagoon and divert as much freshwater out as we can, but I don't think there's really much understanding on, quote, what would be a historical needed level to maintain the salinity, but it seems, from a flow perspective, the bridge -- You know, having a

policy statement, or something, geared toward you don't need these long berms separating all of these estuary systems.

DR. LANEY: So that's like a connectivity component, in addition to the flow component.

MR. MILLER: Right.

DR. LANEY: Not only do you have to worry about the volume of freshwater coming in, and the timing of the freshwater coming, but you want to make sure that you don't convert a significant percentage of your estuarine area to, you know, 100 percent freshwater for an inordinately long period of time, because it obviously has impacts on shellfish resources, for sure, but others as well. Good point, Steve. Thank you.

MS. CROWE: I will just tie into that, Wilson. I mean, since we're -- We were talking about modifications to the flow policy, and, I mean, that ties nicely in with the whole issue with the tide gates, is we don't want to block flow to where you're turning a tidal-exchanged area into more of a freshwater area and converting habitat. Casey, go ahead.

MS. KNIGHT: I definitely agree with that, because, in North Carolina, we've got kind of a very different issue going on, especially like around Lake Mattamuskeet, where, you know, they're holding back that freshwater for waterfowl impoundments, and I also think we need to look at the seasonality of these outflows as well, and, you know, I think certain habitats can probably take it at certain times of the year, because of the natural cycle of wet and dry, but, you know, in the middle of the summer, flooding it with a bunch of freshwater is probably not the best thing to do.

MS. CROWE: Anyone else have any thoughts on that? Go ahead, Scott.

MR. KATHEY: I guess this question would be for Kathleen. So what's the extent of the regulatory authority that could be extended under EFH to kind of prevent this -- You were talking about we can't change the past, but we're looking into the future, and to prevent this same type of thing with the causeways, you know, blocking off and segmenting a lagoon, and how much could EFH influence the construction of a causeway like that, and by what means?

MS. HOWINGTON: So the method would be, and this is just -- We would look through the flow policy, and see if we feel like it adequately addresses embankments and blocking of, you know, water-stopping flow. If it doesn't, then we would request the council, you know, add to the workplan revisions and alterations, and I think, with tide gates coming up, it probably wouldn't be hard for us to add that to the list, because I feel like that's something that's already kind of going to be coming up.

Then, once we're able to revise the policy, that then influences any EFH consultation that occurs, and so they use our policies as their basis for whatever is happening, and so somebody would come in and say, hey, I want to build a new causeway, and I want to use an embankment, and I want to put -- You know, I don't want to raise it up, because it's only 17 percent increased flow, and our policy would say -- Some language in there that would say you can't, you know, limit flow of water, or -- Like clearly this is not an eloquent explanation, but the consultation would then say you need to do the raised option, versus the lower option.

Then, after that, it's kind of out of our hands. Unfortunately, we don't have a lot of teeth behind this, as much as it's this is what the council recommends, and is our policy, in regard to EFH and our flow and riverine and estuarine policy. EFH can take that, and they can make recommendations, and then the recommendations go on, and hopefully they are listened to, but, after that, it's way outside of my hands.

MR. KATHEY: So, when you say the council recommendation, you mean the council, and not this panel, and so the council would make a recommendation, but it would be up to NOAA Fisheries to enforce that?

MS. HOWINGTON: HCD would make the recommendation, based on our policy, based on the flow and river and estuarine council policy.

MR. KATHEY: Could they effectively halt, or obstruct, a construction project, if they're not complying with that? Do they have that kind of authority under Magnuson?

MS. CROWE: It's -- I'm going to jump in there. It's a recommendation, and I will say though that, when NOAA Fisheries can make that recommendation, and the states make that recommendation, it just gives it a little bit more power, if it's coming from the council, and then NOAA Fisheries, and then the states, and we're all onboard with that recommendation. It doesn't mean they're not going to get a permit to alter, but it at least helps us a little bit.

MR. KATHEY: But, also, if someone decides to litigate, having those weights behind the argument is going to help their litigation.

MS. HOWINGTON: Yes.

MS. CROWE: Yes, especially when we have people like the folks in this room, when everybody is looking into it, and we're all in agreement that that's the best thing.

MR. KATHEY: Right. Thank you.

MS. CROWE: Go ahead, Stephen.

MR. MORRISON: That actually triggered a second thought, and so, on that point, I would suggest that, when we're looking at kind of what we can do, that we do make sure that we -- After we've sort of taken a look at our flow policy, and put that together, that we're looking at these other bodies that can add to that soft power that the council has and align, or try to find a way so that we're adding up and not going against each other, and so that would be one recommendation.

The second goes back to -- Despite the perceived sensibility about construction evaluation, and the quality of construction, and this is my ignorance, and what exactly is the construction type for these causeways? I heard some like natural, or earthen, and I'm trying to like visualize what these causeways look like. I know what a causeway looks like where I come from, the concrete pillars, and then you've got the concrete, one or two or four lanes or whatever, and is that what we're seeing?

Then are there new ways to build causeways that could be recommended to improve flows, that either could happen or are happening, versus what has been done, or is being done, to improve these flows going forward? So, one, what do these look like, and, two, are there better ways to design them that are suggested or being used?

MS. HOWINGTON: Have you got a picture of one?

MR. KOLODNY: I don't think I have a picture of one, and so, when you think of causeways, there's your elevated, or bridge span, causeway, and that's just a bridge, and they mostly have concrete pillars, like you said, and that's an elevated one. Earthen is essentially -- They dredged out the intercoastal, and so from four feet down to fourteen feet, and all that spill -- They just piled it up and made essentially an island, and then they put road over it.

MR. MORRISON: So like a culvert or something, where the water --

MR. KOLODNY: Yes, and there's usually, in the corner, a small little bridge as well, to kind of help some kind of flow go through those absolute corners, but they're not perfect, and so there's some pictures there.

MS. HOWINGTON: I am -- We're grabbing some pictures right now.

MR. MORRISON: Okay. That helps.

MR. KOLODNY: So you can see that, you know --

AP MEMBER: They're long berms.

MR. KOLODNY: Long berms. Exactly.

MR. MORRISON: Thank you.

MS. CROWE: Wilson.

DR. LANEY: To go back to Scott's question, so -- Stacie's response I concur with 100 percent, and, you know, the one problem, or at least it's been a historical problem, and I presume it probably still is, to some extent, is so you have all of the regulatory review agencies, state and federal, and NGOs, often, all agreeing that a certain set of conditions are appropriate to -- Well, sometimes, if they all agree, the best thing to do is not issue the permit, but, if it is issued, and everybody is in agreement on the appropriate set of mitigation measures to reduce the impact, then the Corps is responsible for implementation of that and for monitoring and follow-up.

Historically, at least, their staff were not sufficient to do a really good job of monitoring and follow-up, and so they do have the enforcement authority, the Corps and EPA, for Section 404 anyway, and so they could issue -- If they went out and they found that a project was not in compliance, then they could issue, you know, a notice of violation, or, if it was being constructed in the wrong way, they could issue a cease-and-desist, but that often didn't happen until the, you know, horse was already out of the barn, so to speak, and so that is where the point you made comes into things, is that, you know, if there is a party that is willing to litigate, then sometimes

you can get the attention of the developer who didn't follow-through and do what they were supposed to do in the first place.

AP MEMBER: I will just touch on what you just said there. Brevard County did ask the Corps to trigger a 404 review, and so they are -- The Corps is going to take it up, as long as the county can come up with a match to it, because it's a pretty expensive, you know, review, and so, if that happens, we'll see where that goes, but they are looking at a, you know, Section 404, or 7000, and I forget the exact Corps review, but they are looking at potentially doing one.

DR. LANEY: The one thing I didn't mention, but Pace did mention it in his presentation, was the elevation authority that is there under Section 404, which historically was very rarely, if ever, exercised, but, if the regulatory review agencies -- If the Corps decides to issue a permit over the objection of the regulatory review agencies, then I guess it's -- Is it just federal, Daniel, and Fish and Wildlife Service, and National Marine Fisheries Service, both have that 404(c) elevation opportunity, and so everything can be elevated to Corps headquarters, and EPA headquarters, in Washington, D.C., and so that would be the last step that would usually occur prior to any sort of third-party trying to enter in and litigate anything, but, again, it's rare as hen's teeth that that elevation clause is ever invoked.

MS. CROWE: Steve.

MR. MILLER: I just have one last question for you, Daniel. I heard rumors that someone wanted to dig a new inlet, and I wondered if you could just update on where that is, or is it --

MR. KOLODNY: This comes up a lot, and it just seems to cycle around, because, you know, the public is always looking for that silver bullet of, you know, what's one thing we can do, and I think, you know, as we mentioned, as I tried to describe, the IRL is not a river, where you do something upstream, and it impacts everything downstream, and these inlets only have like a mile or two, max, influence, up and down, from where they are, and so, you know, it always comes up that the inlets are the key, the inlets are the key, but, if you look, seagrass is not coming back in any, you know, significant amount in those inlets, and you get very minimal amount of flow through them, plus there's just so many hurdles you have to go through.

You know, Sebastian Inlet, which is an artificially-made inlet, requires constant dredging, constant sand pumping, back to the south, because of onshore drift, and, you know, I think there's a statute in place where you can't even blast through the island, the barrier island, anymore right now, and so you would have to get the legislature to approve that, and you would have to build a bridge over it, and probably create a taxing district, and now you've also created a resiliency challenge for all the people in that lagoon, where there was no inlet, you know, no potential storm surge, and so there's so many different things that come into play when you talk about an inlet as the answer, and it's not the answer, not at all.

MS. CROWE: Wilson.

DR. LANEY: So you said the magic word "inlet", and, in North Carolina, of course, the biggest one that we have, that's been somewhat controversial for many, many decades, is Oregon Inlet, and that one was proposed to have jetties constructed, and it sort of has a baby jetty on the south side, but one of the things -- Because both sides of that inlet -- One side is a national park, and the

other side is a national wildlife refuge, and so the Department of Interior was able to work with the State of North Carolina Department of Transportation to ensure that, you know, dredging would be the preferred mechanism of maintaining navigation through the inlet, as opposed to putting jetties on it, which would have had a negative impact on larval recruitment.

What they did, to try and address the issue that you just mentioned, is to include sand bypassing as a permanent provision in that, and so they have to move the sand, you know, that normally would have been of onshore transport, and they do have to move that when the dredge the navigation channel, and out it on Pea Island to the south, to keep that system flowing, and, again, it's another one of those inlet dynamics, and sand transport, and sand bypassing and all that, is another fairly complex coastal engineering type of issue that you have to deal with.

MS. CROWE: Okay. Anything else related to the action item? Kathleen, did you get what you need?

MS. HOWINGTON: Right now, we don't really have any thing, other than let's communicate with the Indian River Lagoon, and so, if anybody wants to make a recommendation, or I can make a suggestion?

MS. CROWE: Go for it.

MS. HOWINGTON: Okay. Can we suggest requesting that the council add to the workplan revising the flow policy in regard to not just tide gates, but also the ongoing Indian River Lagoon concerns, to be added to the workplan, and, if we decide that there's not a whole lot we can do, we, at the minimum, have it on the workplan for tide gates, which we know are going to be a problem, and we're going to be discussing it this fall of 2024, but, at the minimum, we have it on there, and we have their permission to look into it, and maybe create a working group, and it would just be a start. We would be able to add it onto the list, and we can have a conversation in the fall. If we decide it's not worth it, we won't create a working group, and we'll come back to the council and say, hey, sorry. Does that sound good?

MS. CROWE: I think that's a good idea. I mean, especially since the policy was last updated in 2014, which was ten years ago, and I think it's worth taking a look at the policy anyway. Wilson.

DR. LANEY: I agree, Kathleen, and that sounds good, and one thing that I forgot to mention too is that some of the states, at least North Carolina, actually had an ecological flows workgroup that they put together, and they developed policy recommendations, and, Casey, help me out here, but I think those have pretty much sat on the shelf since they were developed, and I'm not sure -- Was there any ever real serious effort to implement the recommendations in that ecological flow report, but, regardless of whether there was or not, that document is sitting there, and it would be good for us to take a look at that and just see if there's anything in there that we could pull out that might be useful for the council's flow policy.

MS. HOWINGTON: What's the name of the document?

DR. LANEY: Casey, do you remember what it's called? We can find it, and we can provide it to you, and I will make a note that we need to do that, or Trish may know.

MS. MURPHEY: Are you talking about the APNEP flow group?

DR. LANEY: No, but thank you for saying that, because that's another one. That's a separate one.

MS. MURPHEY: They're doing a fair amount of work on --

DR. LANEY: Yes, that's a separate one, and that one is still ongoing, right?

MS. MURPHEY: I think so, but I think they --

DR. LANEY: Bob Christian? That's the Bob Christian group?

MS. MURPHEY: Yes.

DR. LANEY: Yes, and Bob was heading that up, and so, yes, that's another one. The one that I was talking about was the one that Chris Goudreau, from the North Carolina Wildlife Resources Commission, headed up, and so that's a separate one. That was a statewide one, and it was looking more at all of the rivers in the state, but the one that Bob was focused on -- You all were using the Trent River, right, and I think the Trent was his example that they were looking at, and so there's two of them.

MS. MURPHEY: That would definitely be a source.

DR. LANEY: Yes, for sure.

MS. MURPHEY: And I think there's a report out there already.

DR. LANEY: Yes.

MS. MURPHEY: And Stacey would be who to contact.

MS. HOWINGTON: Stacy who?

MS. MURPHEY: Stacy Feken.

DR. LANEY: Yes, and she's with APNEP. There are -- Trish's comments reminds me too that there's another flow study going on of the Scuppernong watershed, that APNEP is also involved in, and Stacy has got the staff lead on that one too, I think, and so there's like three different flow-related things in North Carolina that I think would be useful for us to take a look at.

MS. MURPHEY: I think Stacey will be your go-to, and I can put you in touch with her, if you need.

MS. KNIGHT: Then the first initiative that Wilson was talking about is actually the Army Corps of Engineers, and I think is it American Rivers, and it's one of the NGOs that is working on doing that, and I think they have started to institute some of those flows below Jordan Lake, but I think

it's still all very experimental, and they're just getting the Corps onboard to actually do the flows, but I can follow-up with that information as well.

MS. HOWINGTON: Thank you.

MS. CROWE: Stephen, go ahead.

MR. MORRISON: This question is kind of for Kathleen, if that's all right, Madam Chair, and it's a process question about -- I'm seeing a lot of impact for the Corps decision-making, whether it's to release a bunch of water that runs into the Indian River Lagoon, or to grant a permit, deny a permit, and how much -- Is the Corps required to get consultations from the council on how what they do affects EFH, and then is there a way to get insight into, or maybe feedback from the Corps, about what they do with that, if there's ways to provide more feedback that would be more useful, to try to learn how to better impact those decision makers?

MS. HOWINGTON: I believe, and I'm going to start looking around the room, to make certain I'm saying this right, is that the Army Corps of Engineers is required to get EFH consults, right? You don't think they are? No? People in the room?

MS. BROUWER: (The comment is not audible on the recording.)

DR. LANEY: Was the question whether or not the Corps itself is required to do EFH consultations?

MS. HOWINGTON: Yes.

DR. LANEY: I think Myra is correct, and I think the answer is no, that they don't have to for their projects, but anybody who is applying for a Section 404 permit does have to do an EFH consultation, right, and so the Corps is the entity that authorizes the permit, in that case, but the applicant is the one that has to do the EFH consultation, or at least that's my understanding, but Myra is correct that the Corps itself -- Like, for their navigational projects, or their reservoir projects, or things like that, they don't have to do EFH consultations, as far as I know.

MR. MORRISON: So it does not work like a Section 7, where, if a federal agency is issuing a permit, or authorizing something, they -- That deals with ESA issues, the agency has to consult, and for --

DR. LANEY: For Section 7, yes. The answer is, yes, the agency does.

MR. MORRISON: But EFH doesn't work that same way?

DR. LANEY: I don't think so, but I would defer to Pace and Jordan, and anybody else in the Habitat Conservation Division, on that one.

MS. HOWINGTON: So, right now, based on this conversation, I am going to leave this un-bolded, because I don't think it's an official action item, and I'm going to put it into our notes of look into having maybe an Army Corps of Engineers representative come in and say here's what happens with EFH, and here's what happens with policy, and here's what we take into account, something

like that, so at least we know how much we're providing and if it's helpful or not, and, if I can make that happen, cool, and, if I can't, it's not an official action item, and we're not going to get in trouble, because we're not going to add it to the workplan just yet. People behind me, that are my supervisors, is that okay? I mean, it doesn't hurt to ask them if they would be willing to say.

MS. BROUWER: I wish I had more details, and I just have a vague recollection, or not so vague, but I just can't remember exactly what was said as far as the reason why the Corps of Engineers hadn't participated in some of these discussions, and I think the question that we had, for Habitat Conservation, and I wish that Jordan was here, was why hasn't the Corps been involved in, you know, or asked to participate, in, for example, reviewing some of these policies and stuff like that, and that's when Pace indicated that it had been discussed in the past, but I can't quite recall what the rationale was of why that wasn't a good idea.

MS. HOWINGTON: Maybe -- I'm not sure where Jordan is right now, and I'm assuming that she'll be coming back. Do you know?

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

MS. HOWINGTON: Okay. Go for it. Read the text.

AP MEMBER: Hi, everyone. I asked Jordan if the Army Corps is required to do EFH consultation, and she replied that any federal agency that may adversely affect EFH is required to consult with National Marine Fisheries Science HCD. They're only required to consult with us by submitting an EFH assessment to us if their action, or action they permit, may adversely affect the EFH.

MR. BODNAR: I was trying to get unmuted, but that's basically the answer, is that, when an application for a permit comes in to development, the Corps makes an effect determination, and, if that effect determination is something basically other than shall not likely or adversely affect, then it kind of starts going through the process of being looked at by National Marine Fisheries Service, U.S. Fish and Wildlife, and so on and so forth, one of those things being an EFH determination.

A lot of times, applicants will pre-coordinate with the Corps, knowing that there is an EFH determination that needs to be made, and they will provide documentation to the Corps, and, therefore, through the Corps to the National Marine Fisheries Service, to give them that EFH consultation, but it all kind of starts with how the Corps makes a call on an effects determination. So, if the Corps doesn't make an effects determination that results in a consultation, then the Corps, or then the National Marine Fisheries Service, may not be involved in any EFH determination.

MS. CROWE: Stephen, did you have something else?

MR. MORRISON: Yes, and I just wanted to -- In terms of action, the goal is to make our policy recommendations as effective as possible, and that's sort of the -- So looking into ways to do that, to communicate, whether it's specific to a flow policy, and I'm trying to think of, you know, is it better to say, when we're looking at a flow policy, look at who that impacts with this one, and all of these decisions have a web of decision-makers, and some of them are bigger, have a bigger bat

to swing, like the Corps, probably, and then you get like a county, with an incorporated city, and then a state, and you get these sort of webs and layers.

Just evaluating ways to most effectively communicate and get feedback from them, so that, when we're putting policies together, we know how to best communicate those points, and proposals, so they will have an impact and resonate and maybe have a little bit better outcomes.

MS. CROWE: Scott, go ahead.

MR. KATHEY: This is kind of reminding me of a conversation that I had with Pace earlier today, because he actually mentioned the Corps, and that they tend to want to put that effects level at a higher level, because I was asking if there is a *de minimis* threshold for EFH, anything under X number of square meters impacted has no review required kind of thing, and he said, no, there's not, and so there is no *de minimis* threshold, but this tracks with, you know, what's just been stated here, that the Corps makes a self-determination as to what they think affects.

I'm sure that could be challenged, but that's only if people know about it, but it sounds like -- This is the reason that I asked that question earlier, was I know we, as NOAA, in the sanctuaries program, if we're going to do something that affects EFH, we're supposed to consult, and that's why it was curious to me if the Army Corps had some escape clause from that, because I was pretty sure that it affected any federal agency that's going to have an impact on EFH, and so this is all starting to kind of track here, as far as what's going on.

I don't know if having the Corps come in and brief us on their perspective -- It would be good to have some good clarification from Pace ahead of that, so we have a context for what they might be telling us, because it may just be -- It may be their perspective on it, but I don't know that that's going to track with what the regulations state.

MR. BODNAR: You might want to get someone from Corps regulatory, besides just Pace, or somebody from National Marine Fisheries Service, to kind of give you an assistance on how they go through that checklist on making the determination call. I know, in the State of North Carolina, a lot of times, that call is a fairly simple call to make, because it will fit a nationwide or regional general permit through the Corps, and so they can make that call, where it's kind of baked in for a no effects determination.

Now, North Carolina is a little bit unique, in the fact that we also have a regional general permit through the Wilmington Army Corps of Engineers, what's referred to as the 291 process, which allows an application that would normally be reviewed by the Corps through a PCN, through their individual permit, to actually use Division of Coastal Management's application as the Corps' application, and they will use that as a kind of more efficient, streamlined process to get an application reviewed by their folks on the federal side, and a determination made through that coordination, rather than going through the longer, more involved process of a PCN and an individual permit.

In North Carolina, we kind of have this design system to allow an application, and a determination, to kind of be made to where it doesn't fit a nationwide permit, or a regional general permit, but it doesn't have to go to the full-blown public comment period, public notice, things like that, through a PCN, and an individual permit, and they can use our umbrella agency review, through the North

Carolina Division of Coastal Management, to have an effects determination made, if it's something other than, you know, no effects.

MS. CROWE: Wilson.

DR. LANEY: One last thing that occurs to me that might be useful is -- And this is back to the water flows thing again, but the North Carolina Coastal Federation has been working closely to produce watershed restoration plans, and they've done one for the Mattamuskeet watershed, and they've done several others, and so, to the extent those also look at water routing, and water flows, and how best to try and emulate historical flows, or provide fresh water where it's needed, as opposed to where it is undesired, it might be useful for us to take a look at those, and, Kathleen, I can provide those to you.

Then, also, North Carolina has a basin-wide water quality planning process. They prepare these plans for every watershed in the state, and they're on a five-year update track, and so it might be useful for us to take a look at those as well, because they do take a look at historical flows, and they take a look at water demand, and they take a look at water use, and so all of that information is there in those plans, and the vast majority of them are online as well, and so they're pretty easy to access.

MS. KNIGHT: Just to follow that up, real quick, from Wilson said, is our Division of Water Resources is in charge of the basin plans, and so they would be a good resource then, and then, just to fix your notes there, DMF doesn't have any river flow documents, and we've just participated in some of those activities with the Army Corps, but I just sent you an email with some of that.

MS. CROWE: Okay. Thank you, everyone. That was a great discussion. Thanks again, Daniel, for the talk, and we're going to take a ten-minute break before we head into our next topic of discussion.

(Whereupon, a recess was taken.)

MS. CROWE: Okay. If everyone wants to take their seat, let's go ahead and get started with this next presentation. Our next presentation is Shep Grimes, and he's with NOAA General Counsel, and he's going to give us an overview of the Sackett versus EPA and potential impacts on wetland protections.

MR. GRIMES: I guess I'll go ahead and get going. Thank you for that introduction, and I will give you a little bit more of an introduction. As said, my name is Shepherd, or most people call me Shep, Grimes, and I'm an Attorney-Advisor with NOAA's Office of General Counsel in the Southeast Section. With the exception of a two-year stint in the Pacific Islands, I've worked in the Southeast region since 2001, based out of St. Petersburg, Florida. I've covered a variety of issues related to fisheries, marine mammals, endangered species, fishway prescriptions, and various administrative legal requirements applicable to all that stuff.

I have some familiarity with the Clean Water Act, through my hydropower work, and, to a lesser extent, Section 7 of the Endangered Species Act, but this is really not an area where NOAA has a great deal of involvement, and so my experience is pretty limited. As to my presentation, I'm

going to try not to use any unfamiliar acronyms for you, but please feel free to ask if I do. Along those same lines, please don't worry about interrupting me. I'm completely accustomed to it, and I take no offense, and, if you have questions, I would prefer to address them in the context that they arise, and so feel free to throw up a virtual hand, a real hand, or just speak up somehow.

As was stated, I was asked to present the outcome of the Sackett v. EPA case to you, and I'm going to touch upon the -- I will talk about the outcome of the case as well as touch upon the potential implications for wetland conservation. Before that, there will be just a brief background on the relevant legislation.

I will discuss that case, what the outcome means relative to existing authority and wetlands conservation under the Clean Water Act, but I will give you a bit of spoiler alert that I think it's too early to say much about what the actual implications will be for wetlands conservation and wetlands regulation.

The short title of this legislation is actually not the Clean Water Act, and it never has been. I guess the Federal Water Pollution Control Act wasn't catchy enough, and maybe it sounds a little too bureaucratic, and the act was significantly rewritten in 1972 to do the things that are listed in the sub-bullets on the slide. Those changes in 1972 were generally heralded as making significant strides in resource conservation. The language at issue in the Sackett case has been in the law since 1972, and so this is not a new issue.

The specific authority is the bullet in italicized text in the list, and the bullet comes from the EPA website, and so the list contains their characterization of what the statute does, and it doesn't necessarily track the organization or the exact characterization, as reflected in the statute itself, and that's codified.

As to the outcome of the case, and whether the wetlands and the property constituted waters of the United States under the Clean Water Act, the court was unanimous, which seems to be an increasingly, somewhat anyway, rare occurrence. However, they were definitely not unanimous as to their rationale, and multiple concurring opinions were authored in the case. These quotes on the slide come from the majority opinion attributed to Justice Samuel Alito. Interpretation of the language "waters of the United States", as those waters define the scope of federal discharge permitting authority under the Clean Water Act, have been at issue from the start.

The Supreme Court has taken multiple shots at interpreting the language, but they have never managed to settle on a clear or consistent interpretation, as they say in their own court opinions, and I think, just as a bit of a quirk, maybe of the organization of the Clean Water Act, but the section of the statute at issue in this case is 33 USC 1344, and it prohibits discharge into navigable waters. You have to then go to the definition of "navigable waters" in the statute to find the terminology "waters of the U.S.". The terminology "navigable waters" has a long history in U.S. law, and it has a more well-defined meaning under current law, or so the majority says in its opinion in the Sackett case.

Regardless, decades of consternation have stemmed from the meaning of those five little words in the statute, and I would say, interestingly, if not tellingly, Congress has never availed itself of the opportunity to amend, or to clarify, what is intended by that language, despite having modified

other elements of the Clean Water Act multiple times since 1972, when the language was first introduced.

The case itself, the facts of the case, and this is a classic fact pattern for legal challenges to a type of federal regulatory program. Property owners were looking to develop their privately-owned property containing wetlands. Their desired development involved filling of some of the wetlands on the property, which the owners did in pursuit of constructing their dream home. Sometime thereafter, EPA applied the standards that you see in the slide here, in the last two bullets of the slide, and asserted that the owners had illegally dumped backfill into waters of the United States.

The EPA had notified the Sacketts accordingly, via something they called a compliance letter, which was actually at issue in some of the prior litigation, but it demanded site restoration. The owners filed a lawsuit alleging that the wetlands on their property did not constitute waters of the U.S. Many, many, many years later, after the owners had lost in district court, and appellate court, twice, where those courts applied the agency guidance standards that are in those bullets on the slide, the Supreme Court agreed to hear the second appeal.

For the wetlands in question on their property, there has never been any, or is no direct surface connection between the wetlands filled by the property owners and traditional navigable waters, and so the discussion, and the guidance, that was at issue focused on what constitutes an adjacent wetland.

I would say what is a very interesting footnote to the background of this case is the legal expenses alone, from taking this case to the U.S. Supreme Court twice, would have exceeded the value of their property, and I think likely at least by an order of magnitude. I have read that the owners paid \$23,000 for that property in 2007, and, after sixteen years of litigation, the expenses would have certainly amounted to hundreds of thousands of dollars, were legal expenses not provided for free by the Pacific Legal Foundation. According to that organization's website, it's a national public interest law firm that defends Americans from government overreach and abuse. They are involved in a lot of Endangered Species Act litigation as well. I don't want to read too much into it, but it seems like there's got to be a deeper societal lesson there, something about judicial system and the influence of money.

This is just intended to make the basic point that the legal issue, as it is characterized in the case, lies in the regulatory interpretation of the statutory terms, those terms "waters of the U.S.", and, specifically, the question the question is whether the interpretation by the implementing agency is consistent with the text of the statute as Congress intended it. You legal scholars in the audience will note that the case is not really styled as a statutory interpretation case, and it does not even mention the chevron document established by the U.S. Supreme Court in the 1980s to guide federal courts in reviewing agency interpretations and their enabling legislation.

You same scholars will note that chevron is another long-standing legal precedent that is likely not to survive this U.S. Supreme Court term, and it's expected to be brought down, or probably be brought down, by a fish case as well. Anyway, this slide contains direct quotes from the court's opinion.

I think the second quote, and I put it there in particular because I think it presages some slightly different thinking as to the underlying jurisdictional limitations related to this, and you can see

more of the same in the concurring opinions. I will mention this again later, but if “waters of the United States” is interpreted in a manner consistent with the outer bounds of legislative authority under the Constitution, and this case establishes the bounds of that language, it sounds, to me, that it's more of a constitutional limit than merely a limit intended in the statute, or at least I think that's where the majority might head with it, based on the language that's there.

At the end of the day, what is the new standard? This is it, or this is how it's characterized in two different places, the holding of the opinion, and this is what constitutes waters of the United States, at a minimum, for purposes of prohibiting unpermitted discharges and, relatedly, requiring permits for this discharges. There are almost certainly going to be broader implications to this decision.

The language in the decision is clearly geared towards delineation of boundaries, the boundaries of the wetland, you know, clear boundaries, and elimination of the adjacent wetland concept of waters of the United States. If you're interested, the Kavanaugh concurrence, that's in the same document that was given to you in this meeting, the next thing in the agenda, that has all the concurring opinions, and Judge Kavanaugh does a really good job of addressing the adjacent concept. While I may be a little ashamed to side with him, I think he has the much better argument of everyone.

Obviously, this new interpretation significantly reduces the scope of waters protected by those provisions in the Clean Water Act, but what does that ultimately mean for wetlands conservation? These quotes came from a Greenwire, and it's just a news service that the agency has, or provides me access to, and I forwarded it around to Kathleen, and I believe she sent it around to this AP, but these are just quotes, and, obviously, some people see a lot of broader implications to the decision.

Again, both of these quotes have been published, and they're from people who are undoubtedly much more experienced in the Clean Water Act than I am, but some of this sounds like Chicken Little to me. I think the eventual implications will vary widely, based on the wetlands in question, although, you know, clearly there could be some potentially disastrous consequences for wetlands in some states, probably.

These are additional quotes from the same source, and others do not see such implications to the case, because of existing state authority over wetlands and broader state protections having been implemented under that authority, and I think, you know, obviously, that's a significant consideration, and I think this is a stronger position, that it will vary a lot by state. In some states, it might not be a big deal, and, in others, it might be more problematic.

Not inconsistent with anything that's stated here, I've also read that the State of California is budgeting, and planning, for an increased role in wetlands protection. Even though they don't need additional state regulatory authority to protect wetlands that are no longer subject to those same federal protections under the Clean Water Act, they anticipate the need for more state resources to implement state requirements. I have read about bills in the California legislature as well to enshrine a no net loss of wetlands standard in their state code, and that was fairly recent, too.

Ultimately, we shall see what the implications will be. Clearly this decision puts the onus on Congress, if it wants to expand wetlands protections back to prior judicial interpretations of what

constituted waters of the United States under the Clean Water Act. If it's not addressed nationally, it would be up to the individual states to fill in the gaps left by the retreating federal authority. Recent history does not give much justification to expect Congress to change the Clean Water Act, and the majority opinion, as well as Justice Thomas' concurring opinion, might signal that such efforts would be viewed by the current court majority as exceeding the bounds of congressional authority under the U.S. Constitution.

As to the individual states, it will almost certainly vary greatly across the states. It sounds like wetlands on the west coast, even in Arizona, somewhat surprisingly, may be largely unaffected, due to existing state authority and existing state protections. Here in the Southeast, certainly in my home state, probably not so much. As we saw from that Indian River Lagoon presentation, Florida doesn't exactly have a rich history of protecting wetlands, particularly coastal wetlands, from development. That will be something to watch going forward.

You know, what does this mean for EFH? Well, I don't really know what this mean for EFH, but I did look at the regs, and I will note that, in our EFH regulations, the national EFH regulations codified at 50 CFR 600.805, the geographic scope of essential fish habitat is defined based on the Army Corps regulatory definition of waters of the U.S., right, and it says that EFH may be described, and identified, in the waters of the United States, as defined at 33 CFR 328.3, and so notice that, in the litigation, it's Sackett v. EPA, and so the Corps was not part of that case, and the Corps --

It was on an earlier slide that I mentioned, at one point, that the Corps and EPA codified the same definition, so that they would have the same approach as they're exercising their different roles under the Clean Water Act, and this is not the regulation that was explicitly at issue in the case, but they were codified together, at least historically. At two points in the past, they were done as a joint rule with EPA and the Corps, and so, anyway, there are obvious implications for that.

I'm not sure whether the Corps is -- I would expect that the Corps will go back and change their regulatory definition of "waters of the United States", which is cross-referenced in the EFH regulations, which will then in turn narrow the scope of where we can define essential fish habitat, based on the -- I would assume based on our interpretation of the existing regs.

I think my final observation on all this is I would say, given the species that we federally manage in the Southeast, I don't know that -- I'm not aware of EFH that is designated that far inland, but, for other areas, where we manage salmon that go far upstream, we probably do, but I really don't know for sure. Let's just see if anyone has questions.

MS. CROWE: Wilson.

DR. LANEY: Hi, Shep. I guess, based on the last comment that you made, would it be safe to say that, while -- You know, depending on what the Corps does with their definition of "waters of the U.S.", and how that might directly relate to EFH designations, I think that -- I guess my sense would be that the major implication of Sackett for EFH would not so much be directly on the designated area of EFH, but rather the quality of the EFH, because the adjacent -- So, if you cut out all of the isolated and headwater wetlands, which my understanding is what Sackett does, plus it cuts out anything that would have previously been considered an adjacent, you know, wetland, the impact on it will not so much be on the direct reach of EFH, and, by that, I mean the habitat

that would actually be occupied by a council-managed species, and, you know, for example, none of the anadromous species were swimming into adjacent wetlands, or certainly not into isolated and headwater wetlands, but those wetlands were very important from a quality standpoint, in terms of their filtration capacity and their retention and slow-filtration capacity.

What seems, to me, would be the major impact, from an EFH standpoint, is on the quality of the EFH that would be the most inland EFH, since most of those wetlands tend to be more inland and terrestrial anyway, and would you concur that that might be the case, and so it's sort of an indirect impact on EFH, as opposed to a direct impact on EFH?

MR. GRIMES: I see where you're going with that, and, on a conceptual level, I would agree, but, you know, as you were talking through it, looking at the statute, and so the statute says -- Think of it like Section 7, sort of, Endangered Species Act Section 7, and each federal agency shall consult with the Secretary with respect to an action authorized, funded, undertaken, proposed to be authorized, funded, or undertaken that may adversely affect any essential fish habitat under this act.

So you could have acts -- You could have an activity occurring in a wetland that was not waters of the United States, right, and, therefore, maybe not subject to whatever protections under the Clean Water Act, and you couldn't designate EFH there, but, because of the effects to that wetland, and you're getting dirty water in your EFH, and diminishing the quality of the EFH, and that seems to be -- That type of action, I would say, would still be subject to consultation, and, you know, you would still have, let's say -- You know, I don't know if you want to characterize it necessarily as indirect, but this -- It's not an action in EFH, and it's an action outside of that that's having an effect.

MS. CROWE: Anyone else have questions or comments? Scott, go ahead.

MR. KATHEY: Shep, I see a word in this quote that you have from the court to continue -- Only those wetlands with a continuous surface connection to bodies that are waters of the United States, and so did the court clarify, at all, what it meant by "continuous connection", because we're talking about tidally-influenced areas here, where they may not be continuous twenty-four-seven, and did they address that at all?

MR. GRIMES: I don't recall. I don't think so. You know, I wasn't looking specifically for that, but, no, they basically did away with any of this adjacent wetland idea, right, and so, if there's a - - My guess would be, and I'm just guessing at this, and I don't recall any specific discussion of it in the case, and, you know, you may have just picked up on what will be the next big wave of litigation, for arguing over what's continuous, but I would say, you know, a lot of the stuff, you know, in any tidal condition, if there's a continuous -- You know, if it is a tidally-influenced body, but, you know, I guess that wouldn't work if you were in a flood stage, and, you know, how you identify those boundaries and what is continuous connection.

MR. KATHEY: Well, the first quote you have says, "as a practical matter, indistinguishable from waters of the United States", and so, presumably, if you looked across whatever expanse you're looking at, it would always be a very easily-perceptible connection, and there is no break, and there is no kind of divider between the two, and presumably that's the court's intent here.

MR. GRIMES: Agreed.

MR. KATHEY: Thank you.

MS. CROWE: Paula.

MS. KEENER: This is out there, but I don't know the answer. What is the -- I know the answer varies per region. However, what is the consideration for groundwater, as it relates to the wetlands and potential non-point source regs? I don't know.

MR. GRIMES: I would say -- I mean, obviously, there's no surface connection, and there's nothing in this that speaks to groundwater, to me, but maybe I am missing something.

MS. KEENER: Well, I guess I'm -- The question is should there be, in certain areas, and I have no idea.

MR. GRIMES: Well, I would say -- I mean, take my home state here of Florida, right, and up in the Panhandle, right, and, if you're going down let's say the Aucilla River, it disappears underground, goes into sinks for long periods, and then it comes back up, and, you know, presumably, in that context, right, it would all be part of the same thing, but, you know, there's a section of it that is clearly not going to be navigable waters, right, and that continuous surface connection -- I don't know how you would deal with it when it's underwater, and so I'm going to say that just to make a point that, obviously, there are connections, and I don't think this -- This case doesn't further that cause in any way, and I don't -- You know, I don't know what other authority, legal authorities, might exist to address issues that are more directly groundwater-related, but, obviously, there is -- It's all interconnected.

DR. LANEY: To Paula's point, you know, if you go in, and you read a lot of the amicus briefs that were filed by organizations prior to Sackett, there are very eloquent, and well-reasoned, from a scientific perspective, arguments laid out for why the jurisdictional extent of waters of the United States should have been kept the way it was. For the reason they state in their opinion, you know, the court chose to ignore that.

It's very frustrating, I think, from the standpoint that, if you view wetlands as sort of circulatory system of the landscape, and that would include isolated and headwater wetlands, it's sort of as though the court said, well, you know, the only part of the bloodstream that we're going to be concerned about is the part that's continuous, and, you know, we aren't going to worry about where it goes into the kidneys or anything else, and those are irrelevant, as far as we're concerned, which I think is sort of a ludicrous position to take.

Then the only other comment I will make is there's another case coming that could be even worse, and so stay tuned. That one happens to be in North Carolina, and so it's going to be interesting to watch that one and see what happens on that one as well, and, going back to what Shep said, I mean, the only entity, Shep, I think you would agree, that could fix this whole thing, and by "fix", I mean return to an earlier standard that renders our ability to conserve and protect wetlands more comprehensive, would be Congress, and, as Shep said, it's not very likely that Congress has, you know, a tendency to try and fix anything relative to this.

MS. CROWE: Scott.

MR. KATHEY: Just looking at the ruling from the court of the main opinion, there is a quote there that we also acknowledge that temporary interruptions in surface connection may sometimes occur, because of phenomena like low tides or dry spells. The court seems to indicate there that the continuous takes into account tidal fluctuations and droughts, and so more ambiguity. Stay tuned.

AP MEMBER: To follow-up on that, if I am reading correctly, my understanding is that all tidal areas are considered navigable waters of the United States, and this ruling only affects wetlands, and so the navigable waters designation maintains protections for those.

MR. MORRISON: This is very much my own personal opinion, and my background is not environmental law, though I have some experience in regulatory, and I say this just not to defend the court's opinion, but to try to understand a little bit why I think you see the court go the direction that it goes.

First, the standard that is developed, including the continuous surface connection to bodies, that comes out of a prior opinion that was not as complete, I guess, as Sackett, and it was more of a plurality, and so it just meant that it didn't have the full weight of the majority of the court, and so it's building first on things that have developed over time, things that Congress has ignored, and you see that, particularly in Justice Thomas' concurring opinion, that he is basically saying the default, under the constitutional framework of the United States, is that the states have jurisdiction over these waters, unless they're navigable waters of the United States. As Shep said, there's a long history of the term "navigable waters", going back before this country existed, back to rules of admiralty that existed for hundreds of years about what it meant for water to be navigable.

The court's opinion, to me, seems to just focus on, you know, is the EPA properly interpreting its authority, or has it overstepped what Congress gave it, and it doesn't preclude the possibility that Congress gives it more authority, but, basically, this is Congress's job to expand this, and not the EPA's job to expand this.

That is a -- I do want to push back a little bit on the court ignoring the science, because I don't think that's exactly what was happening here. The court didn't say, oh, I disagree with the science of what is or isn't that, and they're looking at legally what does it mean to be a navigable water of the United States, because, if it is what EPA says it is, it takes away from some of the traditional state authority over that, and so takeaways for a group like this, understanding what can be done to continue to protect the areas like this, it's to not ignore the states' continuing power over these areas, and this isn't to say that they don't have protection anymore, but it's now saying that the states need to come in and step in. Depending on the state, that may be a scary proposition, but that is a challenge I think that we just need to consider when we're saying where do we go from here.

MS. CROWE: Go ahead, Wilson.

DR. LANEY: Well, to that point, I see what you're saying, but, if you read the preamble of the Clean Water Act, it states that the congressional intent of the act was to restore the physical, chemical, and biological integrity of the nation's waters, and, once again, we get down to that word

“waters”, and, you know, how you define that, and, again, going back to my circulatory system metaphorical statement there, if you look at it as the circulatory system of the landscape, part of it has got to be the kidneys, and a lot of those kidney components are in those isolated and headwater wetlands, where is where a lot of the filtration and purification takes place before it goes into groundwaters and ultimately goes into, you know, surface waters.

I mean, all the water is connected, you know, molecule to molecule, and, eventually, it flows into the navigable part of the system, and so I think there is a big conceptual breakdown there between, you know, waters and navigable waters, and, once again, we’re trying to anthropomorphize things, and, you know, we call it navigable because that means we can put a canoe on it and paddle from Point A to Point B, and we can’t reach -- You know, we can’t navigate into headwater systems, and we can’t navigate into isolated systems, unless we pick the canoe up and portage it over to there, but that ignores the fact that they’re all waters, and they’re all connected, and that’s why I say I think the science was somewhat overlooked.

Maybe not totally ignored, but it gets back to where you all, as attorneys, you know, come into play here with trying to define those terms and make sense of it, from a regulatory perspective, I guess, but I still think the preamble of the Clean Water Act should trump everything else, and going back and look at Congress’ initial intent, and so Congress is really the body that should take this up and say, wait a minute, your recent decision is not consistent with our intent in developing the Clean Water Act in the first place.

MR. MORRISON: I think the last point -- I’m sorry, Shep, and I didn’t mean to cut you off, and the last point I think is the main point there, that, really, this is not the first time that lawyers and scientists haven’t maybe communicated clearly with one another, nor do I think it will be the last time, but, in the end, what was going on here is what did “waters” mean? Did it mean what science now says that it means, sixty years after these amendments became the Clean Water Act, which we’re another several decades after the original enabling act, and that used the term that was basically a legal term, in terms of navigability, and that meant can you carry goods on it from one place to another.

I think that there’s a lot of -- I, obviously, totally agree with you about “waters” means, and the interconnectivity there, and that now needs to inform congressional action, and state action as well, as to what it really means to these waters, and you can’t just lop off half the system, half that system, just because it doesn’t have a continuous surface connection to the rest of the waters.

MS. CROWE: Shep, did you want to go ahead?

MR. GRIMES: I will just jump in, and great discussion, and I don’t, you know, disagree with any of it, and I agree, you know, totally, that the ball is in Congress’ court. In some respects, and I think, again, I will say that I suspect there will be constitutional limitations placed on Congress by this court as to how far it can go, but I also think that it’s important to keep in mind the context that this arrived, right, that we’re not talking about an industrial facility that’s dumping toxins into the water somewhere, right, and how much -- You know, whatever they would have to do, or their permitting, right, and this is a landowner, and a landowner who wants to fill part of his property, and I think, you know, that context has a lot of appeal to the current conservative majority, property rights, private property interests, and those interests were strongly at play here, right, and I suspect

-- Well, there's no suspect to it, and that's why this litigation was funded by the Pacific Legal Foundation, is those property rights issues.

The science in this -- You know, when you're reading it, the case isn't about the scientific information supporting interconnectivity between adjacent wetlands and navigable waters, or waters of the United States, however you want to characterize it, and it's sort of -- At least if you look at the majority opinion, and as I recall Justice Thomas' concurrence, it's all about the history of it, right, and how far the federal government has asserted its authority, and it's not about the science underlying how far it should assert its authority.

MR. MORRISON: I would heartily second that, and just an additional comment. I mean, one, the case's contexts are very carefully chosen when they're taken to the Supreme Court, especially by an organization like Pacific Legal. I mean, they didn't choose, you know, a company dumping toxic wastewater into a wetland for a reason as the case, and the context is very critical, and, you know, it admittedly produces some bias, in terms of an outcome, and it's going to be very sympathetic.

The Pacific Legal Foundation -- The other point that I wanted to make to that, just the same last term, the Pacific Legal Foundation brought another case to the Supreme Court involving a homeowner up in Minnesota, and I don't know if you heard about this one, but it was a friend of mine that worked on this case, and the homeowner was a ninety-something-year-old woman, and she had her own, and she owned it outright, and she got behind on her taxes, and so the municipality instituted a power of sale to collect on the tax lien.

They collected well, well above the amount of back taxes owed, but said that they got to keep it all, because she didn't pay her taxes, and so they took that to the Supreme Court, and the Supreme Court said, no, you only get the amount of the back tax lien, which seems very intuitive, and my point there is to say that the context of these cases -- I think a lot of people would agree with the outcome in that case, and probably the same organization, with same principles, is kind of limiting the power there, and so I guess give a little bit of the benefit of the doubt to court, and then put pressure where it belongs, really, and that's on Congress to acknowledge these scientific principles of what actually is a water of the United States. Then, when they write a statute, to make it clear, and to make it count, and don't just kick the ball to the courts to figure this out, because you get opinions like this, where the court says it's better for us to step back, and, Congress, you step in and speak more clearly.

MS. CROWE: Okay. Does anyone else have any comments or questions? Scott.

MR. KATHEY: So where does that leave us, as far as --

MS. CROWE: Very good question.

MR. KATHEY: As far as taking action based on this.

AP MEMBER: We define "waters".

MR. KATHEY: Yes, we're going to define "waters of the United States", and in the next ten minutes.

MS. HOWINGTON: Do we have a definition of what “waters” is, according to us? All right. So, up until now, I have had recommendations, or at least an idea, of where to go. Nope. I’ve got nothing. Right now, the only thing that we had on our outline is discuss the ramifications, which I feel like we have, of tides, groundwater, and clearly I think we’re kind of on the same -- This does have ramifications, but, ultimately, what are our recommendations to the council? Go for it.

MR. MORRISON: One question that came up to me, pretty quickly, and this was sort of as Wilson was talking, is are there any EFH that are potentially affected by this decision, you know, evaluating that and then kind of making a determination of, okay, what can be done there, because I think the response that Shep said is maybe it’s not so much to be concerned for us, because, even if an action is being taken in an area that is now outside of the waters of the United States, because it adversely affects an EFH, we still have something to say about that, and so, maybe in the end, it doesn’t really matter that much, but I would be curious if there are any EFH that are within wetlands where maybe that now, because of that derivative meaning of “wetlands” being in the Corps, and the Corps is now going to change its definition, we just want to keep an eye on that, and so I don’t know if it’s a monitor and evaluate sort of recommendation of the impacts of any particular EFH that are impacted.

MS. KNIGHT: I definitely think that’s a good idea, and, kind of along that same vein, maybe looking into, you know, what some of the South Atlantic states have in place as well, as far as, you know, something to counteract, you know, the -- I know North Carolina, and Gregg might be able to speak a little bit better to this, was DCM was working on some temporary rules that I think didn’t go anywhere, but, you know, the different states are doing different things to try to counteract this as well, and so figuring out what they’re doing and how we can kind of play off of that as well.

MS. CROWE: Benjamin, and then we’ll go to Wilson.

MR. THEPAUT: Casey, I think that’s really important to recognize. I will speak for the State of South Carolina. Our Coastal Zone Management Program is unique, in the case we do the federal agency permits, the federal agency activities, the federal agency funding, and, also, we have indirect authority, in the eight coastal counties, regarding state permitting, and so our office reviews stormwater permits, mining permits, et cetera, these land disturbance activities, and our role in that review is to regulate non-jurisdictional wetlands.

We require not only a review, you know, minimization and avoidance, and then mitigation, and so, in South Carolina, in the eight coastal counties, these non-jurisdictional wetlands are still protected. Again, what that essential fish habitat connection is, I’m not sure if there is any, but certainly an indirect watershed effect of the waters with the fish.

MS. CROWE: That was a great point. Thanks for bringing that up. Wilson, did you still have a comment?

DR. LANEY: I just wanted to let everybody know that, in Virginia, they did an analysis to look at the extent to which wetlands jurisdiction would be affected in their state, based on the Supreme Court decision, and then the Albemarle-Pamlico National Estuary Program is partnering with Virginia to do the same kind of analysis in North Carolina, and so it might be that, once that

analysis is done, we'll have a lot better idea of how EFH could be affected, based on what they determine will be the impact on the extent of, you know, protection and conservation measures, and so maybe that's something that we should, you know, keep an eye on.

I know that they initiated that back earlier this year, and I'm not sure what the present status is, whether they have finished it or not, and so I'll have to check on that, but they were working on that. Reed Corbett, who is with East Carolina University, is at the Center for Coastal Studies -- The Coastal Studies Institute in Wanchese, North Carolina, and he was the lead on that, and he was working very closely with Tom Allen, who was formerly at East Carolina, and he is now at Virginia Commonwealth, who spearheaded the study in Virginia, and so we should be able to get that information, once that's available, and that might help us as we try and figure out what the implications are, if any, for EFH.

MS. CROWE: Thanks, Wilson. Shep, go ahead.

MR. GRIMES: Thank you. I will jump in, and I should note that I'm cautious, or I'm cognizant of staying in my lane, and this is a little out of my lane, but I am going to still say that it seems, to me, that one legitimate comment, or concern, and not so much for the council, but the agency, as I mentioned, is the geographic scope of essential fish habitat is currently defined based on "waters of the U.S.", as it's defined in the Corps regs, right, and do you really want that now, with this limiting interpretation of what "waters of the U.S." under the Clean Water Act means, right, because EFH is defined in the Magnuson Act more broadly, right, and it's those waters and substrate necessary for -- Necessary to fish for spawning, breeding, feeding, or growth to maturity, and, you know, there's no delineation geographically in that, and so, anyway, that, to me, seems like something worthy of note. Thank you.

MR. MORRISON: I was going to ask that we consider, and maybe you can answer this, how the council, and what we're doing specifically in habitat, but how we provide guidance for determining whether a wetland or -- Basically, what would maybe fall outside of the waters of the United States, that area that we're focusing on, and how to evaluate impacts to EFH in those areas, and so what things to consider, and I don't know if it's a particular policy statement, if it's flows, or --

I don't know all the policy statements at this time, but are there policy statements that we should look at to update guidance for when someone is taking an activity in these areas, how that could end up affecting the EFH and clarifying, or updating, that based on what we're learning, and we know more about now, about this circulatory system that we talked about, sort of the interconnectivity, and I guess it's a little bit related to the interconnectivity issue, and that would be something for us to consider taking up, updating that, taking a look at it, making sure that we're speaking very clearly, and cogently, to provide guidance to any agency, or institute, that is taking action in those areas.

MS. CROWE: Wilson and then back to Scott.

DR. LANEY: So, thinking further along about this, and I'm trying to think of -- I can't think of any, but there aren't any EFH designations, that I can think of, that actually included any of those waters of the U.S. that were isolated or headwater or non-adjacent, and so, as far as a direct reduction in the scope of designated EFH, it doesn't seem, to me, there would be any direct reduction.

Again, I think it all gets back to the quality issue, and the fact that those areas that are no longer under jurisdiction were contributing to the quality of EFH, and now they, theoretically, won't any longer contribute to EFH, and so I think it's like Shep said, and, you know, as far as determining what the impact will be, we just have to sit back and say, okay, they made this decision, and now we wait and see what's going to happen, and the study, like North Carolina has done, and like Virginia has already done, will at least tell us a little bit about the scope, and we already talked about the fact that individual states can act to ensure that some measure of conservation, or protection, still remains in place on those wetlands.

What might be interesting to see is what happens, from a quality standpoint, if you look at the states that proactively -- Well, either already had protections in place or will act now to put protections in place, versus other states that might elect not to do that, and, you know, to see if there's any difference in the quality of EFH, all of which would be downstream of those areas that became non-jurisdictional.

I will add a caveat to that and say that some of us, independent of this whole discussion, have been looking at fishery-independent sampling programs in different estuaries, in different states, to see if we could compare estuaries that were allowing certain activities -- If we could compare the productivity, or the abundance, of fishery organisms, of fish communities, in estuaries where certain practices were taking place, versus estuaries where those activities were prohibited, and we have found it extremely challenging to do that, because, you know, different states use different sampling methods, sampled at different frequencies, and there are different tidal regimes in different estuaries, and so we thought, ah-ha, we can do this, and then, once we started digging into the literature, we said, no, we really can't do that either, and so it may be that we just don't have any clear insight into what the impact is for quite a while to come.

MR. MORRISON: I promise this is -- Well, I'm not going to make any promises about how many more times that I'm going to speak, but this all touches on some things that I really have cared about in the way that laws developed impact actual things, and one is you're kind of discussing potentially turning a problem into an opportunity, if you see states, that are now the ones kind of primarily responsible for this, use that as an opportunity to evaluate the benefits of programs being in place, versus not being in place, to protect these areas.

You've discussed some challenges with doing that, with different data, and the modeling tools, and is there a way for us to weigh-in on that, to suggest methods, or ways, to communicate, or just bringing people in and talking about the different ways of doing it, using this as an opportunity to basically evaluate the benefits of regulation and productivity, versus passivity, in states that are not going things, and so that's the first point.

The second point, Wilson, is I think -- I don't know enough about this, but I think you're right that there are probably are no EFH in these areas that are now sort of outside the Clean Water Act, but, if we think about what the Clean Water Act was doing for these areas, whether it's specific things that were maintaining water quality in these areas that now will no longer be applicable, because they're not subject to the CWA, can we recommend those types of things be done, as either mitigation measures, repayment measures, things like that, because they will now affect EFH, using what we're able to do to recommend that things that would have been done in a wetland,

because they were subject to the CWA, to maintain water quality, and those are no longer applicable, because of Sackett.

However, can we recommend that those activities be put into place in these areas that are no longer waters of the United States, with the Clean Water Act, but, because activity is now being conducted in those areas that will adversely affect EFH, we can make recommendations that those things occur, and use sort of what EPA was doing to inform our regulations, or the science, about maintaining water quality in those areas to protect the EFH, which is, you know, our job, and kind of all we can do at this point. Just circulate it, and I can type that, if you want to put a placeholder there for Stephen's thoughts.

MS. KEENER: So one of the considerations is, you know, talking about looking at potential EFH upstream, and it's the effect of the loss of wetlands on EFH everywhere, or not everywhere, but certainly downstream, and I'm looking at -- It's a report, and it may have been one of the ones that was referenced here, by the U.S. Fish and Wildlife Service saying that the loss of wetlands has disproportionately affected, or reduced, marsh -- Wait a second. I thought it said marsh. Anyway, I think that's a huge consideration. You know, when you couple that with climate change, sea level rise, resilience, I think it's just -- It's a much larger consideration.

MR. THEPAUT: I would like everyone to remember that the Clean Water Act provides some level of protection. Our Coastal Zone Management Program in South Carolina provides some level of protection, and those are only for impacts, or activities, requiring permits for the Corps, and thus a certification, and there are numerous exempt activities under the Clean Water Act, such as silviculture, agriculture, mining, haul roads, and so, again, we have direct impacts to essential fish habitat occurring in situ, where the actual species and habitat are, and, again, let's try to bring it back to essential fish habitat, direct impacts to that essential fish habitat.

MS. HOWINGTON: So, in response to that, Shep, you said earlier, and I think I wrote it down correctly, the definition of EFH is in CFR -- I think it was 128.3, and where is that, because I am looking at our User Guide, which is what we use to define EFH, as the council defines it, and we're referring to the Magnuson-Stevens Act, and so were you referencing something different? I just want to make certain that we -- Because, when you said that Magnuson-Stevens has a broader definition, I think we're referring to that when we define it.

MR. GRIMES: Well, I guess what I would say is my comment, and the bullet that you have there, that's up there, and it's the one of do we want to maintain the Corps regulation definition of EFH, and so what I would say -- I was going to send you an email, and I would change to do we want to maintain the Corps regulatory definition of "waters of the United States" in defining the geographic scope of EFH, and that's the comment I was making.

If you look -- The regulatory citation, and so the agency has national essential fish habitat regulations, right, and they're the regs, and they're in a sub-part that talk about defining EFH, and what it is, and then there is coordination and the consultation on EFH with other agencies is another section. Sub-Part J, and this is in 50 CFR 600.805, Purpose and Scope of Essential Fish Habitat, and it defines, under (b)(2), the geographic scope of essential fish habitat, and it says that EFH may be described, and identified, in waters of the United States, as defined in 33 CFR 328.3, and in the Exclusive Economic Zone, as defined in, and then it cites our regs, but my point is it's that

cross-reference, and that limitation -- You know, we're saying that the geographic scope may be -
- You know, we can identify EFH in waters of the United States.

Waters of the United States just contracted, and do you want to stay bound to that? That's the definition in Magnuson, and the statute itself does not geographically limit, explicitly, the scope of EFH, right, and it just says waters or substrate necessary for blah, blah, blah, right, and those waters and substrate, if we had the record to support it, might --

MS. HOWINGTON: So that definition that you're referring to is the agency's definition of EFH?

MR. GRIMES: Well, and it's not a definition of EFH. It is a --

MS. HOWINGTON: Sorry. Of waters in the U.S., as defined by --

MR. GRIMES: Well, it's setting -- It's putting a limit on the geographic scope of essential fish habitat, right? It's saying that it may be described and identified in waters of the United States.

MS. HOWINGTON: Okay, and so that's not a document that the council, nor the AP, could change, and that is not anything we have control over.

MR. GRIMES: Yes, that's exactly right. I would say that it really is an agency thing, that the agency would -- You know, the agency is responsible for those regs, and could change those regs, but the councils develop this, and provide comment, and that seems to be, you know, legitimate feedback to the council that the council could provide to the agency over this potential limitation in your national regs relative to essential fish habitat.

MS. HOWINGTON: Okay. Thank you.

MS. CROWE: Okay. Brendan has a comment and then Wilson.

MR. RUNDE: Thank you, and so it's established that EFH can only occur in waters of the United States, and what waters of the United States is just changed, but does that mean that the NOAA Fisheries does not have jurisdiction over any impacts that occur directly outside of waters outside of waters of the United States, but may flow downhill, so to speak, into waters of the United States, and that's correct, so that there cannot be a consultation on any impact unless it is directly affecting EFH in waters of the United States, even though it could be right next door.

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

MR. RUNDE: Okay.

MS. CROWE: Wilson, go ahead.

DR. LANEY: So Brendan went where I was going, and so would it be fair to say that, regardless of this waters of the United States thing, if the council, and NMFS, have designated something as EFH, then some species that they're regulating has to be able to swim in it, right, and so that's why I think -- I will try and restate what I said earlier, Shep, and see if you agree.

Yes, it has to be waters of the United States, and, well, if it was EFH, then it should have been waters of the United States, and waters of the United States has been redefined so that it's much less extensive than it used to be, but that's why I said, earlier, I don't think that affects the geographic scope of existing EFH, because it would have all been defined such that species, or their life stages, had to be able to reach -- Had to be able to continuously swim within those waters for it to be considered EFH, I think, because I don't think there was anything ever designated as EFH that something couldn't swim to, and so, once again, I'm back to where I stated earlier, and I think we just have to wait and see, you know, what happens, if there's an identifiable impact on EFH, and, again, I think it goes back to quality, and that's probably going to be something that is difficult to assess.

MR. GRIMES: I would jump in, and I agree with all of that. Yes, that's a good way of stating it, and the only additional thing I would say is, as we discussed, you could still, at least theoretically, to me, have an effect, or an action that was having effects on EFH, that was not necessarily occurring in EFH, right, and it was affecting those adjacent wetlands, or those things that are no longer waters of the United States, but there could still be an effect from that activity in what is designated as essential fish habitat.

MS. CROWE: David Dale, online, if you want to go ahead.

MR. DALE: Thank you. Thanks for recognizing me, Madam Chair, and I'm not a member of the committee, but, for those that weren't here yesterday, I'm David Dale, the Essential Fish Habitat Coordinator for the NOAA Fisheries Southeast Region in St. Petersburg. Hi, Shep, and sorry I missed the first part of your presentation.

I've been listening to the conversation, and, you know, in the EFH coordinator circles, you know, we've talked about some of the modifications that have been made to "waters of the United States", the definition of "waters of the United States", both by, you know, regulatory interpretation and the courts' interpretation over the years, and it really hasn't raised any flags in our circle, and so I think, you know, some of the conversation that you guys are having -- That probably it's not going to affect our designations directly is correct.

Our furthest upstream designations in the South Atlantic area are related to white shrimp, and so, if you want to see how far upstream we reach in our EFH identifications and descriptions, you know, just take a look at that white shrimp identification and description, and so, you know, in reading the -- You know, I started reading the preamble, and I'm trying to get -- If there was any rationale of why we chose the definition of "waters of the United States", I couldn't find it in both our interim final rule that we passed back in 1997 and the final rule in the early 2000s.

I'm not really sure what our thought there was, but, Shep, you know, we're not -- We're not bound by the EEZ, according to our regulation for identifying and describing EFH. However, we are bound by the EEZ for consulting on impacts to EFH, by the EEZ, and so, in your read of our regulation, are we bound by that "waters of the United States" definition for EFH, because of -- You know, a lot of times, we focus on words like "may" and "shall", and I would note that this has the word "may", but I think it's more of a permissive than a restrictive word in this sense.

MR. GRIMES: Well, I will respond, and so I knew you would go there, and I am a defense counsel for the agency, and I would argue the same thing, that it says "may", and this is just permissive,

and it doesn't mean that you can't do it, but, you know, I would say that, you know, reading these regs in the context, the way it's set up, you know, it seems to be -- Well, I wouldn't be overly confident that I would prevail on that argument.

Yes, it says "may", and it doesn't say "shall", but, in EFH -- You know, you have to designate EFH, right, and this is just saying, you know, this is where it may be designated. If it may not be designated outside of there, then you can't designate it outside of there, but, you know, I hear what you're saying, and I would also argue, I think, in this context, that, even if the Corps changed its definition, right, that we had envisioned something different, and the agency could argue you that, you know, what was intended at the time of this regulation was the broader interpretation of what constituted "waters of the United States", but I still think -- You know, to me, that new limitation -- Well, tying our geographic scope to the definition of "waters of the United States", as defined by the Corps, per the Clean Water Act is tying us, in some ways, to something that I don't necessarily think we need to be tied to. Not that there are a lot of -- I know, for us here in the Southeast, it's not that consequential, or isn't consequential.

MR. DALE: But, well, and what I'm wondering, and I would have to look deeper into it, is, you know, because our reach -- You know, if people recall Pace's presentation earlier in the morning, you know, our reach, under the Fish and Wildlife Coordination Act, is much more extensive, and so it seems, to me, that, you know, when we were making our regulation, or trying to make up our regulation, we would have thought about, you know, that reach, and so I'm wondering if there isn't a nexus to the definition of "waters of the United States" and the Fish and Wildlife Coordination Act.

Also, just as a matter of comment for folks in the room to consider, or folks on the committee to consider, you know, the agency has come under quite a bit of criticism that the EFH program is very -- That it's too far over-reaching for an agency that's responsible for managing fish that reside well offshore, and so any time, you know, NMFS starts to dabble inland, prying eyes start to take, you know, a very critical look at what we're doing, and so, you know, I would just kind of lay that as kind of the landscape that we're operating in.

Again, you know, in my circles, as the EFH Coordinator for the Southeast Region, and in talking monthly with my counterparts across the agency, you know, these changes to "waters of the United States" definition didn't raise much of a red flag, you know, with me, let alone any of my counterparts that deal with salmon, and so, you know, just kind of food for thought for the room. Thank you.

MS. CROWE: Go ahead.

MR. KATHEY: So, you know, based on the conversation to this point, it sounds like what's lost, if you will, would be those adjacent wetlands that, as Wilson so simply put it, a fish can't swim to from the ocean, and so, I mean, that first bullet that we have up top, where we're going to look into if there are any EFH areas that are impacted by this decision, I think the only areas that would be potentially lost would be those isolated adjacent wetlands, and so we can focus that search there and go -- Well, I don't even know if we need to at that point.

I mean, I hear Wilson's argument that, well, yes, this is part of the water quality that we have below that, but, as far as what we could do, we would be very limited, but I think that's the place

where the states could step in, and that's why I really like that component that we're going to look at what the states are doing, or could do, and maybe we could make recommendations to the council that could recommend to those states where they could do more.

MS. HOWINGTON: So Stephen, and I now love having a habitat lawyer on here, which is what you're called now, has actually given us two rewordings, and I have reorganized these, and so the first one was review and evaluate the impact of state and local efforts to conserve wetlands, what are now under the protection under CWA, due to change of the definition. Then this one to inform EFH guidance for consultations, and I will let you guys read, but I think those are much better-worded versions of what we had up here.

MR. MORRISON: We're finally wading into territory where I have some knowledge, and also kind of a weird obsession with statutory interpretation, and so you all can commiserate with my wife about that. One thing that -- To kind of put the practical spin on what Scott is saying, I don't know about -- If the Sacketts, in this instance, are building their dream home, and they've got to go get this permit, because they want to dump all this sediment into these wetlands now, and, obviously, they have to go to the EPA, and do we know if they had to get a consultation from us, or not us, but from NOAA about any impacts from their activities on EFH? I wouldn't think so.

DR. LANEY: Shep, correct me if I misspeak, but, in the case of the Sacketts, their property was on a lake, and it was an end of the lake, and I don't believe it had any connection to habitats that would support council-managed species, but it's interesting that we were talking about, you know, fish needing to swim to it. Fish, in fact, did swim from the lake up into the adjacent wetlands on the Sacketts' property, which was one of the arguments for them being jurisdictional, and so I just wanted to make that point.

I don't think that they would have had to do a consultation. They should have had to have a 404 permit, if jurisdiction had been maintained, you know, before the court's decision, and they would have had to do -- I am trying to remember the fish species, and I was recently reading all this stuff, and, by the way, I mean, if you Google it, it would probably pop up, and there were some very nice photographs of the wetlands that were on the Sacketts' property, and they clearly, to me, were connected to waters of the United States, or it looked like anyway, under certain conditions, depending on the elevation of lake, and the fish could access those wetlands.

MR. GRIMES: I was just going to say that I don't -- To respond, I don't have any idea, and it was certainly not mentioned in the case if they would have done any kind of essential fish habitat consultation. I think you described the property right, but there must have been -- You know, like it must have been on some lake that then had some connection to, you know, to a river, or a stream, that eventually leads into what, you know, a traditional -- Well, I guess all of which would be navigable waters, but I think it must eventually lead into the ocean, and I would -- Just because -- Well, I would say I seriously doubt they would have done any essential fish habitat consultation for any of that, just because of how far removed it is, and the Corps' program, but, ultimately, it would have been on the -- Excuse me.

I guess, if the Corps permitted the filling, that would be a federal agency action, and then that might -- That would have the potential anyway, to trigger an EFH consultation, right, and, if they just do unpermitted filling, and there's an enforcement action from the EPA, there's not -- There is no federal action there that's adversely affecting, or potentially adversely affecting, EFH.

MR. RUNDE: The lake is connected to a river, which is part of the Columbia drainage, and, of course, the Columbia flows to the Pacific, and so, yes, the lake was connected.

MS. HOWINGTON: Benjamin.

MR. THEPAUT: Thank you, and so the Corps is limited, based on the activity, or the methodology, and so they're limited to the discharge of dredge or fill material into waters of the U.S. If that's not considered a discharge, the Corps has no authority, and, similarly, the resource, and, if that lake was an upland-excavated resource, the Corps is not going to take jurisdiction of that, and I don't know the specificities of the Sackett case, but I know the real-world applications that Stacie can also speak to, when we're reviewing permits in tandem, is the Corps -- For example, for a dock, that structure in waters of the U.S., the Corps can comment on review, but if that, I guess, structure is in the wetlands, whether it be a walkway or some type of dock structure, the Corps can't control that.

Again, that's in essential fish habitat, and I have also, similarly, heard about this far-over-reaching shrimp, through my limited permit certification time, and I think we -- In this current climate, and definitely in South Carolina, we're pro-development, and, again, my job is to balance that development, and that's all I'll say.

MS. CROWE: Wilson and then Kathleen.

DR. LANEY: I was just going to say, to David's point relative to the jurisdictional extent, and reach, of the Fish and Wildlife Coordination Act, even given that, and, you know, he mentioned the salmon on the Pacific coast, where salmon do have EFH, but our anadromous species on this coast are not given equal consideration, and I will just make that point, but, even under the Fish and Wildlife Coordination Act, you know, it still has to be that a fish has to be able to swim there, for it to be jurisdictional, even under the Fish and Wildlife Coordination Act, I think, although the act would cover impacts to isolated and headwater wetlands, I think, but, again, none of those have been directly designated as EFH, and they just contribute to the quality of downstream EFH, and so still, even under the FWCA, you know, there are limitations.

MR. KATHEY: I was wondering if Shep, or Dale, could clarify, and I know that the waters of the U.S. are used as a proxy, if you will, for EFH, but clearly Lake Tahoe is a water of the U.S., right, and we would never exert EFH influence there, and so -- I'm not as familiar with the codified regulation for EFH, but it must have some kind of boundary, and not just all waters of the U.S., but how does it distinguish where that line stops, where we don't include -- Do they have to be able to swim there from the -- Is that what the language states, essentially?

DR. LANEY: I don't think the language states that, but that's the practical extent of it. I think you view it kind of -- It's kind of a hierarchical thing, and, Shep, again, I will defer to you on this, but I think what he's saying is the agency picked up the Corps' definition of "waters of the United States", and so that's the broadest category, and, under the Clean Water Act, and under everything else, then, to me, EFH is a subset of that, and it's defined by where some life stage of some managed species lives, at some part of its life cycle, and so that's a subset that is further down in the hierarchy. Navigable waters is one that we define, based on our human ability to transport

goods on it, and so it's also at some lower level below waters of the United States, which is the overarching umbrella term.

AP MEMBER: Shep, could you tell us where in the CFR, and probably 50 CFR, where that's distinguished, for what EFH and what the boundary is within waters of the U.S.?

MR. GRIMES: Well, the regulation that cross-references the -- The EFH regulation that cross-references the Corps definition of "waters of the United States" is the Purpose and Scope of EFH, which is 50 CFR 600.805, and that established, as I said, the geographic scope, and I think your discussion is all spot-on, and, you know, if the agency was looking at this, and I imagine that, when it came in, that that was a nice, good, existing definition of waters that are generally considered subject to federal authority, right, and I think the Supreme Court case even touched on that, right, when they talked about the Corps' definition that was sort of coterminous with federal jurisdiction under the Commerce Clause of the U.S. Constitution.

That's really where all that history is kind of coming from. You know, the agency uses that definition, thinking that's, you know, effectively as far as you could reach in length, but I think that -- You know, I guess the question now is really that it's not as far as it was before the Sackett case, but is that far enough, and I just think, you know, if you look just at Magnuson, what the definition of EFH is, there is no express geographic limitation on it, right, other than say what you would infer from Wilson's point, that it must be necessary for waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity, and so they've got to swim there to do some of that, or, actually, you know, you could make the argument that it's necessary for them to do that, and maybe you don't physically have to be able to get there, but, you know, it provides some necessary feeding or growth function for you in whatever location, if that made sense, and I sort of rambled there, I think.

MR. MORRISON: I just want to respond briefly to what Scott said, and I think that one of the limitations is that there has to be a fishery within a fishery management plan, right, and so the geography could be really broad, but it's only where there is a managed species that's subject to a fishery management plan, and that's sort of my understanding of the other limit, and so, you know, Lake Tahoe, for example.

MR. GRIMES: I would say absolutely, and, well, for EFH, EFH is something designated in a fishery management plan, and so, if there is no FMP, then you don't get into any of this. I mean, we only designate EFH for managed species.

MS. HOWINGTON: All right, and so I'm going to try and pull the panel back into these things that we have in bold of what can we do, and we have had this great discussion of what the implications could potentially be, but what can we do as actionable items, and so we can look into any EFH areas that are impacted by this decision.

I'm going to be honest that, based on this conversation we've had, I don't foresee very many, but I can look into it, and, if so, monitor and evaluate, and this is going to be one of the funnier recommendations, is recommend to the council that the council recommend to the agency to change the definition of "waters of the United States" from the Corps definition to the more broad Magnuson-Stevens definition, because, if that happens, then we go back to what our initial -- It

actually matches with what the council defines as EFH right now, and so that might be good, just to make everyone unified, and so we can make that recommendation.

Review and evaluate any impact of state and local efforts, and that goes back to, if there is any EFH areas that we would normally have defined as EFH that are no longer, contacting a state -- You know, probably contacting our state reps here and saying, hey, this is a section, and do you have South Carolina CZM, and is there any loss of protection, and, if not, maybe we're good, and then inform EFH guidance for consultations triggered by activities in wetlands that are no longer protected, to try and maintain water quality or other standards, because I feel like that's our biggest concern, is not necessarily what we are defining as EFH, but what is further up into the water that is going to impact us.

That's going to be the more broad-reaching impact, and I don't really -- Ultimately, that's something that I would want to talk with Jordan and Pace, and have a conversation with HCD, of EFH guidance and consultations and how this is going to impact them. I feel like that would be something that I can bring back to you guys, and say, hey -- Like, if Jordan were here, I would just be having the conversation with her, but she's not, and so maybe go to HCD, if that's okay with all of you, and start a conversation, and, if they say, yes, I don't foresee this having a large impact, or that's outside of our jurisdiction, or I can come back and relay that information to you, or Jordan can. Do we have any other action items, because you've got two minutes until we're late.

DR. LANEY: No, but I just wanted to reference back to the fact that, when we were talking to -- Or when David was talking to us, he referenced the fact that the furthest upstream EFH designation that the South Atlantic Council has in place is for white shrimp, and that one doesn't go anywhere near as far upstream as the anadromous species go, which, again, we did address in the 1998 habitat plan for what would have been EFH, if we could designate EFH for those species, and they have done that for salmon on the west coast. I will note, once again, the inequity between the way anadromous species are treated on the west coast versus on the east coast.

MS. HOWINGTON: I am also adding your recommendation to contact ASMFC, to ensure that they are aware of this issue.

DR. LANEY: They are very much aware of it, and Simen is well aware of it, and we had a whole session at the Habitat Committee meeting on it, and so they're talking about it also, and, yes, since we have representation from the Habitat Committee on this AP, then we're good, and I think we can ensure that we'll have that mutual dialogue, and, if they discover anything that we didn't think of, and vice versa, we can share that information.

MS. HOWINGTON: We're just a minute early. Come on.

MS. CROWE: Okay. We're wrapping it up. We will reconvene tomorrow morning at 9:00, right here, and it is a shorter day tomorrow, and so come prepared to knock it out. Have a good night.

(Whereupon, the meeting recessed on April 23, 2024.)

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APRIL 24, 2024

WEDNESDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Crowne Plaza, North Charleston, South Carolina, on April 24, 2024, and was called to order by Chairman Stacie Crowe.

MS. CROWE: Good morning, everyone. Welcome back to day-three of our habitat meeting. We are going to start today with Kathleen, who is going to give us an update on Coral 10.

MS. HOWINGTON: Okay. Since we have some new members, I wanted to give you guys an update on Coral 10, but, first, I am going to start with a little bit of history. Coral Amendment 8, in 2013, expanded our Oculina Habitat Area of Particular Concern closed area. This was along the eastern boundary of this area that I believe is on the Blake Plateau, and that was previously accessible to the rock shrimp fishery.

In 2021, the council developed Coral Amendment 10, and this proposed an established shrimp fishery access area along just the eastern boundary, and so you can actually see that right here, the northern extension Oculina proposed shrimp fishery access area, which would allow the rock shrimpers to be able to trawl. Currently, it is prohibited.

That amendment was submitted in December of 2021, and then, in July of 2022, the council received a letter of disapproval, quoting that the amendment did not include adequate analysis to guarantee the FMP would minimize the adverse effects of fishing on EFH and minimize bycatch, and so it kind of just paused for a little bit, where it just sat and existed, and then, in September of 2022, the council received a new study from the Science Center.

It was called a visual survey of the proposed shrimp fishery access area, where they found no live or standing dead colonies in the low or no-relief areas, and the conclusion was they cannot state definitively that no live oculina colonies exist, but they could not find any. As you can see on the right-hand side, you've got the dive tracks where they were looking, looking for any kind of rubble in their visual survey.

Then, in December of 2023, the council moved to resubmit Coral 10 after the following modifications occurred. They wanted to include a bycatch probability assessment, include more information about minimizing effects of EFH, incorporate information on the September 2022 mapping study that I just mentioned, and then any new data, as needed.

After that, then, in March of 2024, the IPT meeting reconvened, and they discussed the new study that was presented in September of 2022, and they discussed the rejection letter and the details of why the amendment was rejected and then any areas of updated analysis and language enhancement.

All of the writing responsibilities have been dispersed amongst the IPT, and we are currently working, actively working, on those, and then the IPT will hopefully meet at least one more time this summer to finalize the amendment, hopefully in time for the September 2024 meeting, and I

wrote this prior to the IPT meeting, and so there is a chance that it might be December of 2024, but, sometime this year, the council is going to receive the new finalized amendment with the enhanced wording, with updated analysis. We also, during that meeting, decided to add in an update economic analysis as well.

That is the current plan, and I just wanted to give you guys an FYI that this is coming up, and you're probably going to start hearing about it. We have already received public comment during the December 2023 council meeting, where we were just discussing do we want to resubmit it, and what do we want to do with Coral 10, and so this is something that should be on all of you all's radar, and I wanted to let you know, and that's about it. We have no AP action here, and so, if you all want to discuss, go for it, but I have no requests from you all in regard to this.

AP MEMBER: What's the depth there, where that open area is, or opened area, I should say?

MS. HOWINGTON: I would need to look that up. I was hoping it was on here, but this is just lat and longs.

AP MEMBER: Okay. Thanks.

MS. HOWINGTON: But I will follow-up with you.

MS. CROWE: Brendan, go ahead.

MR. RUNDE: Thank you, Madam Chair. I think I missed the presentation in September of 2022 by Andrew David. Other than corals, was there any EFH, any hardbottom, observed in the area from the visual survey?

MS. HOWINGTON: Not that I am aware of, and then, in here, it actually does have the bathymetry. It's ten to 600 meters.

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

DR. LANEY: Yes. Thank you. So I know that the Shrimp and Deepwater Shrimp APs are meeting this afternoon, and will be discussing Coral 10, and presumably their input will be gathered, and is the Coral AP also going to be able to meet and/or review it?

MS. HOWINGTON: That is not the plan at this time, because we are not requesting -- The Coral AP was not planning on meeting at any time this year, and we are going to -- And we're not planning on requesting any information from them. I'm going to let them know that I'm going to be giving a Coral 10 update in June, and they are aware, and I have emailed them and let them know that the council was moving to resubmit, and I have not received a lot of communications in regard to interest, but right now I'm just -- I'm keeping them in the loop.

DR. LANEY: Well, I will just say that I think, you know, all of the revisions, and planned revisions, to it will make it a stronger document, and it will certainly allay some of the concerns that were expressed in the past, and I would be comfortable, more comfortable, if the Coral AP, you know, had a shot at providing comments, and I guess they will. Even though if they're not

meeting as an AP, they can still -- Members can still comment on it, and so that would be good, I think.

I will just say, you know, the thing that was most bothersome to me was the proximity to, you know, the Oculina HAPC. Having done quite a bit of trawling myself for fishery-independent work, you know, I'm well aware of what trawls do to the bottom habitat, and, also, the fact that it's not particularly easy to maintain a track, especially if you're towing a big trawl. You know, a trawler takes a while to make a turn, and so, the closer it is to the HAPC boundary, the more concern I would have, just because of the proximity thing and the sediment resuspension and all those sorts of impacts, in addition to the bycatch as well.

MS. CROWE: Anyone else have a question or a comment? Paula.

MS. KEENER: Thank you, Madam Chair. In September of 2022, the study concludes no live or standing dead colonies were observed on the low and no-relief areas between the oculina mounds, and what was the extent of mapping in that area, and was the characterization, mapping characterization -- How was that done? Was that done with -- It says "visual surveys", and so I'm assuming AUVs, ROVs, camera sled, and/or multibeam, and, I mean, that's visual, in a way.

MS. HOWINGTON: Do you know this study better than me, the 2022 study? I read it, and I summarized it, and then I apparently never -- We will send the study around in one second.

MS. KEENER: Okay. Thank you. That was done by the Southeast Fisheries Science Center?

MS. HOWINGTON: Yes.

MS. KEENER: Okay. Then -- Just one second. Let me get back. I think that was my last question. Thank you.

MS. CROWE: Thanks, Paula. Anyone else? Go ahead, Stephen.

MR. MORRISON: Kathleen, while we're asking questions you had no reason to be prepared to answer, do you know if there is any data about pre-2013, when it was accessible to the rock shrimp fisheries, and if there's any data about the impact to the area, or bycatch, things like that?

MS. HOWINGTON: Not that I'm aware of, but I can ask Laurilee what it was like, because she does rock shrimp. Laurilee, do you want to describe this area prior to its closure?

MR. MORRISON: I would love to hear from the shrimp fishery on that. Thank you.

MS. THOMPSON: Thank you. I appreciate this opportunity. We started rock shrimping in the 1960s, the mid-1960s, and we fished that bottom, you know, for decades. Before I get emotional, in fact, my father was instrumental in urging the fishery to accept the closure for the reef, and he alienated many of his associates and friends in doing so, but, you know, he finally won out, and the rock shrimp industry was the first industry in the South Atlantic to put vessel monitoring systems on their vessels.

They were the first industry, fishing industry, in the South Atlantic to do a closed, limited, entry, and so they started out with I think 150 permits for rock shrimp vessels, and it's down to -- We usually average around twenty vessels fishing now, out of that 150, and about eighty of them still hold their permits, but so this particular piece of bottom they had been fishing on for more than fifty years.

The coral seems to be okay. You know, in the studies that they did, the pinnacles and everything looked okay, and they had plenty of life and everything, even though the boats have been fishing there for more than fifty years. It's mud bottom, and they don't fish in hard substrate, because it will wreck their gear. They are very, very careful about how they fish.

They do trawl parallel to the reef. If they make a turn, they turn towards the offshore to make a turn, and they probably don't even make a turn dragging the nets. They're going to pull their nets up before they try to make a turn, and it's only the very experienced captains that will even attempt to fish on the offshore side of the Oculina reef. It's on the continental rolldown, and it's a very steep drop-off. There's just a little thin area where the -- So, in the early part of the season, the rock shrimp start out on the inshore side of the reef, and so the boats are fishing, and they have a lot of area that they can fish on the inshore side, but, as the Gulf Stream shifts further offshore, the rock shrimp follow it.

They go with the stream, and so, if the stream shifts offshore, the rock shrimp are going to move to the offshore side of the reef, in the mud bottom, but it's a lot -- It's just a little, thin strip that they can fish on, because it gets deep so fast, and then they can't even get their gear to the bottom, and so it's a very narrow area. The loss of that area did impact them on the years when the shrimp moved to the offshore side.

They don't fish there a lot, and it's just, you know, sometimes, when the stream shifts, and the shrimp move offshore, that's when they will fish there, and so they're not fishing there every year, and it's been several years since they were even fishing in that area. This year -- Last year, we had the best rock shrimp season that we've had in thirteen years, and I have my own theories about that, and they involved the -- They involve Lake Okeechobee water being, you know, dumped out onto the reef.

I believe that, we all believe that, the nasty water from Lake Okeechobee has really done serious damage to the southern end of the Oculina reef. My boats don't even fish down there anymore, and that used to be where they mainly fished, but, after three years of no discharges from Lake Okeechobee, boom, we have a good rock shrimp year. Go figure, but, usually, a good year is followed by a bad year, and you can look at the landings, and you can pretty much see that pattern.

This year was a bad year, and, also, this year, the shrimp moved offshore really, really early, and so the few captains that are even capable of fishing out there -- They said that they would have had a much better season had they had access to that little small twenty-two-square-mile closed area.

We work with the Coral Committee a lot, and, back in like 2013, when they were first, you know, doing all the work to start Coral Amendment 8, we had a joint meeting with the Coral Committee. I was at that meeting, and it was very jovial, you know, and there was a lot of good conversation, and, at that meeting, the Coral Committee agreed on a set of coordinates that included this piece of bottom, but then, when the amendment went to the council, that eastern edge of the access area

had shifted to the east, and we cried foul, and said this is not right, and this is not what we agreed to, but, unfortunately, the recording of the joint meeting -- Somehow, the recorder didn't get turned on for the afternoon part of that meeting, and that was when we had the discussion about where the boundaries would appear. There was no recording, and so there was no real evidence of what was discussed at that meeting.

The boundary got shifted to the east, and we said, no, no, no, that's not what we agreed on, and the council said we need to get Coral Amendment 8 approved, and we all agreed, and the fishermen wanted to -- We wanted the coral to be protected also, and so we were told, at that time, go ahead and let us send Coral Amendment 8, and then we'll come back and we'll do another amendment that will establish a shrimp fish access area in that little corner that got cut off. It was eight or nine years later when they finally got around to doing that, and so that's where we find ourselves today.

It's mud bottom, and let's see. Bycatch was one of the things that the Secretary was worried about, and I have pictures, from the 1970s, of crew members standing next to a big, huge pile of rock shrimp, and it's got all kinds of flounder and large finfish mixed in with the pile of rock shrimp, and now I've got a video from Marilyn Solorzano of -- It was taken a year or two ago, and it's showing that the nets are dumping the shrimp out on the deck, and it's almost clean. There is no big finfish in it at all. There's a few smaller finfish, but the bycatch reduction devices, which all of the shrimp boats are required to have, they work.

If you look at that 1970s photo, versus the video from a year or two ago, it's very clear that the bycatch reduction devices work. I can't address the sediment plume. I don't know. You know, I understand, and I get it, and the closest point is on the northern end, and I don't know if you can blow that up, Kathleen, or not, but there's a couple of little yellow dots up there. There is one pinnacle that sticks way out, and it's probably there around Number 10, and it's 183 meters, but, as you go further south -- They don't even fish up on the northern end that much.

Most of the area that they like to fish in is right down there just north of -- Right there, and see where it's -- Right there. If you look at the width of the HAPC, we lost sixty miles of offshore bottom, back in like 1994, I think, when they did the first expansion of the Oculina HAPC, and they completed missed the coral. They had two little satellite fingers that stuck out to the west that included Oculina coral, and the other entire closed area was mud bottom that is east of the coral.

Well, the boats stay out of the coral, because they don't want to lose their gear, and so, you know, then they came back, several -- Many years later, about ten years later, and they did the western boundary extension, and then they finally protected the southern part of the reef at that time, but we lost sixty miles of trawlable bottom that we never got back, and so the shrimpers -- They feel like, you know, they've worked with the council, and they've given up bottom, and given up bottom, and given up bottom, and they're like -- They don't want to give up this last little piece, you know, and it's like we were promised, and we were told, and they would like to be able to get that little piece back, because, in the years when the shrimp are on the offshore side of the reef, it would make a difference in their catches. Does anybody have any questions? Wilson.

DR. LANEY: Hi, Laurilee, and so did you know, or do we have data, I guess maybe would be a better question, as to what percentage of the catch came from that area when it was open, historically?

MS. THOMPSON: Roger did some -- He looked at the VMS charts, and made some calculations, and it was like I think 1.6 percent of the catch, and then there was another calculation that he did, and that bumped it up to like 8 percent, but that was of the total catch, you know, for like a number of years, but, if you take a year like the one we just had, then that 8 percent could have possibly been 80 percent, and so, if you look at it in all the years when most of the fishing was being done on the inshore side of the reef -- It's dangerous to go out there.

You've got -- You really have to know what you're doing to even try to fish in that depth and in that -- The tide runs a lot harder on the offshore side of the reef than it does on the inshore side, and so they don't even like to go out there, but, if you would have taken this last year, and compared, you know, the VMS tracks, it would have been a lot more than 8 percent, and so it just depends on where the shrimp are. Shrimp are in different places every year.

MS. CROWE: Let's go with Matt first and then back to Stephen.

DR. JOHNSON: So I do have some questions. I was heavily involved in this from the NOAA side, being that I run the coral program, and the question, I mean, to you guys, is, if the shrimping is primarily down south, why not limit the extent that they were trying to get back, because I think that was one of the primary issues, is that some areas are possible, but why go for the whole sixty miles?

MS. THOMPSON: You know, if you open up the offshore side of the sixty miles, it was irrelevant, because it's too deep, you know, and it's a good -- It's a good area, you know, for like yellowedge grouper, and snowy grouper, and it's a good respite from the fishing pressure for those animals. You would have to open it up close to the reef, you know, just like this little piece that we're talking about, in order for it to benefit the shrimpers. Opening up the whole width of that -- Can you go back to the bottom part?

DR. JOHNSON: So why not limit it to just the southern end, where you say most of the fishing occurs?

MS. THOMPSON: Limit what? The reopening it up?

DR. JOHNSON: Yes.

MS. HOWINGTON: He's saying like, instead of having this whole --

DR. JOHNSON: Why not just the southern end?

MS. THOMPSON: Well, because you would have the same argument that we're having right now today. They would want to be able to trawl real close to the pinnacles, because that is where the shrimp are. The shrimp are coming out of the *Oculina* reef, and, as they come out, and they move offshore and into the mud bottom, that's when the boats can target them, but they can only target them in a depth where they can get their nets to the bottom, and that's very, very narrow.

They would love it if you opened up the whole southern part, but you would have to -- In order for them to be able to successfully fish it, it would have to be opened at the same -- You know, the same closeness to the pinnacles as what we're talking about on the northern end. The bottom rolls

off so quickly that they only have just a small -- It's probably only like a mile or two area that they can drag in that they can actually get their nets to the bottom.

What happens is the shrimp are coming out of the reef, and they're falling off down the continental shelf, and we don't know where they go after that, but so they are -- There are so many shrimp coming out of the reef that they can repeatedly drag, you know, up and down that area that's close to the reef, and it keeps replenishing it, because there are so many -- So many rock shrimp are coming out of the reef, and so I would advise not to even open that can of worms to discuss reopening on the south end. I think we're better off to just try to keep that little tiny piece on the north end.

I mean, I have trawl tracks that show -- When they were fishing down on the southern end, that show massive amounts of trawl tracks that come right up to the bottom part of the closed area, and then they pull their nets, and they turn around, and then drop their nets, and then drag south again, and they don't even fish down there anymore, because the coral is -- There is no fish, and there's no bycatch, and there's nothing that comes up in the nets except some kind of weird algae that some divers looked at the pictures of the algae and said, oh yes, we've seen that, and it's the same stuff that grows around the sewage outfalls down in Dade and Broward County.

You've got impacts to the southern end of the Oculina Reef, and that's why the shrimp -- You know, the better fishing for the shrimp has moved north, I think because of the damage that's been done to the Oculina reef from the Okeechobee discharges, and that's just my opinion,

DR. JOHNSON: Fair enough, and I think one of the -- You know, I did not see that presentation from David, but I was involved, you know, in putting it together, and, you know, this particular cruise, we have several sort of -- I guess we don't have an official position, right, because we just hand off the data, but, you know, our opinion is that the cruise was met with some serious problems, because of the issues related to working in a current of that depth. The same issue that the shrimpers have, the same issue we were having with a --

MS. THOMPSON: Are you talking about when Andy sent the boat around in 2022?

DR. JOHNSON: Correct, yes.

MS. THOMPSON: Okay. I believe it. I mean, it is -- It's brutal out there.

DR. JOHNSON: Correct, and that's -- So our opinion is that the probability of detection with that was even low, given that even thirty years of recovery on an oculina reef results in about that much reef, and so any small outcroppings or anything would be probably missed without a very, very, very super extensive -- And you're looking at a sub, and, you know, that's the reason that the ROV had to be used, because you couldn't use multibeam, because of the size of the resolution of the images. That is sort of our position on that, that, even though the cruise did get out, that we still think there's a high probability, and we do believe that there was oculina there prior to the start of the fishery, and that, over time, that it eventually will -- You know, a little bit here, and a little bit there, and death by a thousand cuts, and it's now a mud bottom.

MS. THOMPSON: Sure.

DR. JOHNSON: So that's sort of our thinking on that particular subject.

MS. THOMPSON: Okay.

DR. JOHNSON: That, in a thousand years, there would be more reef there than what there is now, but, you know, you're talking that much in thirty years, is the growth that you're expecting, and so it's very hard to detect.

MS. THOMPSON: Okay.

MS. HOWINGTON: We have sent around the report. Thank you, Chip, and I did a quick just like where are the methods for you, and so this is what you used, the BATfish towing camera system, and you did twelve runs? Right, Matt? Okay.

MS. CROWE: Did you have a response to that?

MS. KEENER: Yes, and I have a question. What was the size of the study area, please?

DR. JOHNSON: There were three that succeeded, and the rest all failed, just because of the issues.

MS. CROWE: Stephen, did you still have a comment, and then we'll go to Wilson.

MR. MORRISON: If we're talking about the study, we can keep it on the study, and mine wasn't related specific to the study, and so I don't know if Wilson's is related to the study, and I will yield.

MS. CROWE: Go ahead, Wilson.

DR. LANEY: Thank you, Madam Chair, and, so, Matt, aside from the presence, or lack thereof, of any additional deepwater coral, and, again, my experience is limited to fishery-independent trawling, but, generally speaking, if an area is repetitively trawled, that tends to eliminate any bottom features, and, again, here, I'm not talking about coral, and I'm talking about just the structure of the sediment itself that would normally be generated by wave action and currents and so forth over time, and so, in your survey samples that were successful, could you all see that -- I think, Laurilee, you had indicated, to me, that the area hadn't been trawled in like, what, ten years, was when it was closed, and so it's been at least a decade since there's been any active shrimping in there.

What I was wondering, Matt, was whether or not, during that decade interval, the bottom has, you know, regenerated any sand ridges or ripples or anything like that, which Roger -- If I remember, Roger was always telling us that, yes, there may not be any coral there, but these areas adjacent to the HAPC are important for juvenile snappers and grouper and other species like that that might use these areas for foraging out from the reef.

DR. JOHNSON: I don't believe that we were able to collect enough data, just because of the difficulties in getting the sled down to the bottom. I mean, this was a very special -- They actually had to have the sled tow the boat, essentially, following the current, and so it was a complete backwards setup, just to deal with the current-type issues.

MS. CROWE: Okay. I think we're ready for you now.

MR. MORRISON: Mine is brief, and it's mostly just thanks, Laurilee, and I appreciate you jumping in and presenting all that, and I think it's -- It's consistent with my experience growing up on the back of trawling vessels, and just I would encourage -- As this study is being evaluated, and reevaluated, and as Coral Amendment 10 is being considered, to not overlook the input of the folks that have been out there for decades and what they know about that bottom, and how much they care about it too, because there is an alignment of interest there, and I can't speak for every shrimper, obviously, and each industry is going to have outliers that are less responsible, but, as a whole, I think there is a lot to be learned from, and a lot of benefit from working together, and so thank you for speaking on that.

MS. THOMPSON: Thank you.

MS. HOWINGTON: We will be bringing this -- I'm actually going to be making this almost exact same presentation to the Shrimp AP this afternoon, and so I'm really loving this practice that you're giving me. Thanks, guys. As the final slide is different for them, and we are asking for their input, and what the economic benefit would be, how much would they use it, and so we're going to be getting some of that data to be able to bring to the council.

MS. THOMPSON: You all are welcome to stick around.

MS. HOWINGTON: Matt, do you want to stay? You can talk about it.

DR. JOHNSON: I would love to, but I have another meeting.

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

DR. LANEY: Just to thank Laurilee for her historical perspective, and also to thank Matt too, for his information on the survey work that was attempted in the area, and an appreciation to Andy Strelcheck, and whoever else from NMFS, was able to at least get the vessel up there and make an attempt to provide us with some data.

If I remember correctly, I think Andy's comment, during part of the council deliberation, was know before you go, and that's a good principle to try and follow whenever you're trying to make a change in any area, of offshore especially, and you want to know what's there before you change regulations, and so I think that's a good philosophy.

MS. THOMPSON: Yes, and I can't tell you how deeply appreciative the rock shrimpers were to Andy for doing that. We were shocked, and surprised, and very, very grateful, and so, however this turns out, Andy was a hero.

MS. CROWE: Okay. Any other discussion on that?

MS. THOMPSON: Thank you very much for the opportunity to talk.

MS. CROWE: Thank you, Laurilee. We really appreciate it. Okay. Moving on to our next presentation, we have Julia Byrd, with the council's Citizen Science Program, and she's going to provide an update on program activities.

MS. HOWINGTON: One second, everyone. We're having some technical difficulties with the server. It's cranky with us. There we go.

MS. BYRD: All right. Thanks for bearing with me for a minute, you guys. For those of you that I haven't had an opportunity to meet yet, I'm Julia Byrd, and I oversee the council's Citizen Science Program, along with Meg Withers, who is our Citizen Science Project Coordinator, and so I haven't had an opportunity to come to the Habitat AP in a while, to kind of update you guys on some of the projects we have underway, and so I'm going to give you kind of a quick update on what's been happening in the program over the last little bit and hopefully try to focus on a few of the tools we have that might be of interest to you guys.

For the presentation today, I'm going to share a little bit of information on our research priorities, go over a few project updates, share a little information on the SciFish platform, which is something we've been developing with the North Carolina Division of Marine Fisheries and the Atlantic Coastal Cooperative Statistics Program, or otherwise known as ACCSP, and then talk a little bit about our advisory panels.

First off, just to give you kind of a broad overview of what our citizen science research priorities are, these are priorities specific to the Citizen Science Program that kind of guide the projects that our program develops and supports, and so the idea is there's a million different kind of data needs in the South Atlantic, and so these research priorities help kind of narrow the focus from all those data needs down to manageable ideas that are important to our kind of South Atlantic fishermen, scientists, and managers.

They're updated every two years, and we get input from a lot of our advisory panels, and we have two specific citizen science advisory groups that provide input, and so not only do these research priorities help us figure out what projects we want to develop internally, but, a lot of times, we'll get partners, or other groups, that want to work with us on kind of different projects, and so one of the first things we do when this happens is we share our research priorities with that group, to say here are some of the things we're trying to do, and do any of those overlap with some of our priorities.

A great example is The Nature Conservancy, which we have been working -- We kind of have -- The council has been working on some monitoring and spawning special management zones, and kind of the beginnings of those discussions to start that collaborative work were through us sharing our citizen science research priorities, and so we use them in a lot of different ways.

The council updated our research priorities last year. These are on the screen, and they're on our website, if you want to check them out, and I just wanted to show them here, because there's one that is specific to habitat characterization, and this was an idea that was proposed from one of the Habitat AP members who was on one of our citizen science advisory groups, and kind of the idea here was that, if citizen scientists could -- If a project could be developed that helped collect things like photos or videos, some of that information may be able to groundtruth some bathymetry data, focusing in on some essential fish habitat area, and so I just wanted to mention that to you guys.

We haven't had -- That's kind of a new research priority that was added by the council in December.

Next, I just wanted to share kind of a new online tool that we launched earlier this month, and we're calling it the Citizen Science Project Idea Portal, and so it's basically an online Google form that kind of any stakeholder, or any member of the public, can share a citizen science project idea with us, and so the idea is -- I'm sure there are a lot of great ideas that fishermen or scientists that we don't normally connect with -- They may have great ideas for projects that we need here in the South Atlantic.

It's an online form. Someone can submit an idea, in less than ten minutes, and what we're going to do is the Citizen Science Program will kind of review the ideas that come in in May and October, and then we'll use them to kind of update our research priorities, and so there may be ideas for projects that aren't in our priorities that we might to add a new priority, and then the other way we're hoping to use this tool is to help us connect fishermen and scientists that may have similar research interests.

Next, I'm going to get into three specific projects that we have underway right now, and the first one is the SMILE project, and this is a project that is being led by REEF, which is the Reef Environmental Education Foundation, and so some of you may be familiar with this group. This is a citizen science program that's been working with recreational divers for decades, and has been extremely successful.

The SMILE project is working to partner with divers to collect length information on some of our data-limited species, and so what this project is doing is developing kind of a laser-mounted Olympus underwater camera that divers can use, and you can see a picture of the camera right there, and they will kind of point the laser on the fish, like you can see right there, and then they'll take like a burst of photos.

Then, from analyzing those photos, we're able to get a length of the fish, and so the folks at REEF are working closely with folks at Scripts, and they're hoping to train kind of AI technology to help analyze these images, and so the camera was developed, and it was tested in the field for the first time last year. The field work for this pilot project is happening in the Florida Keys, and so data analysis is underway for that first field season, and they just started their second field season earlier this month.

DR. JOHNSON: Are they collecting effort on that?

MR. BYRD: So they are -- Do you just mean kind of where they're diving and that kind of information?

DR. JOHNSON: No, and the amount of time that they're spending searching for fish.

MS. BYRD: Yes, they are, and so they are pairing it with -- So they have a volunteer fish survey project, where it's like a visual census survey that they do, and so they're pairing divers doing that with people using the camera, and so, yes, and I think that effort data would be collected through the visual census survey part of the project. Does that make sense?

DR. JOHNSON: Yes.

MR. RUNDE: While we're interjecting, are these people -- Are these divers returning to the same site multiple times? One nice thing about programs like SEFIS to generate length distributions is that you know you're not sampling fish twice, because they're all dead. In the case of scuba divers, if you're returning to one reef, and taking pictures over and over again, that one red grouper that you keep -- You know, that's friendly, he might show up in your data twenty times.

MS. BYRD: I will say this is a pilot project, and so a lot of the project is in developing the camera technology and the AI, and then the methodology that the volunteers are going to use, and so dives are going to some of the same reefs in Florida, and there is also some opportunistic sampling. When REEF is doing dives in other areas, they're taking the cameras into the field too, and so that is something that's being talked about by kind of the REEF folks.

A lot of this project is figuring out the technology and the methodology that citizen science could use in the field, and I guess another thing that may be of interest to you is, when they're doing these SMILE-specific dives, not only are they taking down the SMILE cameras, but they're taking down stereo-video cameras, and so that other project is used so they're able to kind of pair, from a dive trip, what was caught by the stereo-video cameras and compare it to what's caught during the SMILE videos, to see if there are differences too, to try to get at the different sampling techniques that are being used, to see if there are biases in some of them.

DR. LANEY: Well, so I will ask Brendan, and Matt too probably, this question, but, if they were doing repetitive sampling at the same site, and, you know, if they had at least an N of three, then wouldn't that allow the -- If they are catching the same fish, which they could very well do if they're territorial species, but wouldn't that allow them to estimate, you know, the coefficient of variability, and variance, if they had more than one -- If they were doing more than one sample at the same site, and there might be some benefit to that, maybe, but I will defer to you guys on that, because you know more of the biomass than I do.

MR. RUNDE: Well, it just depends how the data are aggregated. If you analyze them on a trip level, then that's not a problem, but, if you aggregate into a distribution across all trips, then you're double sampling.

DR. LANEY: Yes, and I suppose, also, it would be -- Do you know, Julia, are they swimming a transect when they do this, you know, sampling literally the same route every time, or just randomly picking a site on a reef?

MS. BYRD: I think it's more of a visual census, where they're moving around and not doing a straight transect, and so I will say that a lot of these detailed questions are probably more appropriate for folks on the REEF team, and so, if I can't answer all of them, I can follow-up with the REEF team and let you know.

The other thing that may be worth mentioning too is so, for projects developed under our Citizen Science Program, we have -- We call them design teams, and it's like a stakeholder panel of people with diverse expertise that provide input and guidance on the design and development of a project.

For this project, on our design team, there are folks from NOAA who do dive surveys, and there are folks from Florida FWC who do dive surveys, and there are other people who do this sort of work with divers, in order to get feedback on things like the analyses and things like that, and so I just wanted to mention that to you guys as well, talking about kind of the context of this project and some of the analyses that may be done. I will say that REEF is -- This project is being led by REEF, and they have an amazing team of folks, from multiple universities, as well as kind of within their kind of REEF staff, who are working on this project. Any other --

AP MEMBER: So what you're saying is that they're still in the proof-of-concept phase here at this point, and they're just working out techniques, and the logistics, and the -- You know, the camera apertures and everything else for this, and so they're not really collecting data at this point, and, I mean, it's just proxy data for them to evaluate the survey technique, more than collecting data, right?

MS. BYRD: I would say yes, and another aspect of what they're doing is, again, when you're going on the same dive, and a scientific survey may use a stereo-video camera, and they're doing this with citizen science, so they can pair the types of data that you would have collected from those different methodologies, to see if there are differences and that sort of thing, and so that's an aspect of the project too, but, yes, this is a project -- So SMILE was very lucky to get funding through the Coral Reef Conservation Fund for a three-year project, and it's a pilot project, and so a lot of particularly the first year was developing what kind of camera and how --

You know, we wanted it to be something that citizen scientists could easily use in the field, and so it did need to be something -- So a lot of this is technology and methodology, figuring things out, and then, also, figuring out what would make a volunteer want to do this. Does a volunteer want to do this project? Yes or no? If not, what can we change to make them want it to do it more, and those motivation barrier type stuff too, and so that's a long-winded way of saying yes to your question. Anything else on this one? Okay.

I'm going to move on to our next project, FISHstory, and so I know that Kathleen has been beating the drum about historical photos with you guys, maybe earlier in the meeting, but we have a project called FISHstory that is using these historic fishing photos, from the 1940s, 1950s, 1960s, 1970s, and 1980s, to help us learn more about the fish that were caught, and the size of the fish that were caught, kind of prior to when we had catch monitoring programs here in the South Atlantic for the recreational for-hire fishery.

This project has kind of components. One is just trying to archive, digitize and archive, these historic photos, and the second part of the project uses the online crowdsourcing platform called Zooniverse, where we're able to train members of the public from around the world to help us identify and count the people and fish in the photos, and then the third aspect of the project is trying to estimate the size of the fish in the photos, using kind an item of known length in the photo, and so we're using those two-by-fours, or those two-by-sixes, where the fish are hanging on the leaderboard, to get an estimate of size of fish in the photos.

We did a pilot project, back in 2021, and we were really lucky, and there's a retired fisherman, Rusty Hudson, who is from the Daytona Beach, Florida, area, and he has kind of served as his family's historian, and so, for the pilot project, he was able to share over 1,370 of his family's

photos from their fishing fleet, and so were able to kind of analyze those photos, using kind of the methodologies we developed in the pilot project.

The pilot project was pretty successful, and I think we learned a lot of things that are going to help us kind of improve the project moving forward, but one of the things that we really need to do, in order to grow the project, is to increase our photo archive.

For the pilot project, all of the photos were from Daytona Beach, Florida, and so, in order to have the data collected from the photos be more representative of the region, we need photos from across the region, and so, this last year, we've been really focused a lot on trying to gather new photos from across the South Atlantic from the 1940s to 1980s, and so I'm here in the corner, should anyone have a photo they need scanned, and I'm happy to do it today, but we've been working really hard.

Last year, during the fall, we held six what we called scanning events, and so, at council meetings, or at other advisory panel meetings, I would set up in the corner, and ask people to bring in photos, and I would scan them, kind of at the meetings, and I would say kind of -- It was most successful at the advisory panel meetings. We had folks bring in photos, and we had folks share photos that were already digitized, and, even if people didn't bring in photos, one of the things that ended up being the most helpful is that AP and council members helped connect us to other folks in their community that might have photos.

A lot of folks helped connect us to other fishermen in their community, or restaurants, like The Sanitary in Morehead City, or to libraries. The Key West Library is a treasure trove of these old, historic photos, and so, even if folks don't have photos, if you guys have any ideas of where we might be able to find historic photos, that would be huge. That would be such a helpful thing to know.

Then the other thing I will note too is we've been kind of sharing information about the project, and about these scanning events, and then it was also really exciting that we had people that saw a social media post, or a saw a newsletter, and said, oh my god, I went fishing on that boat with my granddad, and here are my, you know, twenty photos from that trip, and so it's been really exciting. It's taking a little longer than we anticipated to gather new photos, but, last fall, we did a lot of hard work, and now we're really excited to say we have photos all the way from the Outer Banks down to the Florida Keys.

Through the efforts last fall, we were able to bring in about 600 or so new photos, and so we're still looking for more photos, particularly from the Carolinas, and then we need photos from the 1980s, kind of throughout the whole range, and so, if you guys have any ideas of where we might be able to find photos, I am certainly all ears, and I would love to chat with you more about it.

When we're looking for photos for analysis, and I figured this might be a little helpful, but, to make a photo good for analysis, the picture needs to be taken at the end of a trip, where kind of the harvested catch is displayed and the people who caught the fish are kind of with that catch. We need to have a photo date, and we need at least a year, and a ballpark year is okay, and we need at least a state for location, and then we like to have the photo provider's name and contact, just so we can keep them in the loop as to what's going on with the project and what's happening with their photos.

What makes a photo even better for analysis is if those fish are hanging from a leaderboard. That way, we can estimate the size, using kind of that lumber as a scale. If we have more date information, we can look at seasonality, and then, if we can have more kind of specific information on locations, or kind of the vessel name and captain name, that's great too.

Just a couple of examples, and this is one of Rusty's photos. It checks all the boxes. We have the exact date of the photo. We know who the captain was, who the boat was, and you can see all the fish hanging on the leaderboard, and so this is a great photo for analysis. This is another one, another great photo for analysis, and it's from the Oregon Inlet Fishing Center, and we got it from the Outer Banks History Museum up in Manteo, and then this is also a pretty good picture for our analysis.

Even though all the fish are laying on the deck, you can see them, and you can identify the fish laying on the dock. We're not able to estimate size. When the fish are laying on the dock, that becomes much harder, but this is another kind of photo that we're looking for and could be used in analysis. I will pause here for a minute, to see if you all have any questions about FISHstory, before moving on.

MS. CROWE: I saw Brendan, and then Wilson, and then Stephen.

MR. RUNDE: Julia, presumably you're only interested in council-managed species, right, because I can think of a place, an organization, that will have hundreds of blue marlin photos, but that's probably not useful.

MS. BYRD: I am guessing I know what organization you might be thinking of, and other people have suggested it too, and, I mean, I think there are some dolphin and things like that there that we're interested in, but, yes, right now, we're interested in council-managed species.

MR. RUNDE: 10-4, and I think I saw, in one of these slides, only through the 1980s, and so 1989 is the last year that you're interested in?

MS. BYRD: Early 1990s are probably okay too, and, just to give a little bit more context for that, so, when we were presenting results from the pilot study, we were really excited, and Kyle Shertzer, from the Beaufort Lab, reached out to us and say, hey, I have an idea of how these data might be able to help inform a stock assessment, and so, if we're able to gather enough photos, it would be cool to try to figure out if we're able to put together kind of an index of abundance, of sorts, from the photos.

To make that most useful, we would need to have it overlap with an abundance that's already used in surveys, and so the headboat index, the headboat logbook program, and the South Atlantic typically is the earliest index that is kind of developed, and so the idea is if -- That started in the mid-1970s-ish, depending on where you were in the South Atlantic, and so, if we have photos that go through the 1980s and early 1990s, we'll overlap that headboat index for a year, and so that's the reason we're asking for kind of the 1940s-ish, through kind of the 1980s or early 1990s. We've had a couple other people ask if they can provide more recent photos, and, yes, but that's not what we're really looking for for the analysis right now.

DR. LANEY: Julia, for most of the photos, or, well, for all of the photos, you're going to have the location where they were landed, and you also trying to pull any of the, you know, metadata as to where the fishing took place, so you could, you know, correlate the catch with the habitat at all?

MS. BYRD: Not really. I mean, I think we -- So, for instance, and it was really Allie who worked really hard on the FISHstory pilot project, and we talked to Rusty, and he was able to provide maps, and he said this is generally where these boats typically fished, and so, from talking to people who are providing photos, you can get kind of a general idea, but we aren't really trying to collect that data in a systematic kind of way.

MR. MORRISON: Are you all collecting photos like from commercial vessels, from like shrimp for example, and that's on my mind now, and is that something you're looking for too, in getting the --

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

MR. MORRISON: That was the implicit question.

MS. BYRD: I will say, for the analysis, right now, we're really focusing a lot on the for-hire fleets. However, you know, what we're finding out is that a lot of the people who have these old photos aren't going to be here forever, and so, if any -- Like I would love -- Like Laurilee has provided me a couple of shrimp photos, that she has kind of texted during meetings and stuff, and so, you know, we are happy to collect any of that kind of information, to archive it, and we're trying to get some metadata for each photo, to provide some context for each photo, and so like we've had some people share their commercial photos, which is great. They won't be used in this analysis, but, I mean, I think it's great to try to kind of save that history, when we can, because it's not going to be around forever.

MR. MORRISON: Thanks.

MS. BYRD: All right. One more plus for FISHstory, before moving on, because I know there's some fishy people in the room, and so, when we relaunch the project in Zooniverse, we have multiple volunteers analyze each photo. When there is substantial volunteer disagreement, we have a validation team that is made up of scientists and fishermen that help us confirm what's in a photo, and so we will be gearing up our validation team, in the upcoming months, and we'll be hopefully recruiting some new members to this team.

I know that Kevin was a member of this team in the past, and he did a great job. It's not a heavy lift, and you might be asked to review kind of fifteen to twenty photos in one month, but, if any of you are fishy people, and you would be interested in looking at historic photos, let me know, and I can follow-up with you with more details.

All right. Next, just a quick update on our Release project. This is a project -- This was the first project that kind of we launched under the Citizen Science Program. This is a project that's working with recreational, commercial, and for-hire fishermen to gather information on released shallow-water grouper and red snapper, using a kind of free app called SciFish.

The idea is we're trying to learn more about the size of the fish that are being released, and information that helps us better understand how many of those released fish survive, and so what depth was that fish caught, did you descend or vent the fish before you released it, and was there shark depredation, things like that, and so I just wanted to kind of mention that project to you guys.

If you're interested in learning more, or checking out some of the data that we've kind of -- Some of the information that we've learned from our participants, and, each year, we put together a -- By "we", I mean Meg Withers, who is the other kind of citizen science team member, and she puts together a data summary, and so this is a quick snapshot of the 2023 data summary, and you can see kind of the released submissions by state, fishing sector, species submitted, length comps for selected species, release treatment by depth, all kinds of great information, and so I just included a kind of link at the bottom here, if you're interested in learning more about the data that were collected last year.

Then the last project that I wanted to talk about is the SciFish platform, and, again, this is a project that we've been working on over the past several years with the North Carolina Division of Marine Fisheries and the Atlantic Coastal Cooperative Statistics Program, or ACCSP. Kind of the goal of the SciFish platform is to create a citizen science mobile application that also has a menu-driven project builder interface that would allow partners to easily create a customizable app, by just selecting kind of fields from a table, without the need to develop different applications for every new data need you have, or every new project you have.

When we kind of explain SciFish to people, we use kind of a gaming console analogy, and so it's kind of an umbrella application that can house multiple projects, and so SciFish is kind of the Atari, or the PlayStation, or the Nintendo, and then the individual projects are like the games, your Donkey Kong, your Frogger, your Mario Cart, that sort of thing.

The reason that we were really interested in developing SciFish is we wanted to try to reduce the cost and time needed to create these applications from the ground up, and, maybe even more importantly, it seems like more and more people were creating applications, and so we thought, if we had one application that could house multiple projects, we may be able to help increase consistency in the data fields, and the data structure, for citizen science projects along the Atlantic coast.

The SciFish platform is administered through ACCSP, and they have a new advisory panel that provides oversight for it, and so kind of how it works is, if you're interested in developing a project in SciFish, there's a two-step application process. The two-step application process, if you get through it, you get access to the SciFish tool. You don't get money for your project, but you get access to this application that will be your data collection tool for free. Projects have to be -- Projects either have to have an ACCSP partner as a PI or be sponsored by an ACCSP partner, and that basically means that a partner would have to provide a letter of support for your project.

I will talk a little bit more about the application process, but there's kind of four times a year that pre-applications are accepted and then two times a year that full applications are accepted. If you do a pre-application, and it looks good, you get asked to do a full application. If you get through that process, then you get to use our online project builder to build your customizable project, and you get to use the SciFish tool for free.

Just so you kind of have a better understanding of what the application -- The kind of information that would be asked of kind of PIs who are interested in building in SciFish, the pre-application -- If you see kind of the bluish-purple rectangles on the left-hand side of the screen, that's the information that is asked for in the pre-application, and it's an online Survey Monkey form, and it will take you thirty minutes or less to kind of fill out, but, basically, it's asking more about, you know, what you're hoping to get out of the project, who are your collaborators, what data gaps are you trying to fill, what is kind of a quick overview of your methods, what's the anticipated outcome, that sort of thing.

For the full application, we're asking for more specific information on things like your data management plan, volunteer training, communication plans, how you're hoping to evaluate the project, things like that.

The SciFish Advisory Panel will review applications. For the pre-application, we're just kind of making sure that all the sections are included, that you've clearly stated how kind of the data will be useful to assessment or management, and identify -- Articulate how kind of that project is a good fit for citizen science. Then, for the full applications, there is more kind of rigorous criteria, and there's kind of a rubric that each member of the SciFish Advisory Panel will fill out to kind of rank that project. Once you go through this process, and you get kind of checked, you're on to kind of develop your project in SciFish.

This has been a multiyear project, kind of developing this platform for other partners to use. The SciFish platform originally launched back in 2021, and it housed two projects, our SAFMC Release project and then North Carolina DMF had a project called Catch You Later that was collecting more information on released -- Like the flounder species.

Over the past couple of years, we've been working on the SciFish project builder, and I'm not going to go into this in detail, but it's really cool tool. There's a kind of video linked down here, that you can check out, if you want to check it out, but it's basically you pull up the project builder on your computer, and you're able to kind of customize kind of the home screen and the data fields that you'll be collecting. The data fields that are collected are based on ACCSP data standards. You can include kind of specific information about your project, and then you can also include links to websites, social media platforms, that sort of thing.

If you know what data fields you want your project to collect, you can build it in the project builder, and, within like fifteen minutes, you can push it to your phone, and it appears in the SciFish app, and so it's a really cool tool.

Back in 2021, the spring of 2021, or 2020, and I can't remember, and my years are going together, but, when we were starting to build the SciFish project, one of the first things we did was held a series of what we called scoping meetings. We wanted to see what folks in the Atlantic fisheries community would want or need out of a SciFish project, and so it was kind of a multistep kind of public scoping process, and they helped us identify the types of projects they felt would work well with the citizen science approach that were needed in the region and what data fields were needed to fill those data gaps. Here's a list of the current data fields that are in SciFish. Projects, right now, are limited to these data fields, but, as the platform grows into the future, we'll be able to expand the data fields that are offered.

Also in SciFish, there are kind of two account creation options. The first one is what we're calling manager approval, and so that's where PIs would create a SciFish project account for users, and so, in this case, the accounts are created in ACCSP's SAFIS system, and so that basically means - So, for instance, if you had a for-hire captain that was doing mandatory reporting through eTRIPS, or something like that, you would be able to connect that same person from your kind of SciFish project to kind of the other data they have collected in ACCSP's data warehouse.

The second option is kind of under development now, and it will be done soon, and it's called kind of auto approval, and that's where users would create their own SciFish project accounts, and so, at the start of a project, PIs have to choose which kind of account creation type they want to use.

We're really excited, and this has been a long time coming. We've been working on this project for three years, and we're hoping this tool is really helpful to many of kind of our partner agencies, kind of along the Atlantic coast, and we are working to finalize the project builder. Right now, we're making a few more tweaks and beta testing, but it's ready to go. We are accepting our first rounds of pre-applications for projects, and we had our first round in April, and we're accepting more pre-applications in June, and so I just wanted to share this with you guys as a possible tool that you, or any of your colleagues, could use for projects, for citizen science projects, across the Atlantic coast. That's it for SciFish, and so I'll pause here for a second, to see if anyone has questions on SciFish before moving on.

MR. RUNDE: I was trying to think about what to ask, or how to ask it, and so I think probably everyone in the room knows that, last year, the North Carolina legislature passed a bill that will require recreational reporting for virtually every important species that's caught in inshore waters, and could this application be used for that type of thing, which I wouldn't necessarily call citizen science, but more like the agency is making you do this?

MS. BYRD: So, on a technical level, if we have the fields in SciFish that they need, it could be used for something like that. I'm not sure kind of if the North Carolina folks have anything else to add to that. What I will say that, if it were to be used for something like that, kind of -- They would need to go through the application process, like everybody else, and the ACCSP's SciFish Advisory Panel would review their applications and that sort of thing.

MS. MURPHEY: Just to let you guys know, we're in the very early stages of trying to figure this out. Right now, I think we're, you know, looking at a way for folks to just put something online, a catch card, and so, I mean, we've not even gotten to temporary rules yet, and we're actually public hearing -- We're getting public comments now, and so this is the real early stages, and so why don't we just stay tuned and see what we come up with, but, I mean, that's an interesting idea, and so thank you.

MR. RUNDE: Thanks for coming to the table, Trish.

MS. KNIGHT: Well, North Carolina is interested in using it for our carcass collection program and our volunteer tagging program.

MR. RUNDE: Good to know. Thank you.

MS. BYRD: So, yes, and we're hoping this is -- I mean, I'm really proud of this. I think it's a really cool tool, and, when you play around with the project builder, and I think about long it took for us to develop kind of the SAFMC Release app, and you can build something on the computer, and it shows up on your phone in like fifteen minutes, it's pretty incredible, and I have the project builder on my computer. If anybody wants to kind of see it in action, just let me know, and I'm happy to pull it up over a break.

All right, and the last thing that I wanted to talk about was citizen science advisory panels. I am going through this really quick, because I know that Meg Withers talked to you all last fall about our advisory panels. We have one advisory panel that is made up of representatives of other council advisory panels, and so it's called our Citizen Science Projects Advisory Committee.

This group is basically responsible for helping us determine research priorities, kind of across fishery management plans, helping us with volunteer engagement strategies, and they meet typically via webinar, one time per year, and so, last fall, Casey volunteered to serve on this group. The Habitat AP is able to have two representatives on this group, and Jeff Soss was the other member of the Habitat AP that was on this group, and so he has transitioned off the Habitat AP, and so I just wanted to see if there's anyone else on the Habitat AP that might be interested in serving on our projects advisory committee. It's not a heavy lift, and it's typically one meeting per year.

I think it's really helpful, particularly when we're updating our citizen science research priorities, to have people from all of the APs. That habitat characterization research priority was because there was a Habitat AP member kind of involved in that group, to help propose that, so we could take it to the council, and so I'm really excited to have Casey, and I wanted to see if anyone else was interested in serving on this group. You don't have to volunteer now. You can come see me later, if you want to learn more about it, but, yes, again, we're really excited for Casey, so the habitat group is represented, but I just wanted to let you all know that, if anyone else is interested, we're happy to have you kind of join the group too.

MR. RUNDE: I am not volunteering, and it would be duplicative to have two North Carolina people anyway, and so you don't want me, but is that one meeting per year in-person, and, if so, where?

MS. BYRD: It's normally a webinar, and it's normally fall, and so we've done them in October and November, typically, over the past several years. All right. If anyone wants more information, just come find me in the corner afterwards, and then that's all I had, guys, and, if you guys have another other suggestions, in particular on where to find historic fishing photos, please let me know. I appreciate your time, and I'm happy to answer any other questions.

MS. CROWE: Thank you, Julia. Kathleen, would you like to start?

MS. HOWINGTON: Do you want to do a ten-minute break, and then the final presentation, and then hopefully we'll end early.

MS. CROWE: Actually, it's 10:14, and do you want to break until 10:30, so people can check out if they need to? So we'll meet back here at 10:30.

(Whereupon, a recess was taken.)

MS. CROWE: Okay, everyone. It's 10:31, actually. Let's get started with our last presentation of the day, and it is Kathleen who is going to give us some updates on the habitat webpage, which is part of the new council website, which came out a couple of years ago, and then she's also going to discuss the habitat blueprint and some goals and objectives associated with that. Hold on. We have Paula that has something to say.

MS. KEENER: I just have a question of order. I want to go back and talk a little bit more about Coral Amendment 10, and I don't know whether we should do that under Other Business, Item 11 on the agenda, or whether we should do that now. Thank you.

MS. CROWE: Let's address it now, and then we'll move on to Kathleen.

MS. KEENER: All right. Thank you. Kathleen, can you just clarify the next steps, please, for us?

MS. HOWINGTON: One second. I closed that presentation. I thought we were finished, and so I will open it back up, but, really, I will be bringing an update to the June council meeting this year, 2024, and that will basically just summarize exactly what I just said, of writing responsibilities have been doled out, and the IPT has already met. There is one more IPT meeting, at some point in time after the June council meeting, after I give that update and let them know what's going on and what has been completed, and then the goal, the stretch goal, is September that I will be bringing an updated Coral 10 amendment to the council for potential approval for resubmission. Most likely, based on feedback from the IPT, that will actually be December, but, right now, the goal is September, if we can, and December if not.

MS. KEENER: Okay. Thank you for that. So what will our involvement be with --

MS. HOWINGTON: The Habitat AP doesn't -- Like I said, this was a no-action item, and this was just an FYI, because you all are going to start hearing about it, and this is going to be brought to the Shrimp AP this afternoon, and I'm going to inform the Coral AP about the June council meeting, so they can give public comment, but, right now, we do not need feedback from the Habitat AP, in regard to -- Like the EFH was already approved, and all the writing was already approved for our sections that don't need to be updated, and so I don't think we need -- The Habitat AP is good, and this was just an FYI, because I figured it's a pretty controversial AP, or controversial amendment.

MS. KEENER: Yes, I know, and so we are a habitat AP, and it is important habitat considerations in Coral Amendment 10, and so we would not be involved at all in the amendment to Coral -- I mean, or the revision to Coral Amendment 10?

MS. HOWINGTON: In the revision no, because the Habitat AP has already helped produce the amendment, and this is just meant to be tweaking. We're not doing large revisions of lots of sections, and it's supposed to be just adding a couple of years of data and maybe enhancing some wording.

MS. KEENER: Okay, and so I don't -- When you say adding a couple of years of data, are you talking about the study that was done by the --

MS. HOWINGTON: The study that was done, as well as some economic analysis for the shrimp fishery.

MS. KEENER: Okay. All right. Well, the study was --

MS. HOWINGTON: Not analysis. Sorry. Economic data for the last couple of years.

MS. KEENER: Okay, and so my point is that the study was inconclusive, because of the limited amount of sampling, due to inclement weather, and so I'm not sure we have the data that we need to inform modifications on that amendment.

MS. BROUWER: Just to add to that discussion, if the council were to, for example, change their preferred alternative, or if they wanted to add another alternative to the action for analysis, then, at that time, they would, or they could, if they wanted to, bring it back to you guys for feedback, but we have no indication that they intend to do that right now. They want to just resubmit the amendment with the things that were noted by the National Marine Fisheries Service that were deficient, and so we don't think that addressing those deficiencies is something that, you know, the APs really need to weigh-in a whole lot.

Like Kathleen said, we would extend the descriptive portions of the amendment, and like there's a section that basically describes the shrimp fishery, and so we would add a couple more years of data to that description, because the amendment has sort of been sitting there for a while, but, in terms of additional analyses, we just don't anticipate that that's going to be happening, and we do intend to include, as you pointed out, the study, the visual survey, that was conducted, because that was not part of the amendment.

MS. HOWINGTON: The bycatch analysis was specifically listed in the letter, and so that is the one that we are going to be tackling.

MS. BROUWER: Correct.

MS. KEENER: Okay, and so one follow-on question. Matt, can you summarize what was in your report, based on the study? I mean, it talked about -- You know, you had the table, and I think there were only three successful samples that were collected, probably out of, what, a dozen, maybe, with the sled, and there is a summary paragraph, and can you summarize that, please? Thank you.

DR. JOHNSON: In general, we thought -- We felt that the probability of detection during the survey -- The probability to be able to actually detect corals of these size and spatial extent was minimal during the survey that we conducted, due to the logistic issues, and that's basically what was stated beforehand. Having only three successful dives where we go to the seafloor, and, really, taking the know-before-you-go approach, we still don't know, based on that, because of the -- You know, we put that trip together fairly quick, trying to meet the timeline of the rulemaking process, and we sort of internally feel that more research would be necessary to be able to make a definitive

argument as to whether or not there are or are not corals, or the potential for corals in that area as well.

MS. KEENER: Okay, and one follow-on question to that. I don't know much about sediment plumes with corals, and can you inform our understanding of the effects, as known by the agency? Thank you.

DR. JOHNSON: Sure, and so the understanding that the amount of damage that sediment plumes due to coral polyps is somewhat of an emerging field. We know very little about deepwater coral sexual spawning, and primarily they reproduce due to fragmentation, but they also will reproduce sexually, and we did get them to reproduce sexually in the lab this year, but, as far as timing goes, very little is known about that. It's never been observed in the ocean.

What we are finding, my team is finding, with the shallow-water corals, is that very, very, very small, one-millimeter sediment plumes, at the wrong time, will -- An entire cohort that is exposed to it, and so we're finding that extremely small, and this is part of our Port Everglades work that we're doing.

MR RUNDE: Just a really quick arguably pedantic point of clarification, and it was actually two successful surveys. The top line in that table was the test run of the sled that took place not within that area, and so --

MS. HOWINGTON: Okay, and so, Wilson, we'll return to you in one sec. I have, after conferring with Myra, and thank you, and giving a more detailed description, but, if the AP feels that they need to make a recommendation to the council, that can go forward. That's not an AP action where we're going to be doing anything, but I can bring a recommendation, in our AP report, to the council in June, if the group decides, and so I will open it up to that, after Wilson's comment.

DR. LANEY: Thank you, and so I wasn't -- I was just going to correct what was a probable misstatement on the record by myself, because I think I quoted Andy as saying know before you go, and he may in fact have said that at some point during the council deliberations, but I think the person that originally said it, per my consultation with Chip, was probably Dr. Clay Porch, or somebody else from the Southeast Fisheries Science Center, and so I just wanted to correct that on the record.

Then the other thing that I wanted to say was, and Kathleen sort of preempted this comment, but I would note that, even if the council has not requested input on this particular amendment from the AP, that still wouldn't preclude individual AP members from commenting on Amendment 10, when it come out for public comment, and so just to make sure that everybody knew that.

MS. HOWINGTON: There will be a public comment period during the June council meeting, where, again, I'm going to be bringing an update on the Coral 10 process, and so, if you feel that is appropriate, and that you would like to, that will be an opportunity for you to do so.

MS. CROWE: Go ahead, Stephen.

MR. MORRISON: I don't know if I have any thoughts on whether we should go to the council and say the AP needs to make a recommendation, but it just seems like, given the timeline for this,

and how long it's going to go on, the fact that the AP has weighed-in on the AP that went up, and I just wanted to be very sort of precise about what we intend to do. I think we've had a lot of good discussion about it, but, if it just ends up being more talking about it, I don't know if that would be fruitful.

There could -- Some of that could go into the public comment by the individual AP members, or even a group of AP members, but, if there's something, you know, more specific, having a presentation, and, you know, recommendations for more specific studies, what those would look like, and how they might be better, and I would just suggest to consider that.

MS. CROWE: Thanks, Stephen. That's a good point. Does anyone have something they would like to propose as a recommendation to the council today? Go ahead, Wilson.

DR. LANEY: I don't know about proposing that we formally make a comment, and, I mean, everything we've said is on the record, right, and so the council can certainly read the transcript and see what we discussed. I think the most significant thing that has come out during our discussion here about the revised Coral Amendment 10 is that the survey that was done was problematic, as Matt has pointed out.

It's not definitive, and, you know, it would be ideal, from my perspective, if, again, going back to the know before you go, if we had a reliable survey of the area and not just looking for any reemergence of deepwater coral reef species, but also one of my interests is whether or not, you know, the bottom itself, if it's been -- You know, being realistic, it gets disturbed anyway. I mean, storm events, and things like that, and I know it's pretty deep there, and so, you know, you may not have a whole lot of reconfiguration of the bottom due to wave action, or current action, but, if you remove repetitive trawling from any area, the bottom is going to undergo some sort of reversion back to what it was before trawling was initiated.

I would be interested in knowing, you know, has any sort of revision occurred, you know, of the habitat, and has it restructured itself, from a sediment standpoint, so that those little ridges and swirls might reestablish themselves, and, of course, where I'm coming from is -- I know that we don't have the information, but, you know, if you have to rate the habitat quality of the area, with and without bottom-tending gear, you know, generally speaking, I think most of us would think, well, it's probably going to be better quality habitat if there isn't repetitive trawling occurring on top of the bottom.

On the other hand, I know there's literature out there that says, well, you know, the benthic macroinvertebrates that are there -- Some of them anyway may benefit from sediment disturbance, and so that argument is still going on, and it's like the production versus attraction argument for artificial reefs. We have the -- You know, is some degree of bottom disturbance in soft sediment beneficial, or is it detrimental, you know, and so those are the sorts of questions that I would ultimately like to see get answered, but the answers to those questions are probably way off in the future somewhere.

Again, I mean, I think, for me, the only major point of concern that still exists is that the survey that was done, which it's wonderful that NMFS was able to get resources around there and do it, but it didn't yield highly -- It didn't yield results that we have a high degree of confidence in, but, again, that's captured in the record of our meeting, and I don't know that we -- I mean, the council

is going to know that, and they're going to hear the same thing this afternoon, or the shrimp -- The Joint Shrimp and Deepwater Shrimp AP will hear that this afternoon, and so they're going to hear the same thing we did. Again, the Coral AP also is privy to all this information, and, if they decide they want to weigh-in, either as a Coral AP or as individual members, they can certainly do that.

MS. HOWINGTON: This discussion will be -- Like I'm taking notes right now that will be a part of the Habitat AP meeting summary report, and Stacie is going to be the one who is presenting that in June, and so we will still have this discussion, and we don't have to make an official recommendation to be able to communicate the concerns with the survey and the -- I just wrote down, you know, that prefer having a reliable survey, or not -- I will probably tweak it, but more data on what this habitat looks like, if there's any known restructuring, and all of that will be in our notes, and so that's going to go to the council.

MS. CROWE: Matt, I saw you hand your hand up, and did you have a response to Wilson?

DR. JOHNSON: No, and I was just going to, you know, sort of remind everybody of the way these reefs develop, and, you know, typically a little hard bottom will pop up, in one point or another, and it gets colonized, and then, over the millennia, the coral breaks apart, falls down, and creates a larger and larger base, and eventually we get it, and so, I mean, we're talking about recovering a thousand-year reef over a decade, and so any -- So, you know, even, you know, one event could set back any sort of advances we've seen in the area by hundreds of years.

MS. CROWE: Paula.

MS. KEENER: Thank you for that, Matt. I truly understand the need for balance, balanced decisions about multiple uses, co-uses, in our decision-making, and I want to reiterate that these structures are thousands of years old, and this particular series is -- I believe it's been determined that it is the largest almost contiguous area of deepwater reefs in the world that's been documented.

It's not just the corals, and the corals provide structure for a lot of deepwater commercially-important species, like yellowedge grouper, some of the snappers, and I don't know how many of you have seen these structures underwater, but I have had the amazing opportunity to see what they look like, and it's not anything like what most people think of as coral, like in the Keys or soft coral, and these are magnificent structures that have -- That are home to not only the coral, but many other species, and, again, I will say that I certainly understand the need for looking at multiple uses of the ocean, and I think that the council, and this AP, and not just the Coral AP, because the corals are habitat, and so I think, in combination with the Habitat AP, should really consider what advancing Coral Amendment 10 means and what modifications need to be made to it to show that we are responsible with management of a very significant resource. Thanks.

MS. CROWE: Thank you, Paula. Are there any other comments? Go ahead, Stephen.

MR. MORRISON: Kathleen, this is a question in terms of the report that you're putting together. Will that be circulated to us to look at and weigh-in kind of on what might be elevated to the top, and bolded, for reporting to the council in June? Like will you circulate the talking points, basically, so that we can --

MS. HOWINGTON: Normally, it is not, and that's kind of the reason why I've been pulling and I've been showing you guys that here's what I'm bolding, and like the notes -- I'm not going to show you my notes. Half of this is misspelled. No thank you. Typically, in previous Habitat APs, Roger would take his notes, and he would then just send it to the chair and the vice chair, and they would help with edits, and then we move it forward.

Now, we do just have the habitat blueprint, and it did just get restructured, and I'm looking behind me to see if I'm giving permission for things that I'm allowed to give permission for, and, I mean, if that's how the panel wants to do it, it does mean that the report needs to be done in a timely manner, and I'm going to be giving you guys due dates, and I'm going to expect you guys to respond by those dates, and, if you're not, you're cut off, because I've got a briefing book due in June, or in May for June. That does put a little bit of stress, but, if you all want to, I can -- I will pretty it up, and I will send it to the chairs, or I will send it to the group, and then I will send it to the chairs, but it will be -- I will give you a deadline of you have a week.

MR. MORRISON: I think that's perfectly reasonable.

MS. HOWINGTON: Okay. The AP action, we are now editing it with the panel. Go ahead, Wilson.

DR. LANEY: Well, I was just going to ask who would be giving the AP report to the council, and Stacie is going to be there to do it? Okay.

MS. CROWE: So, in the past, and I've done it once, and Paul did it once in my absence, and it's essentially a PowerPoint presentation summarizing what we discussed in these few days that gets presented to the council, and so just so you're aware of --

DR. LANEY: So while it's not -- I mean, it's not formal transmission of AP concerns, you know, in response to a council request, they will see what we discussed, and they will see the concerns that were raised during the discussion about Coral Amendment 10, and anything else we talked about, right?

MR. MORRISON: Just a brief response to that, because I see a couple of options. One, we could just do nothing, and, two, we could try to make an actual recommendation request that the council provide us a mandate to do some more talking and a formal recommendation, or we can maybe abbreviate -- Take a look at what is going to be presented to the council and just make sure that any of us who feel strongly have the chance to emphasize a point, or, you know, word it a particular way, within an appropriate deadline, and timely, and, based on how strongly you feel, you may or may not meet that deadline.

I think that the opportunity for that might be a good way to balance sort of the between do nothing and maybe end up doing nothing because the council would say, no, AP, you already weighed-in on this, and it might just be a chance for everybody to weigh-in a little bit more, and, in the end, we are a recommending body to a consultative body, and so we're not -- You know, we have to take that into consideration, too.

MS. DEATON: I just want to add that you've got two council members here that have listened and heard what you've had to say, and so don't forget that, too.

MR. MORRISON: Thank you.

MS. HOWINGTON: Trish is our committee chair, the Habitat Committee chair, and Laurilee is actually our committee vice chair, and so we've got both of them here, which is not usual, and so I appreciate you all being here. So are we good moving forward with I will be sending this out to the panel for edits, no formal recommendations, but just a summary of the discussion and the concerns that have been raised? I am seeing heads nodding. Cool.

MS. CROWE: Okay, and so I think we're going to go ahead and go back to your presentation.

MS. HOWINGTON: Now can I talk about the habitat blueprint?

MS. CROWE: Yes.

MS. HOWINGTON: Okay. I did send around to the group the habitat blueprint. Now, the blueprint was meant to be a here is the new name of our advisory panel, and here is the new structure for our membership, and here is how we do policies, and here's how we make comments on EFH consults, and so it is a very good resource.

It is also basically a little bit of a to-do list of here are our goals for the next couple of years, and so I'm going to be going over not just some goals that we have met, which is nice, but then also some things that we need to discuss, as an advisory panel, on how we want to move forward, and so, with that, the first thing I did want to make certain is that the two goals that our habitat program are supposed to do, and this is, again, highlighted in the blueprint, and Goal Number 1 is to comply with the habitat mandates of MSE and its amendments, and Goal 2 is to provide information to support council communication on habitat issues.

If you want to look into like the sub-bullet points of these goals, or how we're meant to meet them, that is in the habitat blueprint that I just sent you, and so feel free to review that, if you would like, but those are our advisory panel goals.

One of the first things that we needed to do was update the website, and so, like Stacie said, the South Atlantic Fishery Management Council website was updated a couple of years ago, but the habitat program website was very complicated. I have mentioned this prior to this meeting, or during this meeting, but Roger Pugliese had this idea of having these live webpages that would be constantly updated, and so it wasn't just a habitat program webpage, but it was also multiple other pages that were meant to constantly be updated.

When I took the job, one of my first jobs was just to kind of update the wording and bring our webpage into a little bit more of a modern era to match the new website, and so, if you want to access the webpage, you can go to safmc.net, and then click on "Habitat and Ecosystem" on the left-hand side.

All of this has updated wording, and we have our User Guide, which we've discussed is how we define EFH in the South Atlantic. We have a click to managed areas, and this is how you actually can go and look at like shrimp gear restrictions, or, actually, here, and I will just click on it. There's marine protected areas, special management zones, our deepwater coral habitat areas of particular

concern that we've been discussing all morning, and so that's linked over here, as well as our EFH Mapper, which is right here, and you can actually visualize what the EFH is meant to look like and what the EFH habitat areas of particular concern are meant to look like.

I do have, on my to-do list, to update that, as well as trying to integrate it onto on our webpage, and so that's next steps, but that is a pretty large next step, because those are not small polygons, and so give me a little bit of time, but we also have a description of EFH, and we have links to our habitat-based fishery management plans, the Coral FMP, as well Sargassum FMP, and then we have all of our EFH policy statements, as well as the year that they were approved.

For example, the SAV policy was revised in 2014, and maybe we should look at that. Just a thought, but, either way, it gives you a small little description of what each policy does, as well as then their revision year, and so that's very helpful, and then we have a drop-down for habitat-related amendments. If you want to look at some kind of coral habitat amendment, you can go to the Comprehensive EFH Amendment for our EFH designations, or additional EFH HAPC designations, and you've got CEBA-1 and CEBA-2, and they have little descriptions on what each one of these amendments does.

I can't take full credit, and of course Myra just left, but, Myra, when she was developing the blueprint, which was prior to me taking this position, actually built this table, and so, if this table ends up being super helpful to someone, thank her, because she's the one who put all the work into it.

Then, finally other habitat documents, and so these have been referenced, and I think Pace actually referenced these. They were not available on the previous website, and so one of the big things that I've been doing is gathering these documents up of the habitat plan from 1998, FEP-1, and then FEP-2. Now, like I said, FEP-2 was a series of live-updating webpages, and, ultimately, that didn't end up going according to plan, and so I did my best to reflect, in this document, what the webpages would have included.

We all probably need to thank the wayback machine. If you ever need to go and figure out where a historical website is, waybackmachine.com, and it actually has snapshots of our old websites. Once it's on the internet, it never goes away, and so I was able to kind of delve in there, look at our old webpages, what information is on there, grab those links, grab that language. Any PDFs that were linked, that were missing, I was able to find and compile it into this 403-page document. This is now our FEP-2. It is going to stay there, and it is going to be static, and I'm sorry that I can't do a live, constantly-updating seven different webpages. I apologize.

If you want to go look at any of the decisions for FEP-2, you can. This is our most recent document, and it has a little bit of a description of everything that happened, the compilation, just a little bit of a history, as well as then the table of contents, defining our artificial reef, all the policies that were defined in here, our list of species, and not just managed species, actually, but other species as well, and then I did go through, without you all's permission, and I hope this is okay, and update all the weblinks that were on our old webpages, because they were all broken. Those have been changed from the previous language, and they are up-to-date, as of today. No promises for tomorrow, but today they are.

If you want to go look at those, that exists, and we have also updated our language for our advisory panel, and our description, based on the new blueprint, and so, if you want to look at that, About the Council, then Advisory Panels, and then Habitat and Ecosystem. This is our new language describing us, as well as a list of our advisory panel members, and so that's all the stuff that has happened right now, in regard to the website.

Like I said, right now, on my to-do list, I have integrating those EFH maps, trying to make it actually be on our webpage, instead of an external link, and I also have, on our to-do list, adding a link to the EwE project, or maybe there's an ecosystem page that needs to exist, and that can be separate from the habitat and ecosystem, or integrated at the bottom, and we're working on all of these. That is just ideas.

I would also like to request that, and we don't have to do this right now, because it would be super interruptive, but I would like to request a group photo for that advisory panel page, potentially, and also because I completely admit that I am bad at keeping faces to names, and so I can have little notecards to memorize, but I would like to request -- If we could do that at the end of the meeting, that would be very kind to me.

Do we have any suggestions? Like I said, this is a work in progress. We are getting there, but any suggestions for things that we should add in, things that you would find of interest to be on this webpage?

MS. CROWE: I see Wilson's hand up.

DR. LANEY: So, first of all, Kathleen, thanks for the amazing job that you have done using the wayback machine, and every other resource at your disposal, to reconstruct FEP documents and get that 1998 habitat plan accessible, and that's tremendous, and, as an information junkie permanently, I really appreciate it.

The only other thing that I think I had asked you about was the information that we had compiled on all those species that I know has been maintained on the Florida Conservation Commission website, and, if my memory serves, when you and I had that conversation, you had indicated that it was somewhat -- The information was somewhat dated, and it hadn't been updated, but it was still kind of useful, as an archive of what we knew up to the point where we ceased to update it, and so is there any possibility all that you could, you know, pull that from the wayback machine as well and put it someplace where we would have access to it?

MS. HOWINGTON: So what Wilson is referring to is the Ecospecies project that did exist, and it has not been updated in some time, and so it is very out-of-date. I believe, and correct me if I'm wrong, because, again, this was prior to my time, but this section right here, the managed species life history summaries, that is part of FEP 2, was the starting point for that ecosystem database, and so all of the writing out, all of that language, is in FEP 2 right now.

It's not in the Ecospecies database, where it's very searchable, but, like I said, that database had not been -- It was created, and it was not updated ever again, and so we determined, when we were kind of analyzing what tools we had -- It would be a huge lift for us to keep that up-to-date constantly, and it would be a huge lift to just keep that live, and so we decided to kind of just let it exist as these written documents. You can go in, and the table of contents that I built is linkable,

and so, if you just go the table of contents, anything on here that looks interesting, you can click on it, and it just jumps straight to it.

So golden crab, and you can just click on it, and it gives you a general life history summary, and, like I said, this is going to be 2018 data, and so, if you want something more up-to-date, or, if you feel like this is out-of-date, I apologize, but this is as of 2018 up-to-date. Use at your own risk.

DR. LANEY: The other thing that I would note that -- In the interim, since the 1998 habitat plan, there have been other online databases about fish that have materialized, and so probably everybody is aware of FishBase, which is one good source of information, and there may be others that I'm not aware of, but there are online resources that we can tap into to get information that we may need about a given species, and so maybe that's sufficient, you know, but it was nice to have something that was South-Atlantic-Council-oriented that did address a lot of information about a lot of species, and so it's good to know that it's still there in those documents, and we can still access it, even if it isn't totally up-to-date.

MS. HOWINGTON: Just as a warning for that habitat plan, that was such a big PDF that the HEP created that my web person had a difficult time putting it on here, and so, before you click on it, just go ahead and make certain that Adobe is up-to-date.

DR. LANEY: I would note, if you are interested in what would be EFH for diadromous species, you can go look at that 1998 habitat plan, and you can find that information in there.

MR. RUNDE: Just a quick question, and I noticed that, for some of the APs on the membership list, there's an affiliation, and I'm wondering what the rationale was for not having affiliations listed for the people on this AP.

MS. HOWINGTON: Do you want me to add them?

MR. RUNDE: I'm not sure that I have an opinion, but I just --

MS. HOWINGTON: We updated this last week, and so, any edits you want to give us, go for it.

MR. RUNDE: I don't know, and what do folks think about that?

DR. LANEY: I don't have any problem with having my affiliation or contact information listed, if that -- You know, the ASMFC does that, I think, for all of their technical committees, and so, if nobody else has any objections, I wouldn't have any objections.

MS. HOWINGTON: I'm going to stop you at contact information, because that -- I do not feel comfortable putting your email on this, but affiliation I feel comfortable with. Somebody can Google and find you on their own.

MR. KATHEY: I think affiliation would be helpful. It would be helpful for me, just kind of as a new member of the advisory panel, to just kind of know where people are coming from and what their backgrounds and perspectives are.

MS. CROWE: Any other comments on providing affiliation on the webpage?

MR. RUNDE: I just clicked through a couple of them and, so, for example, the Law Enforcement AP has affiliations, beyond -- Like Snapper Grouper says commercial, rec, charter, what have you, but I'm just looking at the Law Enforcement, and Georgia DNR, NOAA, recreational.

MS. HOWINGTON: It's not a problem. We can add it in. This panel seems to feel okay about that, and so yes. All right. Any other feedback in regard to either of these webpages, before we move on?

MS. CROWE: Thank you also to Myra for that table. She was out of the room when Kathleen gave her a shoutout.

MS. HOWINGTON: Yes, and so I gave you credit for this, Myra, that table, because that was prior to my time, and so thank you. All right, and so then the next thing we need to discuss as an AP is our policies, and so we've already kind of had the discussion of any other policies we need to create, and we've already formed some of those recommendations to send to the council. Ultimately, it's up to them if they want us to spend that time on that or not, but then another thing that I wanted to discuss, going back to the 2014 submerged aquatic vegetation, is do we want to try and make a schedule for looking at these policies?

Like at what time do we start saying, okay, this policy is out-of-date, and we need to look at it, and we need to send a request to the council, or just look at it as an AP, and let's discuss that, hey, this policy looks a little bit out-of-date, and I noticed these things were out-of-date, and let's submit a council, to let them know, or a recommendation to the council that we should tackle them, and what are you all's thoughts on those timings and procedures?

MS. CROWE: Brendan and then Wilson.

MR. RUNDE: Thanks. My gut feeling is that it depends on the policy, and, instead of having a rigid timeline on when a policy, or all policies, should be updated, maybe there should be a timeline on a review of the policy, with respect to whether we feel like it needs to be updated, and so I don't know if every five years is something that we -- Like let's review this policy, briefly, make it an agenda item or something, and, if we feel like it doesn't need to be updated, we keep moving.

MS. CROWE: I am going to jump in on that comment and just -- We spoke about it yesterday, with the alterations to flows, and we've had several topics come up that are related to that, and I think we mentioned that it's possibly time to update that one, and so I agree with you. Like, as items come up that we need to address, then maybe it's time to take a look back at the policy and see if it needs to be updated.

MR. KATHEY: I'm wondering if, as kind of a precursor, you could take a -- Like, you know, if it's been five years, and we haven't done anything, you take a look at it. If you see something, then you talk to the chair, and we agendize it, and, that way, we don't need to actually agendize it and then look at it. You know, we have a little bit of a preview, and if you see that, well, this has changed, and we've got this new information on this, and just talk to the chair about it, and we can get it put on the schedule.

MS. CROWE: I think Wilson had his hand up before I jumped in.

DR. LANEY: I was just going to say that, at ASMFC, for our habitat management series documents, you know, we typically start talking about the possibility of need a revision once they're at least a decade old, you know, because of the -- Hopefully most of the things that we have written policies for are things of continuing interest, and there is always people doing new research on them, and so, at the very least, it's beneficial to look at the literature and see if there's been any significant new developments in whatever field it is of use, and I don't know -- I like Scott's suggestion, and I don't know that we need to say, well, we're going to do it at five years, or at ten years, or at fifteen years, or even at twenty years, but, yes, just periodically taking a look.

Also, especially if we hear about any new significant research that would cause us to decide that we might want to revise any mitigation recommendations, and I think that would be one that would be significant enough that might warrant us to take a look and revise something.

MS. CROWE: Go ahead, Steven.

MR. MORRISON: I like Scott's idea, with just one small tweak. If you do take a look, and you're like there are no policies that need to be updated, just put that on the agenda, and just let us know that it happened, and so that might prompt an idea from us to do that, and, if you want to let us know ahead of time, so we can bring it to the meeting, instead of do it at the meeting and then decide, you know, on the last day that we want to take about something, that would be helpful.

Then the second is more of a question for the newer members of the AP, of kind of what is the process for updating a policy, and what that looks like, so that we could know. Just to Wilson's point, it seems like, at any -- I'm sure the people that have been on this for a while have just groaned, but, to Wilson's point, it sounds like we can, at any point -- If we think that there's a policy, or something that should go into a policy, we could bring that up under Other Business or whatever, but it would be nice to know kind of what the general process is.

MS. HOWINGTON: So if -- For example, the flow policy, that -- We have had that discussion, and we think that it should be revised. That is then going to go into a recommendation to send to the council, saying, hey, we think that we should spend our time to be able to update this policy. If the council says yes, then it gets added to the workplan, which all of you all are about to see in like two slides, and I will bring it to the next Habitat AP and ask, okay, the council agrees, and who wants to be on this working group, or I might send that out via email.

We then create a working group, with a working group lead, and that working group then gets together. I mean, Paula, how many times? Three or four times? Assigning writing responsibilities, or maybe there's a live Google doc, and you all are going in and just updating as needed, and then, within six months to a year, that policy then comes to the Habitat AP, like the energy one did at this meeting. We review any of the changes that are made. When the AP then approves those changes, that then goes back to the council, and they review the changes made, and they make the final, yes, this is meeting what we think -- You know, this is good, or this is not, and they can send it back. Otherwise, they can approve.

MR. MORRISON: On that question, I just feel like -- We were just talking about the effects of sediment plumes on coral habitats, and, if we thought that learning more about that would be useful to updating a policy, is that something that the working group decides, and then goes out and does,

or do we have to have the council's sort of input on the scope of that? Like, if I wanted to learn more about this, would I send it to you and say, hey, can we get a presentation at a meeting, or is it I can go talk to a scientist myself and then bring it back?

MS. HOWINGTON: I think that might be on a case-by-case basis, depending on how big of a lift it is. Like, if you're going to -- If you're just going to go talk a scientist that you know, doing a research -- Like going and finding different papers that would be applicable, I don't think that's a big deal. A literature search would be perfectly fine, and perfectly acceptable, and even reaching out to a scientist friend of yours is perfectly fine on the working group. I think, if it's going to be a bigger lift than that, where you're asking for a presentation, that wouldn't be something that the working group would be request. That would be something that we as an AP would request.

MR. MORRISON: Thank you.

MS. HOWINGTON: Wilson.

DR. LANEY: So, on the flow thing, just to make the point that multiple heads are better than one, Casey and I were talking about some of the documents that we knew existed in North Carolina, and she sent me one, by email, for the Cape Fear River, and that was one that I didn't even know about. The ones that I was thinking of are other ones that are all relative to flows within North Carolina, and so it's always good to have these group discussions about these policies and new information that have arisen, and so I think you're going to get a bunch of stuff from us in North Carolina that is very relevant to flows in rivers in North Carolina that would be of interest to the council, because they involve, you know, freshwater inputs to estuaries, which we've all recognized is an important habitat feature, even though we don't always necessarily know how to characterize them.

It turns out, based on my scan of the report that she sent, they've been very well characterized for the Cape Fear, as part of the Sustainable Rivers Program, and so that SRP now has two additional rivers in North Carolina, the Roanoke, and the Neuse was just added last fall, and so we should be able to provide a lot of good information, and even begin to make progress back towards that vision that Roger and I had originally when we established that policy in the first place.

MS. HOWINGTON: All right, and so it sounds like we're good not assigning a specific timeline, but staff can review and see if something comes up, or, if you all hear of something, and you feel like it should be added into a policy, bring that to the AP. You can bring it in Other Business or request, you know, please add this to the workplan, and then we can move in the process. Sound good? Everyone good with that. All right.

Then here's the second question I had, and this is actually based on I am a member of the Council Coordination Committee's Habitat Working Group, and, when we met in January of this year in California, we actually all got to talking about how these policies are used, how they're written, and what they look like.

Now, it turns out that the Mid-Atlantic actually used our policies, and I believe it was the Mid-Atlantic, as kind of an example of how they do their policies, where it's smaller policies that are easy to look at, but other regions actually have larger policies, and they're separated out into -- They're actually combined, where it's non-fishing effects versus fishing effects. Are you all

interested, at all, in me looking into how that is built, or are we happy with these smaller policies that are a little bit more easily searchable? Brendan.

MR. RUNDE: If it ain't broke, don't fix it.

MS. HOWINGTON: Love it. I felt like I needed to bring it to the group.

MR. MEDDERS: I'm just curious, and what was their motivation for combining the policies, and did that allow them to kind of cross-reference different topics easier, or did they just want one document to reference?

MS. HOWINGTON: I think, and this is just based on conversations, and so, if anyone is online that is, you know, from the Northeast or the Pacific or anything, if I'm misquoting them, I apologize, but I think it was based on they just started it that way, of non-fishing effects and fishing effects policies, and then they built off of that, and then it just got bigger and bigger and bigger, I think, but we didn't discuss.

We didn't really get into like the logic of why, and we just kind of went into, oh, ours is different, because we were just all comparing to each other and trying to -- Again, going back to we took some of the Mid-Atlantic and Northeast language from the energy policy, trying to make our region, you know, unified, and so I think, right now, we actually are, on the Atlantic side, unified in how we're doing this, but I'm just letting you all know. It's an FYI.

Then the next thing is the User Guide. So, again, when I took over this position, one of the things that I had to kind of get myself -- God, I'm missing the word, and I had this practiced, but I had to review all of these documents, and understand them, and understand the purpose behind them, and so the EFH User Guide was initially written with the EFH Mapper in mind, and the reason why it's called the User Guide is it was meant to be a description of what's going on here in this mapper.

Now, one of the things that I have on my to-do list is to try and put this mapper somewhere on the webpage, maybe bring it up to date, and one of the things on our to-do list, in the next five-year review, is to change these -- Or maybe adjust these EFH maps, or tweak these EFH maps, to go from Level 1 to Level 2, and so, with those two things in mind, these documents -- The document User Guide, and these maps that the polygons have not been updated, like with the buttonwood clarification, and the polygon was not updated with that.

They've kind of become disjointed, where they are no longer necessarily matching each other. The EFH Mapper is very good for visualization, but it's not very good for like the details that we are adding into our verbal descriptions, and, ultimately, the verbal descriptions are the EFH that we have. The mapper is good to have, and it's nice to visualize, and it is not how we define EFH. The User Guide is.

Then my question to the group is this, and would be interested in potentially changing the title, because I feel like User Guide makes it a little bit confusing, and another question I have -- Well, we have a response to that, and so I'm just going to pause.

MS. WOLFE: Before you go on, I don't think we need to change the title, because think of the people who use this document. It is the people who are trying to digest the information within the

fishery habitat plan, the habitat plan and the update from 2009, and, when we do consultations, within the Habitat Conservation Division, this document is our bread-and-butter. We use this document in every single consultation, and we reference this document, the User Guide, and we say that, for further destination and information, please use the User Guide, and then, within the User Guide, it guides people to say, if you want even more information, you need to go to the habitat plan from 1998 and then the updated fishery plan from 2009. That's great. We like being able to use that, and I think changing the name from User Guide not only would have lots and lots of --

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

MS. WOLFE: That, and then all -- When we reference our consultations, and we had 700 that Pace had mentioned just from 2023, right, and so that's 700 times we have referenced this document in one year. If we go back to 2014, you know, that's thousands of consultations, and it is an awesome document. This is the only region that has that document, and so like having something that is a quick guide, to say these are all of the habitats under each fishery management plan -- If it ain't broke, don't fix. That's the hill I will die on.

MR. RUNDE: That was an original quote, but the way. I'm the first one to ever -- No one has ever said that before.

MR. KATHEY: My initial thought was what is this thing, and I don't work with this document very much, and what Jordan said is incredibly compelling, and so I would probably be definitely on that team. Maybe we think not that we change the title, but just is there a way to better explain this to people who might use it that aren't using it, and it just kind of seems like the -- You know, maybe just a description of what it does that's very simple, and Jordan may have some thoughts on that.

MS. WOLFE: So I think, if the initial purpose of the document was to supplement the maps, and now they've become independent, it's totally fine, I think, to add like a little paragraph to say, originally, this document was created to support these maps, which can be found at blah, blah, blah, and now we've realized that, because they've become independent products, you can use this as a supplement to this, but please use the information within this User Guide for the in-depth descriptions of the habitats to back up what you're looking up on these maps. As a side tangent, or a side note, I'm the GIS coordinator for our region for Habitat Conservation, and so, if you need help with maps, I am happy to offer up my --

MS. HOWINGTON: (The comment is not audible on the recording.)

MS. CROWE: Scott has a comment.

MR. KATHEY: I think the fact that the title is not EFH Mapper User Guide helps a lot, because there's no immediate expectation that this tied to a mapping program, and so we're fortunate in that respect. It's just a user guide to understand EFH, which I think works great.

MS. CROWE: Good point. Okay. Anything else? Casey and then Wilson.

MS. KNIGHT: I was just going to say that I support what Jordan is saying, and maybe even we can like leave ourselves some bread-crumbs there, saying like, you know, the goal is eventually to have these two things realigned, but, you know, in the meantime, while we're realigning those, to please defer to this as the main document, and the maps are supporting.

MS. WOLFE: Just kind of toot your own horn for a little bit, and so I saw it on the HQ EFH Mapper, and the HQ Mapper covers all regions, and so the West Coast and the Northeast and everything, and it's awful. I don't know if anybody has ever used that mapper, and it's not great. The load time is so slow, and it almost always crashes, and then you're not able to zoom into certain areas, because of the zoom availability.

I will say the mapper on the South Atlantic Council's website -- I have tried to get HQ to take notes from that, because it does not only split it by region, but it splits it by FMP, and that's very useful when we're trying to make specific EFH recommendations, and so, like within our consultations, we will reference to say this EFH is supported for snapper grouper under the fishery management plan, and so we try to guide people to that specific fishery management plan, so that, if people want to look at the other habitats that are designated within that, they can.

Under the mapper that supports for HQ for all the other regions, it does not do that, and it just has a complete list, and so you don't know all of the habitats that are listed let's say for shrimp, or for snapper grouper. Then you would have to go to the habitat plan, and then figure out, okay -- That's where that bread-and-butter, that User Guide, is just like chef's kiss, and so don't change it. Thank you.

DR. LANEY: Jordan touched on what I was going to ask, which is, if you really want to dig into the details, do we have links in here -- Well, I know we go to the 1998 habitat plan for the original EFH designations for all of the South Atlantic Council species. If we're interested in species that are managed by other councils, and their formal EFH descriptions -- I know all the early ones anywhere were in documents for individual species, and is there some place that we can find like links to all those original EFH descriptions and any subsequent updates of those?

MS. WOLFE: Do you mean for any of the councils?

DR. LANEY: For any of the east coast councils anyway. Like is there someplace I can go to find the original EFH description for spiny dogfish and then any updates to that original EFH document?

MS. WOLFE: So my understanding is that you would find it within the habitat plan, and then, if you were trying to go to a specific council's managed species, you would have to go to that council's website to see if they have any amendments to that, but, for the South Atlantic Council, you won't find amendments to a fishery management plan for let's say the Pacific Council, and so you would have to go to that council's specific website, or, you know, trail to find any updates. Is that what you're asking?

DR. LANEY: Well, the logical place, to me, where all these would be found would be on the HQ site, as you indicated, and you noted that the mapper on that HQ site is less than desirable, but you would think that they would at least possibly have a list of links to the EFH documents, and I know NMFS is pretty good about having caches of links that get us to the PDFs of lots of different

original documents, and is there any one site, that you're aware of, Jordan, where they archive, or pigeonhole, all of the original EFH designation documents?

MS. WOLFE: I mean, I can't speak to other councils, but, like for the HQ mapper, if you were to click on let's just say bluefish, and it provides a specific EFH designation, and you're like, okay, that's one EFH designation and what other EFH is designated within the bluefish fishery management plan, and you would have to go to the council's website, find the specific link for bluefish, and then see the whole list, versus the South Atlantic Council website, under our mapper, and, if you go -- It's broken out by fishery management plan, and so then it lists of all of the EFH, and then the EFH HAPC, under each fishery management plan.

If you wanted to turn off estuarine-emergent grasses, or vegetation, under the Shrimp Fishery Management Plan, you can do that, and so you would click on that little arrow to the left of the shrimp EFH. Those are all of the FMPs for shrimp EFH. Then, if you go to shrimp EFH/HAPC, those are the various HAPCs listed under the fishery management plan. The HQ mapper doesn't do that, and so then you have to go on a witch hunt, and you have to basically know -- You have to know, before you're going to the mapper, which EFH, or EFH HAPCs, are within each of those fishery management plans. That's not as intuitive as this is, and so that requires a bit more involvement.

DR. LANEY: Just as a follow-up comment, as a former regulatory review person for the Fish and Wildlife Service, it was very frustrating, if I knew that I was having to review a project in a certain location, and it was very frustrating not to be able to go to some NMFS website somewhere and push a button and see all the species that might have designated EFH in a particular location, and so, if that's something that could be rectified in the long run, that would be good.

One other quick question for you is, in looking at our list of South Atlantic species, so we don't currently list the species which occur in the South Atlantic region, but are -- That have lead by another council, and I'm thinking summer flounder, spiny dogfish, and those all have EFH, and they occur within the South Atlantic Council's jurisdiction, but the Mid-Atlantic, I guess, has the lead for spiny dogfish, and New England has the lead for summer flounder, I think, and so it might be useful, at some point, if a species occurs in the South Atlantic, but some other council has the lead for it, it might be useful to, you know, throw those on there, and it's just a thought.

MS. WOLFE: Do you want me to answer that? Okay. The original purpose of the User Guide was to supplement the maps, referencing the species that are managed within the council, within the South Atlantic Fishery Management Council, under our fishery management plans. Whether they coexist here or not, it doesn't matter, and it's they have to be listed within the fishery management plans as managed species, and so summer flounder, for example, that's Mid-Atlantic Council. If we wanted to put that up there, to show that the habitat range was within the South Atlantic Council's jurisdiction, that's different than the South Atlantic Council having coverage under our fishery management plan, which is what the map -- The User Guide is supposed to support this.

I don't necessarily agree with that, because that's where you would go to the Mid-Atlantic Council's mapper, and say their User Guide, if they had one, which they don't, but you would go to their mapper, and their User Guide, and say, okay, this is where you would reference that. That is where you would go to the HQ mapper, where they have all of the regions within one mapper,

and then it would crash on you, and you would find -- So I think keeping our managed species, and fishery management plans, and the EFH and the HAPCs that are within our region --

DR. LANEY: I get it.

MS. WOLFE: And we're staying in our lane too, and I think that's something else that is important. Let HQ do HQ things.

DR. LANEY: I get it, but the word "silo" comes to mind here, and so, you know, if you are a regulatory review person, working for the State of North Carolina, and you have a project in Pamlico Sound, and you want to know what has been designated as EFH for which species, it would be very nice for you to be able to hit one button and get all that information, as opposed to having to go to every different council that might manage all the species that occur in Pamlico Sound, and that's all I'm saying.

MS. WOLFE: That's the purpose of the HQ mapper. You go to the NMFS HQ mapper, and you say, all right, I'm looking for summer flounder, and it's going to list out the --

DR. LANEY: I know, but you already told us that the HQ mapper has some deficiencies in it.

MS. HOWINGTON: I have no control over what they do with their mapper, but you can look at it, and you have all of the different councils, and so New England and Mid-Atlantic, and you're going to be able to click on that, and you're then going to be able to look at habitat areas of particular concern, essential fish habitat, reference data, EFH areas protected from fishing. All of that exists, and I 100 percent agree with Jordan that we can't also have their managed species. This is the South Atlantic EFH Mapper, and so, for South-Atlantic-managed species, we're going to just have our maps, and, if you want to see other regions, you can go to this.

DR. LANEY: I get it, and I also agree that it's really an HQ responsibility to do that, and so I would leave it up to my state colleagues around the table, if they have a burr under their saddle about this issue, to, you know, take it up with HQ.

MS. WOLFE: I'm not saying like what you're saying is invalid, and, no, it's totally valid, and, hey, I want to know what species are here, and I want to know where they live, and who covers it, and that's not the purpose of our mapper. Whether that's a different effort, or someone else, and I think that's going to be a more inclusive effort, and whether HQ wants to take it on -- That's out of my paygrade, but I think, for the purposes of our mapper, we'll stay in our lane, and we'll use our User Guide, updated as necessary.

MS. HOWINGTON: Which then leads us to the next point that Jordan has mentioned a few times. We are the only region that has a user guide, and I am seeing the thanks that we have, and I just wanted to let all of you all know that every other council defines their EFH in amendments or FMPs only, and any change to those EFH definitions has to go through an amendment process.

When Roger created this User Guide as our go-to this is how the South Atlantic defines EFH, he kept it external to that process, and so, that way, we could make small tweaks to it, and not have to go through a full amendment process. My question, that I would like on the record, and I'm

calling out Jordan, and I was hoping that Pace would be here, but I'm calling you out, and we actually had a webinar about this with Pace, and so I think we're good to go.

I think that we are meeting EFH, and Magnuson-Stevens requirements, with this document being our go-to definition for EFH, and then, eventually, it does get put into amendments, whenever they request me to write Chapter 3 in the appendix, and all of those details do get put in, but are we good to go with this still being our document that doesn't go through that long process?

MS. WOLFE: From my discussions with Pace, yes, we're good. To add, because this was a clarification document, and it does not have to go through the amendment process, and like a public comment period, it does not need -- It does not necessarily need to meet EFH and Magnuson requirements, because it doesn't go through that process, and it's just a clarification document. It's a guide, and so, yes, we're good.

MS. HOWINGTON: I wanted that on the record, and I wanted to let all of you all know that the way we do it in the South Atlantic is not the way the other regions do it at all. I was really confused, when we started having this conversation, and I was like, yeah, we have the User Guide. What's that? Wait, hold up.

MS. WOLFE: I was just going to add, as like a little kudos to the council, to say, yes, this is the only region that has a document like this, and, like I said, we do reference it in very comment letter that we provide recommendations for, which, as Pace mentioned yesterday, was 700 just for 2023, and so we are constantly referencing this document, and having this type of resource for our region is very important, and valuable, and I would hope that other councils would maybe get onboard in synthesizing this information, to clarify it, because, yes, EFH and HAPCs is really complicated, and talking to people about it is -- It's not as intuitive as you would think, because you have multiple --

You all have the same designation under several FMPs, but trying to tell people that, and you're referencing documents that are hundreds of pages long, and you get -- You basically just go over people's heads, and they're like, okay, and so like having something that is concise, and easy, and a user's guide, to be able to like reference people to, and it's in simple, plain language, and so you can cover everybody from consultants to biologists to your grandma, and like that is a really important thing to have, is communicating it across a broad range of people, and so, yes, this is an awesome document, and we appreciate it.

MS. HOWINGTON: Love that. All right, and so then the next thing I wanted to bring up -- Now, we haven't completed this five-year review yet, and so this is more just a things that I would like the advisory panel to keep in mind. When we finish this five-year review, which will involve concluding the food web and connectivity policy updates, and then I will need to submit a letter saying this is what we have done for our EFH five-year review, and I have had conversations of HCD of is our five-year review good to go, and these are the things we've done, and we've done the buttonwood clarification, the tidal boundary subcommittee, and then now we have our food web and connectivity.

They are good with that being our five-year review. I will submit a letter after we finish the next step, and then we'll get a letter back on, you know, whether or not they're good at the end of it, but, then after that -- Right now, what we have for the to-do list for the next five-year review is to

identify higher-abundance locations for EFH clarification on each FMP, improving EFH tier structure, and that has been something that has been brought up during the council meeting.

It is currently on our workplan, and I honestly need to delete that question-mark, and I apologize, and so I'm just letting you know that that is one of our EFH five-year review goals, and we're going to need to start working on it next year, because that is not a small lift, and so heads-up. Really, if we have other long-term goals, or objectives, that you all want to bring up for the next five-year review, let me know, but, really, this was more of a this is the goal for the next five-year review, and it will be a big lift, and we're going to need to start working on it right away, FYI.

MS. CROWE: Wilson.

DR. LANEY: To that point, Kathleen, does that mean that one of the things that this AP would be doing would be looking to all of our partners who are conducting fishery-independent surveys and seeing where we can actually pull out quantitative abundance data within the habitats that we've already identified as EFH, and is that the general concept of what that task is going to entail?

MS. HOWINGTON: It could be that. Currently, my thought process was, in the spring of 2025, we would have a sit-down of how would we tackle this, and so that is a good suggestion that we can bring up. I would definitely suggest that we separate it out by FMP, and, so like Jordan said, we have all of our FMPs split up, and then we have our HAPCs split up, and I say we try and tackle maybe one of the smaller, you know, less-complicated FMPs, and then we go to our bigger like snapper grouper version later on, and try and come up with like a process for each one that we can do.

Focus on one FMP at a time, and maybe we do reach out and get abundance from different surveys, and maybe we just do a literature search, and I don't know all of the steps, and this is going to be a lift, but I do know that this is going to be a big lift. Whenever Myra moves, I'm terrified that she's going to show up. All right. Then she will say, no, that's incorrect.

I don't know what the next thing is going to be, and I just know that this is going to be brought up in the spring of 2025, and we can come up with a how-can-we-do-this, and so you have a year to think about it and come up with an, oh, this would be a good strategy, and then, again, I suggest we work on one of our smaller, less-complicated FMPs, and then open it up to the bigger ones after that, and we can just do one at a time.

MS. CROWE: So, as you're using the FMPs for something, be thinking about it as you're going through them. Wilson.

DR. LANEY: Well, one other thought that occurs to me, and it's good that we have a year to think about it, is that we do have an Ecopath with Ecosim, and I understand that Ecospace is going to be added to that at some point in time, and I think Luke MacEachran was working on that, and so just keep that in mind too, and that might prove to have some utility in trying to identify higher-abundance locations, to the extent that they have it ready a year from now, and I don't know -- Chip may know where the process of adding Ecospace to it is and what sort of timing that it might become available.

DR. COLLIER: We're working on it right now, and hopefully we're going to have an operational piece of it in the next few months, to be reviewed by the SSC in October, and so, right now, what they're focusing in on for the Ecospace is going to be black sea bass, and whether or not they're moving due to climate change. EwE is something that definitely needs to be -- It has to have a question associated with it. Otherwise, it's just a model running, and it doesn't really provide you much guidance, and so we're working on developing questions for it.

It is a bit complicated, thinking about how to do it properly, because, a lot of times, the modelers are very good at modeling EwE, but maybe not asking the management questions, and the managers don't really thoroughly understand what EwE can do, and so it does get a little muddled, trying to keep it on track, but I think this question about are moving, potentially due to climate change, and I think that is an interesting one, and it's also being addressed by other researchers, so we can kind of validate whether or not the EwE model is following what other projects are seeing.

DR. LANEY: A follow-up question then, and it's great to know that that's in progress. When Ecospace is added to it, would it be an appropriate question, and we would probably have to ask it by species, I guess, but could we ask the model, okay, where is the highest abundance of black sea bass, to use your example, and where is the highest abundance of black sea bass, within defined black sea bass EFH?

DR. COLLIER: I would think that it could be used to inform that, yes, and we are -- The newest version is not having the 200 species. It is a much reduced model. It is a model of intermediate complexity for ecosystems, and I think -- In some realms, they're called MICE models, just to make sure that it runs a little bit quicker, and avoiding some of the -- Especially when you're adding Ecospace in there, you have to avoid confidential data, and that definitely becomes an issue for some of our species, even some of our species that are lone FMP species. We are getting down to the point where the data, the commercial data, is confidential.

MR. RUNDE: Chip, is that black sea bass exercise in reference to, or because of, the recent drop in abundance of that species? I just wonder if it's -- I don't want to start a really long sidebar, but is it the tiger chasing its tail looking for fish that don't exist?

DR. COLLIER: No, and this -- Well, this was started before the stock assessment was completed. We started this maybe a year or two ago, and it was mainly in reference to fishermen saying that black sea bass were leaving Florida, and we just wanted to be able to see is that truly the case, and can we pick it up in some of these models that we're developing.

MS. HOWINGTON: All right, and so, like I said, you have a year to think about it, and so I expect a full outline of exactly how we're going to tackle this next spring. Thank you. I will also be coming up with ideas, as best I can, and so the step is reviewing the workplan. Nobody in this room, other than people who were at the December council meeting, have seen this before, and so don't worry, new people, and you're good to go. I did PDF it, but it's actually an Excel sheet, and so give me one moment to zoom-in.

The idea behind this is that this is helping us try and spread out workload, figure out where we want things to be, and so this was approved by the council in December of 2024, and any revisions to it we need to -- We are going to submit to the council, and they ultimately then approve the workplan. This is then what I build the agenda on for the next meeting.

Right now, this is spring of 2024, we -- I am working on the tools and partner evaluations, and I will bring that to you guys. That goes back to like the Ecospecies database of trying to determine who the audience is, is this worth maintaining, that kind of thing, and so that's a lot of behind-the-scenes work. The EFH review, I did add in food web policy, since that's the last step for our EFH five-year review. Our work is currently ongoing. We talked about it at this meeting. We're going to have to finish it in the next meeting, because our EFH five-year review is due in December, and so we have to get that done. If it's blue, it means we're finishing it at that meeting.

The website transition, I started work on that, and I've talked about it. I'm giving myself a year to try and finish up all the other things on the to-do list that I've already mentioned, and so I will continue to bring forth those updates on those.

The communications strategy, this goes back to what Stephen was talking about of like trying to come up with an outreach strategy, and I will be bringing that to you guys in the fall of 2024, and then hopefully we can try and develop who our audience is, what we want to have for an outreach strategy, and I can bring in the Outreach and Communications Advisory Panel input, bring it to them, ask them for some advice, and so I'm giving us a year-and-a-half to work on that. If we need to expand it, great.

Then implementing any 2024 EFH recommendations, technically, we've already started doing that, because I've already integrated two of the recommendations into the User Guide, but since, also, technically the EFH five-year review isn't complete, we're not going to start working on that until spring, and it will probably be instead of, you know, two years, we just finish it next spring, depending on the food web policy, but that's the plan for right now. Those are all the things that are listed out in the blueprint that we need to try and tackle.

The next thing is the council and AP requests, and so I want to ask the AP permission -- In the initial PDF that I sent out, it was called "loss of artificial reefs", and the reason why is because, when I was developing this policy in December, that was when I remembered, from the communication that I had with Laurilee, when she brought up the windfarms, and I couldn't remember that it was about windfarms, but I just remembered that it was about artificial reefs, and so I put it in the workplan like that, and do I have your permission to change the wording, since that is very misleading and confusing, to "windfarm decommissioning"? Okay. Thank you. We've got information on that, and we're going to do some follow-up and integrate stuff into the energy policy, and hopefully we finish that conversation in the spring.

The space program, right now, I have this scheduled for spring, of just discussing any information we get with the FOIA. If we do not get anything with the FOIA, this conversation instantly goes to the next AP, and it's just going to keep getting moved, and pushed back, until we get the information that we need to actually have the conversation, and so that's where that is.

The energy policy, inclusion of wind energy, I was hoping we would finish it with this one, but clearly we're not, and do I have permission, from the panel, to move that to finishing it during the fall 2024 meeting? Are we all good with that? Okay. So we're moving this over, and so this is no longer accurate.

The Indian River Lagoon discharge and flow policy, so we've had that discussion now, and we're going to recommend to the council that we revise the flow policy, and then, after that, we'll discuss it during the fall meeting, and we'll maybe finish it by spring. I might extend that and give us a year to discuss that. I'm seeing heads nodding, and so we're going to give ourselves some extra time on that.

Tide gate and living shoreline projects and impacts on habitat, that's going to be coming to us in the fall of 2024, and we're going to be having that discussion. I believe we also were adding thin-layer placement to that discussion, and I'm seeing heads nod. Okay. So this is getting a little bit longer, but that's okay.

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

MS. HOWINGTON: Beneficial use. That's right. That is the word that we're using, and so projects and impacts on habitat. There you go. Sackett versus EPA, I feel like we don't have a lot of recommendations going to the council, and I feel like we're kind of finished with that conversation, unless there is some kind of follow-up that occurs. You all did recommend that I, you know, reach out to some state people, look at the EFH, and, if there's any follow-up after that, then I will bring it to you guys, but, otherwise, I think we're good.

The workplan update, we're doing that every single time. We're going to review this, and we're going to, at the very end of the meeting, say, hey, this is what we're recommending, and this is what we want to add, and these are the changes we want to make, every single meeting. The annual report is just happening every spring, and so that's every other. Citizen science updates, I'm also making that every spring, and, when I say that, I mean Myra made it that, and so, Julia, are you cool with that? Cool.

Then EFH consultations, and so this is going to be something that I was going to ask Jordan, and do you feel like it is appropriate for you guys to give an update every six months, or do you think that it would be better just to do an annual update on consultations?

MS. WOLFE: (Ms. Wolfe's comment is not audible on the recording.)

MS. HOWINGTON: Okay, and so then I'm going to make that spring too, and that does lessen our fall numbers, which is nice. Okay. Then I will get rid of this, or, actually, that's pretty quick, and I can do that now. All right, and so we're going to do that every other, and that's good, and, then, like I said, identifying higher-abundance locations for EFH clarification, and we're going to start work on that, and do I have permission -- Right now, I just have it every single meeting, and I will probably bring it up next meeting too, just to try and, again, remind you guys, and so it will probably just be another FYI, or, hey, I've been brainstorming, and then we'll probably get the ball rolling. I see that happening in 2025.

AP MEMBER: Just a process question on that. What will that process look like? If we come up with a recommendation, based on whatever assessment we decide, does that got to go through other APs? How will implementing that information on abundance into the FMPs work?

MS. HOWINGTON: I mean, we would probably need to -- I'm looking behind, but I would probably want to reach out to the specific APs for the FMPs we're focusing on and ask them for feedback. Okay. I'm seeing a head nod, and Chip is coming. He's smarter than me.

DR. COLLIER: No, I'm not. One of the other processes, that was just talked about last week, was potentially the SSC creating more of an ecosystem workgroup within them, or a subpanel within the SSC, and so some of these quantitative methods might go to them for review, making sure that it's following the best methods used to identify potential essential fish habitat, and then probably coming to you all after that, and then it would go to the individual APs, to make sure that everybody is getting the information.

MR. RUNDE: A general question here, and where does energy, or offshore wind, fit into this overall -- I kind of feel like that's a recurring Habitat AP thing, and we had -- This week, we had two presentations that were mostly, I guess, focused on decommissioning, but there was also some sort of project updates in the region, and, at the previous meeting, this past fall, we had Brian sort of giving project updates on CVOW, Kitty Hawk, the BOEM project that Seth also talked about the day before yesterday, and so I see that as sort of -- Offshore wind, and offshore energy development in general, as something that this AP is often looking at, and that's, I'm guessing, not going to go away any time soon, and so is that something that should be on our agenda, in some capacity, at every meeting, whether it's the developer or BOEM or NOAA Fisheries or someone giving an update?

MS. HOWINGTON: Given the timeline of those projects, I wouldn't necessarily recommend it every meeting, just because it is relatively slower moving, but maybe every other?

MR. RUNDE: Okay, and, just to add on to that, I don't disagree with you, but I do want to point out that we have sort of been considering the CVOW project an honorary South Atlantic project, and, six months from now, there will be big updates on that, because they are -- A week from now, they're allowed to start building, and they're going to, and so, at our fall meeting, there will probably be fifty-plus foundations in the water at that time, and so I don't know if that needs to be on the agenda, but there is development that will be evolving in this region rapidly that isn't Kitty Hawk and isn't Carolina Long Bay. Thanks.

MS. HOWINGTON: I feel comfortable adding in a CVOW update, or a request for that, in our next meeting, since you said that there will be an update in the next six months, and then a more longer-term thought process -- So that will be specifically CVOW, and so then maybe we have an offshore energy development as a reoccurring Habitat AP -- It's not an activity, but --

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

MS. HOWINGTON: At a higher level? Okay.

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

MS. HOWINGTON: Okay, and so major offshore energy development, or projects.

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

MS. HOWINGTON: Okay. Then maybe we make that an every other meeting as well, like I said, and so CVOW would be happening in the fall, but then maybe we do -- My question would be -- So, again, this is how I build the agenda, and this is also how I build who I'm asking to present, and, if we're calling it major projects of offshore energy development -- Offshore energy, I've got Brian Hooker that I can instantly contact. "Major project" is a little bit more vague, and so I would then probably bring to you guys -- In the fall, say do you know of any major projects that you want to get an update on, and then request that from you guys, and then, the following six months later, you get an update.

MR. KATHEY: So it is a little vague to me too, and are we talking about infrastructure projects? Can we define it in a little bit more -- With more precision? Are some of these projects not involving infrastructure? I mean, we're talking about cables, and we're talking about wind energy, et cetera.

MS. CROWE: Well, I think, you know, in the case of Port Everglades, that's port development, and, I mean, I think it kind of --

MR. KATHEY: It's infrastructure, in a way, I guess.

MS. CROWE: If I'm understanding where you were going, possibly just projects that pop-up as we go along that have major impacts that it would be worth having an update to the AP.

MS. WOLFE: Yes, and like projects that we've been doing either like pre-consulting work on for years, and so like Port Miami, Port Everglades, Mark Clark, Kitty Hawk, CVOW, Carolina Long Bay, and all of those are port development, offshore wind energy, infrastructure, expressway, and so different federal entities that have to go through the Magnuson-Stevens Act process, and so federal highways go through the Army Corps, and so it's not going to be just one, and so that might be a question where it might be Pace, or me, or something else within Habitat Conservation that has to answer the question, but then like everybody is familiar with the major projects that we've been on like long-term.

MR. KATHEY: So maybe major-impact projects. I mean, that's what you're looking at, are projects that -- Not whether the project is major, but it's the impacts are major.

MS. HOWINGTON: Habitat impact.

MS. CROWE: Yes. Stephen.

MS. HOWINGTON: I will come up with a nicer way of saying that, but I get the gist. For now it works.

MR. MORRISON: I think there will be some sort of self-selection there. We're not going to go - - You know, if there's a big project in Kansas, even though it's major. On the process, in terms of the way it gets on our radar, you're saying that it would be -- Say, in the fall, you would then ask, at this meeting, is there anything that you're interested in, and then it would be the next meeting, which seems okay, but maybe is there a way to do that sort of beforehand, and so it's upcoming in the fall, with a deadline to make that -- I mean, I don't want to -- The answer can be no, very

simply, which is fine, but I just think, if it's coming up in the fall, and there's something going on right now, which Jordan might know about, maybe we could hear about it then.

MS. HOWINGTON: So the problem with that is I start planning meetings the day that our meeting ends, and so, for example, one of the conversations that we're going to have, in I think two slides, is the next meeting date. By Friday, I have submitted a meeting request, and I'm probably going to be sending a draft agenda to Stacie and Paul within a month, and then I start looking for presenters right away, and so, when I say like one meeting I will request, you know, do you have any major projects, that's because, the next week, I'm writing up the agenda and saying -- So that's as early as I can go.

MR. MORRISON: I think that's great, and I'm not saying that you need to circulate it to this whole group, but, maybe, as part of that agenda process, you could just ask Jordan if there's anything that you know of now that in the fall might be useful to hear about, and then do the same thing in --

MS. HOWINGTON: Okay.

MS. CROWE: I think, usually with some of the bigger projects, that have more impacts, there are pre-app meetings, months in advance, and so Jordan knows about it, and the state representatives know about it, depending on where it is, and so it can always just be brought to Kathleen's attention that way as well. Wilson.

DR. LANEY: To Scott's question about whether they're infrastructure, the one that comes to mind that is not related to infrastructure, and, Jordan, help me out here, but the -- I don't think there are any proposed at the moment, but, for oil and gas exploration, they were doing all that sub-bottom profiling, with very noisy gear, that was highly debated relative to impacts to marine mammals in particular, but also zooplankton, because we had some literature information that suggested that those things were killing zooplankton, and so there are non-infrastructure projects that could have a significant habitat impact as well, and so I think those would be of interest to this AP. Then I have another -- I want to jump back to --

MS. WOLFE: Can I add something real quick to that?

DR. LANEY: Yes.

MS. WOLFE: So it has to be a federal action that may adversely affect EFH, either an action they undertake or that they permit, which would require consultation, submitting an EFH assessment and require consultation for EFH. If it's not a federal action, we don't review it.

DR. LANEY: If I remember correctly, there was a federal nexus for that one, and so I know there was a whole lot of discussion and debate and controversy on that one.

MR. KATHEY: Quite often that comes up for MMPA, particularly when they're doing those types of surveys, and NMFS gets involved under MMPA and/or ESA.

DR. LANEY: Right, and so the other question that I was going to ask is another Chip question, and so, Chip, would it be appropriate for us to presume that, under the higher abundance locations

for EFH thing, that we could depend on the SSC sort of taking the lead on that and recommending methodology that could then be adopted by the individual APs?

DR. COLLIER: No, I don't think so. I would much rather them review a product than come up with ideas on how to do it, because it can vary, depending on the data source and the expertise of the person that's doing it. They might be better with different mechanisms, and so having the SSC review it I think would be the better approach, as opposed to them just providing guidance on how to do it.

DR. LANEY: Okay. The only reason I asked the question was because you had indicated that you thought they may form an ecosystem workgroup, and I thought that might be part of the charge to that workgroup.

DR. COLLIER: The charge would be reviewing any quantitative information coming through.

MS. HOWINGTON: Myra did want me to clarify, and I apologize for this, but, when I gave you the timeline on when the stuff gets developed, it's after the council approves this. Within a week, I'm developing the agenda, and, within a month, I'm sending out stuff to people. This is -- We send this recommendation to the council, and the council ultimately is the one who approves this working plan for us, and so I apologize for that. All right, and so we've already talked about policy statements -- Go ahead.

AP MEMBER: I wonder if you want to like send out an email, after the meeting, where you're planning that, to say here's a deadline that this is going to be submitted, and do you have any topics that you think should be added to it, and that kind of thing might be helpful.

MS. HOWINGTON: I mean, I can. I was, honestly, just going to ask you guys right now.

AP MEMBER: Well, I mean, I'm aware of a couple of projects that are just kind of finishing, and I thought about bringing it up here, and it's an Army Corps project for -- There's the deepening of the Charleston Harbor, and there's a mitigation reef that they set up, and the report just came out, but they're kind of holding onto it for a little bit, I think, and they're not quite ready for other people to distribute that on their behalf, but things like that may or may not be available for the next meeting.

MS. HOWINGTON: Right. Okay, and so I'm going to go back to this, and then, at the end, I have a talk about how we can add stuff in. All right, and so we've talked about the policy statements, and you all are okay with that being the same kind of more organic when we feel that a policy needs to be updated, we bring the recommendation to the council, and so we're not adding that as a timeline. Updating the User Guide, this I put in here as a note for myself, because I do need to ask you all's permission, and there are some links in there that are broken, and do I have permission to fix them? Thank you. All right. And some formatting issues. I'm going to make it a little prettier.

All right, and so then, long-term goals right now, and this is where we can add in -- I'm going to put short-term goals here, and we have long-term and short-term goals. One of the short-term goals is adding in edits to the energy policy, which we've already extended that, and so we don't need to have that listed here anymore. You have your Army Corps of Engineers projects for reefs,

and that will probably be added onto the agenda somewhere, once the report is released. Are there any other short-term things that you can think of, in the next year, that you think we should try and request or add to the workplan? The CVOW would be one of those, and we've already put that up here. Anything else?

MR. RUNDE: Kathleen, I was going to bring this up in the break, but since you asked on the record, and this isn't -- It's in progress, and so one is the South Atlantic Climate Vulnerability Assessment that we talked about sort of briefly yesterday, and then the other one is I have an analysis that I'm working on for the amount of seafloor that will be covered by offshore wind infrastructure, which directly relates to, of course, how much habitat it might create, and this dovetails nicely with the recently-completed analysis of artificial reef footprint in the South Atlantic and around the country, and, conveniently, my collaborator on the offshore wind footprint project happens to be the lead author of that artificial reef paper, who also happens to be my fiancée, and so we could potentially talk about that at the fall meeting. She's cracking the whip, and so I think the offshore wind footprint project will be well underway, or completed, by the time our meeting comes around in the fall.

MS. HOWINGTON: All right, and so then -- That then leads to my next question. The Army Corps of Engineers project, do you know when that report is coming out? It's under review right now, and so maybe fall of 2024? Fall of 2024 is getting full. Then the South Atlantic CVA, and do we know when that is coming out? A question-mark. Got it. I also have been hearing rumblings about an updated South Atlantic ecosystem report. If that does come out, or if I get a little bit more of a deadline on that one, I will add that to the short-term requests of things that we would like to see. Spanik.

MR. SPANIK: One more. Are you aware -- So a lot of the SMZs, the spawning special management zones, that are currently in place -- Most of them have a sunset date on them, and are any of those scheduled within the next five-year review that potentially could be discussed? We're doing some work with a private company, Will Heyman and LGL, and they've been doing some sampling to try and see if they are actually documenting spawning in those areas, and so that might be worth maybe getting in touch with him and seeing if they can present what they're showing to support that.

DR. COLLIER: So what we'll likely end up doing, for those spawning SMZs, is we have a special workgroup that is reviewing the information, and is going to develop recommendations on whether or not they should continue, or whether the regulations should change in any way, and so that could be moving the sites, making the sites larger, and so that group is reviewing all the information right now.

Hopefully we'll have something prepared and can be presented to a variety of advisory panels next spring, and so that's when our plan would be to bring just the overall recommendations to these groups, and maybe not the individual presentations on the data that's being collected, and I think it's going to be great, and what we would likely do with that information is probably have it as a seminar series. That way, a variety of APs can view it at once. Then, for the CVA, that has been presented here, I feel like, once or twice, and so is it an updated CVA, or is it -- What are you looking for with that?

MR. RUNDE: No new analyses, and the overall results are the same, and so it wouldn't -- I guess, if that's the case, it wouldn't be appropriate to present that, and I forgot that it was presented at the last meeting. Thanks, Chip.

MS. HOWINGTON: Perfect. Okay. So then, for long-term goals, we have our EFH review coming up in five years, and the rest of the list is actually things that we have developed as these would be really great if we could get these on the workplan, but, as you can see, we're a smidge bit busy, and so, until we can knock some of those things off, and we also have habitat production relationships and map using Ecopath and Ecosim, modeling species habitat use using SEFIS and AI, compiling habitat data with CVA, requesting a habitat assessment from NMFS, and looking into creating species fact sheets, and that was a Wilson wish list.

These are all things that could potentially occur on our working list, but they are pretty big lifts, and so it would require us to prioritize these, and it requires the council to prioritize these, and so, if you have any other long-term really big lifts that you think we should recommend to the council, let me know, and we'll throw it on here.

MS. WOLFE: I'm happy to offer to help with the GIS long-term.

MS. HOWINGTON: Okay. Thank you. I appreciate that very much.

MS. WOLFE: You and I can just figure out timeline stuff for that.

MS. HOWINGTON: Any other really big long-term wish lists?

DR. LANEY: Just a clarifying question as to whether modeling species habitat use using SEFIS and AI maybe contributes to identify higher abundance locations for EFH clarification in each FMP, and are those two related?

MS. HOWINGTON: I think those two could be related, and I am keeping my eye on the AI and habitat identification. Right now, most AI is being used for fish identification, but I have talked with a few people who are working with AI on how to do it, and so like that might be something that ends up happening external to us, and then we just can request kind of a, hey, you know, we have all this SEFIS video, and can we run this, but, for now, I'm just keeping an eye on it, and, if it becomes something that this AP really feels like we should prioritize, then we can.

MS. KEENER: Just a quick question. The look into creating species fact sheets, where does that come from?

MS. HOWINGTON: Wilson.

MS. KEENER: Okay.

DR. LANEY: That is something that we have done at ASMFC. The Habitat Committee members are actually assigned different species, and they are responsible for pretty much constantly reviewing those fact sheets, and then pointing out new literature that would be beneficial to incorporate in a fact-sheet revision, and so that's it. These are simple kinds of things, but they're very useful for the public, the stakeholders, to have, you know, a readily available -- Like a one-

page or two-page fact sheet that lays out the major live history requirements of each species, and so, again, it's something that is useful.

A lot of that information is already there in the 1998 plan, or FEP-2, which Kathleen has pulled from the wayback machine, and so it shouldn't be a huge lift, except for the fact that, you know, the South Atlantic Council has got a lot more species than some of the other councils do, and so one of the things that we might want to do is take a look and see where we might -- If somebody else has already done one, then, you know, we might be able to appropriate one, and certainly we ought to at least think about some sort of prioritization, maybe, and, again, I think it's a long-term goal, and I don't see it as something that we should make a real high priority, but it's just something that would be beneficial, and useful, in the long run.

MR. RUNDE: The South Atlantic CVA has species profiles, which is exactly what you're talking about, for seventy-one species of fish and invertebrates in the Southeast, and so that's the, I think, starting place, and those were assembled in 2019 and 2020, and so they're pretty up-to-date, and, even in the absence of assigning people to bring them into 2024, I think they could immediately be published somewhere on the website, and so we may be able to just get those over to Kathleen and have them put up there. The CVA has species profiles, and so it's kind of prebaked.

MS. HOWINGTON: Okay. Where am I putting it? I'm sorry. We were discussing moving on, and so somewhere here of CVA or next steps. The CVA has some -- I will look into it, and then the --

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

MS. HOWINGTON: Okay, and so like add a link where, is the question.

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

MS. HOWINGTON: Okay, but, again, where am I putting this link to direct people? That is my question.

MR. RUNDE: There is no website for the CVA, and so we'll get you the profiles.

DR. COLLIER: So, although this would be great for habitat and ecosystem, they're typically at a single species at a time, and maybe some of that climate vulnerability would fit into the ecosystem part of it, but maybe it would be a better fit for the science and SEDAR page, just providing some links for some of those background research documents.

DR. LANEY: That's a good point, and, as Brendan already stated, we only did seventy-one of them, and so there's more South Atlantic Council species, and I don't know, and we would have to cross-index to see which ones haven't been profiled, but --

MR. RUNDE: Seventy-one is a pretty good start, Wilson.

DR. LANEY: For sure.

MR. RUNDE: It's a lot of the big ones too, and so --

DR. LANEY: Yes, and there's a lot of them.

MS. HOWINGTON: So the good thing is that, if I can get that, and get it added to the science and SEDAR, then maybe we can remove this from the long-term list. It should be nice. Then, like I said, if you all have any other short-term or long-term goals that you want to bring to my attention, just let me know. The steps after this, I'm going to take this, and I'm going to make it pretty, because clearly it has been messed up, and I'm going to submit this during the June council meeting.

They will then approve, or sometimes they move things around, and this is not as high of a priority, and you all have a lot of things coming up in this fall meeting, and so they might suggest items to postpone, and then I will, of course -- I will start building the agenda, and start reaching out, and I will be keeping you all in the loop on that. All right. I promise you that we're almost there.

All right. Meeting dates and methods, and so I sent out a Google survey, and I had a lot of people answer, which was very nice, about what dates are good for meeting, and do you all like meeting virtual, versus in-person, just to kind of get the idea. Ever since COVID happened, there is a meeting frenzy, I feel like, and so I wanted to get everyone's opinion on that. This is not going to occur within the next year, because we have our EFH five-year review, and because, based on that workplan, our fall meeting is not going to be virtual, and it will be in-person, and it will most likely be in September or October, and so go ahead and put that in your mind that this is not happening for the next meeting, but, if the AP is interested, here were the outcomes.

The first question was please pick which months are best to meet, not preferred, but doable, and which months are bad to meet, and so, obviously, we're not meeting in December. Nobody wanted to meet then, but February -- You all like February, and so maybe that is a potential, but here's the problem. If we decide to move away from the April and October, which April and October are super busy, and so, personally, I would like that, but that's just my personal thing. Whatever you guys want to do is cool.

If we decide to move away from that, then we still need to have two meetings, based on how the AP is currently built, and we typically meet fall and spring, and so, if we meet in February, then we're meeting in August, which is not ideal, but clearly there's a lot of preferred but doable, and so then, with that in mind, I also asked you guys virtual versus in-person. Now, no one picked in-person is best, and only in-person meetings, no one picked virtual is best, and only virtual meetings, and I very much appreciate that.

We did have a lot of feedback that ultimately was virtual is good for short meetings. If it's longer than a day, you all want to meet in-person, which I am right there with that logic. If it's longer than a day, we should travel, and we should meet somewhere. We did have one suggestion for virtual and hybrid, like one virtual and one hybrid in the year, and in-person should be the norm was another option, but then, again, if it's less than half-a-day, which, right now, according to our workplan, we are never getting less than a day, but maybe in the future we could. Wishful thinking. If we ever make it to where we can have a meeting that is one day, I will make certain that we switch to virtual, I promise you.

I want to just open it up for discussion, and, again, this is not happening in the next meeting, and so it's not happening within the next six months, but, maybe for next year, does anyone have strong opinions about which month, and does anyone have strong opinions about I cannot meet in-person in August, because, again, February, and six months later is going to be in these summer months, and so please discuss, and then I will give you the dates for the next meeting, because that's kind of already -- We only have two weeks to pick.

MS. CROWE: Does anyone have any discussion on that? Stephen.

MR. MORRISON: I just have a question about it, and are these always in Charleston, when they're in-person, or do they --

MS. HOWINGTON: Yes. Because of admin and equipment needs, they are going to be in Charleston.

MR. MORRISON: Just given the nature of where we are, Charleston gets less pleasant in August than October. That's just a comment.

MS. CROWE: Noted. Casey.

MS. KNIGHT: I think that I agree that February works out well for a lot of us, but I think, for a lot of us, pretty much August through October is going to be a hard push regardless, and so, you know, if we can make one work, and make it a little easier on us -- I know that April especially is kind of -- Like we're gearing up for a lot of things, and so especially the end of April, and so even if March -- You know, I think that would be a little bit easier on us, and then, if we all have to suck it up for the fall, I think we're used to that anyway.

MS. CROWE: Brendan.

MR. RUNDE: Thank you. I think this changes yearly too, right, and, I mean, it's hard to say -- This September might be really bad for a bunch of people, but next September might be fine, and so is it too much of a hassle to -- If we decide that there's going to be an in-person meeting in the fall say, is it too much of a hassle to just sort of do it ad hoc and say -- Even like what you're about to do I suspect in the next slide and say here are a couple of options, and what works for the most people, and just kind of run it like that.

MS. HOWINGTON: So yes and no. When the Habitat Committee meets is typically scheduled - - Like we typically meet in June and December, or September, and, honestly, we meet every single council meeting, but, if we're going to be switching around when I'm bringing the AP report, that's a little bit different, because that's changing then the workload of the council, and so if we're -- It would be good if we could at least pick a quarter, where then I can say we are guaranteed to bring the AP report at these two meetings, and we just pick like -- If you want to just pick a three-month window, and we meet somewhere in there, then we can do that, but I would not necessarily say a six-month window is going to be doable.

AP MEMBER: One consideration, for everyone who works for the federal government, is September is the end of the fiscal year, and everybody has got a boatload of stuff to try to cram into that month, and Congress likes to put us on continuing resolutions for three to six months, in

which money is tied up, travel money is tied up, and that becomes problematic too, and, if you're too close to the end of September, because we're jumping years, and they've already put cuts in place for no travel, that type of thing, and so that's something to consider, if you're working around the September/October timeframe.

MS. WOLFE: We have end-of-year reviews at that time as well, and, for branch chiefs, that's like several weeks that they just have to be in constant meetings, and so being sympathetic to their workload too, and September might not be great.

AP MEMBER: I assume the end of the fiscal year for the states -- That you have similar things as well, and I know that's generally July, right?

MS. KNIGHT: Yes, and ours is usually the end of June, and I would just say -- I mean, to Brendan's point, I feel like at the state agency folks, and your federal agency folks, like have a pretty good handle on our year-to-year, knowing when we have those kind of feast-or-famine type of stuff, and, I mean, I would lean towards August, if I had to choose between August, September, or October, and I would also lean towards August.

MS. HOWINGTON: Late August, because of school, or early August, because of school? It depends on the school and the state.

MS. CROWE: Well, it depends on if you're moving college kids.

MS. HOWINGTON: And moving college kids, yes. My daycare is year-round. Okay, and so it sounds like maybe this is a we can think about it, and we can make a decision during the next meeting, because, again, the next meeting is not going to change. I already have two weeks kind of planned out. It does sound like maybe you all prefer March, or February, but my only issue with that is the council meeting, and when I'm going to be bringing the AP report, and when the briefing books are going to be due, and so I would need to figure out the logistics. March would definitely be really complicated. February, it would be the first week in February, would be when we would meet.

It also sounds like we have a few people who are good with August, and we have a few people who are really not good with August, as much as the weather isn't pretty, and is there anyone who 100 percent does not like August at all as an option? Okay. So, for now, and this is where I would love if all of you could pull out your calendars, the two weeks that we have available, that are not currently claimed by other advisory panels, because they've already scheduled theirs out, is the week of September 30 to October 4 or the week of October 28 to November 1. Those are the two weeks that we currently have available. Does anyone have any strong preferences one way or the other, recognizing full well that you're getting married at some point in time, right, Brendan?

MR. RUNDE: That's what I've been told. Yes, and the early one would be doable for me, and the late one wouldn't, but no one should schedule a meeting around me.

MS. HOWINGTON: All right, and so those two weeks. Do we have any preference one way or the other, is my first question, because I would like to submit this meeting request on Friday, pretty please.

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

AP MEMBER: I think September 30 to October 4 would almost the worst for federal employees.

MS. HOWINGTON: Okay.

MS. KNIGHT: A fun little flat fish has made that time of year really hard for us in North Carolina, and so, yes, and, I mean, we'll make it work, but I'll have a lot going on.

MR. THEPAUT: In the past several years, South Carolina has been hit by a hurricane from September 30 to October 4, and so I prefer the later date.

MS. HOWINGTON: Okay, and so the ayes have it, and I'm hearing we prefer these dates, and I will try -- I'm pretty certain that's also Halloween, and so I will try to -- I don't celebrate Halloween, and so that doesn't affect me, but I know it affects other people, and so I will try to make it maybe the Monday, Tuesday, Wednesday, and get everyone home in time for Halloween night. We will see if a hotel is available, and so I will put that as our priority, and, with that, I think that is actually the end of my presentation, so that, other than Other Business and public comment, I think we're good. Right, Stacie? Am I missing something?

MS. CROWE: No. From what I have, you are not, and so, at this time, is there any Other Business that anyone wants to bring up? Kathleen has something.

MS. HOWINGTON: Sorry, everyone. Okay, and so I forgot to mention this at the beginning, when we approved the agenda, and I apologize for that. I have been nominated as the chair for the SEAMAP Habitat Identification Working Group. This group is looking for a habitat ID specialist. Specifically, we have been charged with looking into survey habitat use, what habitats are they using, what species are they looking for to survey, and then how we could potentially increase their efficiency, with maybe changing location or that kind of thing.

Currently, I am working with Jonita, with ASMFC, and we are contacting all the longline surveys, and we're just focusing on longline surveys for now, with Georgia and North Carolina, and we're contacting people from SADLS, and we're contacting a cooperative research project that I was aware of that did longlining back in the day, and then, once we get that group of people together, we would love to have a habitat ID specialist to help us with this project.

It is the first time we've done it, and it's really -- Like we're kind of just starting out, and so that's all the information I can give you, and it will just meet via webinar, only on a quarterly basis. If anyone is interested, please just reach out to me, and feel free to go do research on SEAMAP working groups if you want, but I would love it if someone could, you know, volunteer today, but, if not, please email me if you are interested. Casey.

MS. KNIGHT: So, unbeknownst to Charlie, I have kind of voluntold him, through his boss, during this meeting, to join that SEAMAP committee, along with our SEAMAP biologist, Clare Pelletier, and so, I think between the two of them, at least for the North Carolina aspect of things, they'll be able to cover it very well.

MS. HOWINGTON: Charlie Deaton and Clare Pelletier have been voluntold.

MS. KNIGHT: No worries, and Zach approved it.

MS. HOWINGTON: Got it. Then the only other Other Business is, of course, if you have any historical photos, please go over and get them scanned with Julia.

MS. BYRD: Or if you know of anyone.

MS. HOWINGTON: Or if you know of anyone. Go give her all the contacts you can. That's all I have.

MS. CROWE: Any other business from any other council staff? Okay. Moving on, as I mentioned at the beginning, we open the floor also at the end of the meeting for public comment. I am aware of one public comment. Kathleen, do you have any others online?

MS. HOWINGTON: I will check the public comment form right now, just to double-check, but if you want to call up the one person, while I am looking at this and double-checking.

MS. CROWE: Laurilee, if you would like to come up.

MS. HOWINGTON: As of 12:35 p.m. on April 24, 2024, we have received zero public comments online.

MS. THOMPSON: Okay. I'm Laurilee Thompson, and I'm from Mims, Florida. I appreciate the opportunity to comment. I wanted to comment on -- Well, first of all, thank you very much for adding the Indian River Lagoon flow thing to your policy. We really, really appreciate that. I was just playing around with your habitat map, and the Indian River Lagoon shows up as EFH for multiple species that are on your lists, but, you know, as I went through the existing policy that was done in 2014, and I listened to the presentations, and the talking, and I really appreciated you guys letting Daniel come up and do that presentation, but, in my opinion, what's missing is a stormwater policy.

I say that because I grew up on the Indian River Lagoon, and I commercially fished it when I was in -- I started out when I was ten years old. I've been on the lagoon my entire life, and I have seen it go from a brilliant, crystal-clear, seagrass as far as you could see, and it was like a giant aquarium full of fish, you know, supporting hundreds of commercial fishing families, and it was the most productive estuary in the State of Florida, and there are no commercial fishermen that can make a living on it now, and it's pathetic what has happened.

I sit on the Citizen's Oversight Committee for the half-penny sales tax, and, as Daniel stated, Brevard County citizens voted to tax themselves to raise money to do infrastructure changes to help the lagoon, and, last Friday, I watched five presentations, by five different scientists, on seagrass restoration and oysters and clam restorations, and every one of those scientists stated that too much freshwater, through stormwater, is a problem.

Until we can address stormwater going into not only the Indian River Lagoon, but all of our nation's estuaries, we're fighting a losing battle, and, as more and more development comes to the coastal areas, you're going to be dealing with more and more stormwater going into a lagoon, and

so, you know, it's a difficult thing trying to teach people that, because they say, well, we're putting in baffle boxes, and, you know, we're taking all the nutrients out of the water, and, well, no. Too much freshwater going into a healthy estuary is a pollutant, and trying to convince people that just taking the nutrients out of the freshwater, but letting the freshwater go into the lagoon, is still a problem.

I hope that, as you're working on your policies for the protection and restoration of essential fish habitats from alterations to riverine, estuarine, and nearshore flows, that you will add stormwater to that, because that is an alteration. You know, an estuary is a mixture of water from the sea and from natural freshwater sources, and stormwater, ditches, overflowing stormwater ponds, those are not natural sources for stormwater.

Then that leads me to a comment on -- This could come up, you know, for you, is that the development, the out of control, outrageous development that is taking place at the Kennedy Space Center right now, and they are permitting individual projects, one at a time, and no one is looking at the cumulative impact of all of the projects together, and they are dumping -- You know, they're going to put their stormwater, and their treated industrial wastewater, and one example of that is air-conditioning water, and they're going to put that into the impoundments on the Merritt Island National Wildlife Refuge, which are a major nursery habitat for many commercially and recreationally-harvested finfish and crabs and shrimp, and those impounds cannot take a bunch of -- You know, millions, and billions, and possibly billions, of gallons of new freshwater going into the impoundments from the development at the space center.

I don't know what to do about it, and I complain a lot, and I go to a lot of meetings, and it's probably why I didn't get reappointed to be on the fish council again next time, but I will not shut up, but you guys can help. You know, the council can help. You're a federal agency that is supposed to be looking at these things, and so I'm telling you that stormwater going into the impoundments at the Merritt Island Wildlife Refuge is going to be a big problem. Thank you.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Laurilee. Two thoughts occur to me. One is I think this relates directly to our earlier discussion this week about Sackett and the impact that it could have on EFH, and so Laurilee brings up a wonderful point about stormwater. To the extent that stormwater was held, and slowly dispersed, in adjacent wetlands, and isolated wetlands, that may no longer be subject to the conservation provisions of the CWA, then that just exacerbates the problem that Laurilee just pointed out to us.

I think those two things are somewhat related, and I will go back to the fact that, you know, North Carolina is doing that study, and I don't know whether South Carolina, Georgia, or Florida have looked into what the Sackett decision means, in terms of jurisdiction, and we did have a little bit of discussion about that, but certainly, once North Carolina is finished with their study, that would be something we could look at, Laurilee, to see if there's a relationship between those two, and I definitely think you are 100 percent on target that, when we look into our flow policy, that we ought to add a stormwater, you know, section to that, and talk about mitigation.

That is something that the North Carolina Coastal Federation has been actively involved in, in working with communities to help regulate their stormwater inputs, and slow those down, and retain those and disperse them in such a manner that wouldn't be as harmful to the estuary.

Then, let's see, and I had a second thought. Relative to your point about Merritt Island National Wildlife Refuge receiving stormwater inputs into their impoundments, I would -- Or Tripp could actually maybe dig into that a little bit and see, but, if the refuge -- I would think that the refuge - - That one is a little different, because it's like an overlay refuge, which is on top of the space center, and so I don't know what the rules are there.

Normally, Laurilee, if somebody was proposing to put stormwater into refuge impoundments like that, they would have to have a special use permit, and the refuge -- The Fish and Wildlife Service would go through some sort of NEPA analytical process, and so I don't know whether you're aware of whether that's going on or not, and that's certainly a question that I would ask of the refuge manager, and just see what they're doing there, and it may be that -- I don't know the actual provisions under which the refuge overlay was placed on Kennedy Space Center, and so there may be something there in regulations that would preclude what Tripp and I would think would be the normal refuge review and analysis process there, but it's definitely something worth looking into.

MS. THOMPSON: They've been doing -- We've been responding to every NEPA thing that we can get our hands on, and find out about, but they're always coming back as a FONSI, finding of no significant impact, and it's like they're rubber-stamping them, and there is hope, at the Canaveral Space Force Station, because military installations are required to use low-impact development, but, when it comes to the NASA side of it, which is where SpaceX is and, you know, the new development, and that's not a military installation, and, therefore, they are not required to use low-impact development.

Just last year, SpaceX got approved to dump up to 3,000 gallons a day of treated industrial wastewater into a canal that goes directly into the Oyster Prong impoundment, and Oyster Prong used to have oysters, but it doesn't anymore, because of the waterways out at the space center -- They can't support oysters anymore, and that was the way that Mr. Musk does things. He does them one thing at a time, and he gets this permitted thing, and then he comes back, and then he wants another hundred acres, and he wants another permit to dump more stormwater, and he doesn't -- He did not apply as I'm going to have a huge installation at the space center.

He knows well enough, and probably he learned in Texas, you know, that you just do one thing at a time, and you get it permitted that way, and that's the way that all the development is going on out there, and I know -- You know, as a child, I remember going, you know, to get oysters in the river with my dad, in a little rowboat, and we would come back, and we would have big oyster roasts for the crew at the boat plant. Once they impounded the saltmarshes -- I mean, they impounded every inch of saltmarsh at the Kennedy Space Center, and that was probably the beginning of the end for the Indian River Lagoon.

In the 1990s, in a desperate attempt to try to keep the dusky seaside sparrow from going extinct, they reconnected the last impound where the sparrow had been seen, and they put culverts under the dike, and they reconnected it to the river, and the cattails, and the Carolina willows, slowly disappeared, and, you know, saltmarsh grasses, and mangroves started growing, and they said, oh, well, this might be a good idea, and so they have reconnected most of the impounds, but we're

going to -- If they allow the development at the space center to dump all their stormwater, and treated industrial wastewater, and the freshwater that they use for the sound suppression activity, when they launch a rocket, and all of that goes into the impoundments.

We're going to erase two decades of improvement that happened when they reconnected the impounds to the river, and we're just going to wipe that out, and I don't think it's -- I don't think it's right that they should be allowed to get away with doing that. Yes, ma'am.

MS. WOLFE: From my records, there are two proposed mitigation banks at the Kennedy Space Center, which are looking to restore estuarine and freshwater wetlands there and remove those tidal impoundments, and those two banks have been pending for about four or five years now, and so one of them is the Kennedy Space Center Mitigation Bank, and the other is the Pine Island Estuarine Mitigation Bank, and so those would be Corps permitted projects, and so, if there's public comment for those mitigation banks through the Corps, that would be another avenue to be able to participate in, and so, if I hear any further development, I will --

MS. THOMPSON: Yes, that would be good. Most of the mitigation, the wetlands mitigation, that takes place in Brevard County doesn't even happen in Brevard County. It takes place in Volusia County and East Orange County, and we don't even have a wetland mitigation bank in Brevard County, which is also deeply frustrating, but they've done some mitigation out on the space center, and they are trying to convert old orange groves back into some kind of wetland habitat, and it's a joke.

You know, trying to reconvert an old orange grove back into some kind of a marsh area is not going to make up for if they destroy the habitat inside those impoundments, when it comes to being nurseries for all of the little -- All of the finfish, the trout, the redfish, the mangrove snapper, and scamp, black sea bass, all of those fish utilize the Indian River and those impoundments, and they're also very -- They are major seagrass banks, because the impoundments are full of *Ruppia*, widgeon grass, and it's a prolific seeder, and, so when the water flows in and out of the impoundments, it's also carrying *Ruppia* seeds back out into the Indian River Lagoon.

Those impoundments are critical to maintain the baby steps that we've made in trying to restore the Indian River Lagoon, and I also forgot that your SAV policy -- I glanced through it a minute ago, and it was last updated also in 2014, and, if you read it, you would think that there's a pretty rosy picture, you know, for seagrass in Florida, and that's not the case. I mean, it is not just in the Indian River, and we're losing seagrass all over the state, and it's affecting fisheries, and it's affecting water quality, and Florida residents' quality of life, and it's going to eventually impact tourism, because it could -- When that happens, then maybe something will happen, but until -- And it doesn't impact Disney World, and that's the problem. It impacts the kayak tour operators, and the fishing guides, and the people that -- The small businesses that depend on the estuaries to make a living, but it's not impacting what's going on in Orlando.

Unless something happens at the theme parks, I don't have a lot of hope, but it is a problem, and it needs to be addressed, and I think that, somehow, NOAA needs to get more deeply involved in what is happening in the nation's estuaries, beyond just looking at somebody wanting to build a pier in front of their house. The stormwater, and wastewater treatment plant overflows, and septic tanks, have to be addressed.

MS. HOWINGTON: Thank you, Laurilee. I see no public comment online, and no hands are being raised. Does anyone else have public comment that is in the room? I think, as our way of adjourning, can we get a group photo, please? Can everyone just come line up? There are two tables right here, and nobody is behind Julia, and you're fine. I will crop you out. Everyone line up over here, tall people in the back, real quick for a photo, and then, are we adjourned, Stacie, as the chair?

MS. CROWE: After the photo, we will be adjourned, yes.

(Whereupon, the meeting adjourned on April 24, 2024.)

- - -

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Amanda Thomas
June 25, 2024

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April 22, 2024

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Water
Trip
Bottom

~~Matthew Kenworthy~~
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