SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT AND ECOSYSTEM ADVISORY PANEL

Doubletree by Hilton North Charleston Convention Center
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July 15-17, 2025

Transcript

Habitat and Ecosystem Advisory Panel

Stacie Crowe, Chair	Steve Miller
Paul Medders, Vice Chair	Erin Spencer
Charlie Deaton	Anne Deaton
Dr. Matthew Kenworthy	Dr. Matt Johnson
Gregg Bodnar	Scott Kathey
Dr. Brenden Runde	Laura Busch
Cameron Luck	Kevin Spanik
Benjamin Thepaut	Walter "Trip" Boltin
Paula Kenner	Dr. Wilson Laney
David Whitaker	Rua Mordecai

Council Members

Trish Murphey, Chair

Council Staff

Dr. Chip Collier	Suzanna Thomas
Kathleen Howington	

Attendees and Invited Participants

Lara Klibansky

Observers and Participants

Other observers and participants attached.

The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council convened at the Doubletree by Hilton North Charleston Convention Center in North Charleston, South Carolina on July 15, 2025, and was called to order by Ms. Stacie Crowe.

MS. CROWE: Good afternoon, everyone. Welcome to steamy Charleston for our first annual summer Habitat and Ecosystem Advisory Panel meeting. After a day in the field yesterday, I'm very glad to be sitting here in this nice dim, air-conditioned room. We have lots of good stuff to cover over the next couple of days. Let's get started by introducing ourselves, so we know who is here in the room with us, and as well as those online, and so I am Stacie Crowe. I'm with the South Carolina Department of Natural Resources here in Charleston, and I'll move to Kathleen.

MS. HOWINGTON: I'm Kathleen Howington. I am the Habitat and Ecosystem Scientist for the South Atlantic Fishery Management Council, and so I'm your staff lead.

MR. SPANIK: Kevin Spanik, South Carolina DNR.

DR. LANEY: Wilson Laney, North Carolina State, Department of Applied Ecology.

DR. KENWORTHY: Matt Kenworthy, Florida Fish and Wildlife Conservation.

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

MR. WHITAKER: David Whitaker, retired, South Carolina Department of Natural Resources.

MS. SPENCER: Erin Spencer, National Marine Sanctuary Foundation.

MR. LOCKE: Cameron Luck, North Carolina Division of Coastal Management.

DR. RUNDE: Brendan Runde, The Nature Conservancy.

MS. BUSCH: Laura Bush, U.S. Fleet Forces, Navy, Norfolk, Virginia.

MR. MEDDERS: Paul Medders, Georgia Department of Natural Resources.

MS. KEENER: Paula Keener, retired, NOAA and Marine Advisory Committee for South Carolina DNR.

MR. THEPAUT: Benjamin Thepaut, South Carolina Department of Environmental Services, Bureau of Coastal Management, Coastal Zone Consistency.

MS. CROWE: Thank you, and let's go ahead and have the folks online introduce themselves.

MS. HOWINGTON: Anne.

MS. DEATON: This is Anne Deaton. I'm with National Marine Fisheries Service, Habitat Conservation, SERO.

MS. HOWINGTON: Gregg.

MR. BODNAR: Good afternoon, everybody. Greg Bodnar, Division of Coastal Management out of North Carolina and the Major Permit Programs. We do the permitting on the site.

MS. HOWINGTON: Matthew.

MR. JOHNSON: This is Matthew Johnson, NOAA Fisheries, Habitat Ecology Branch.

MS. HOWINGTON: Rua.

MR. MORDECAI: Rua Mordecai, U.S. Fish and Wildlife Service, and I coordinate the Southeast Conservation Blueprint.

MS. HOWINGTON: Scott.

MR. KATHEY: This is Scott Kathey, with the Office of National Marine Sanctuaries, NOAA.

MS. HOWINGTON: Steve.

MR. MILLER: Steve Miller, with the St. Johns River Water Management District in northeast Florida.

MS. HOWINGTON: Trip. Try it now. Trip, try to self-unmute yourself on your end. That's all right. Well, thank you, Trip. Trip is U.S. Fish and Wildlife Service, Southeast Region Fisheries Program, and he is having some audio issues, and so he will be talking to us via chat during this meeting.

MS. CROWE: Okay. Thank you, everyone. It sounds like we have a great group, with a lot of representatives from each state, and so we always start off our meetings by obtaining approval for our agenda, and we do that by consensus, and so, with that, let's go ahead and approve the agenda. Wilson.

DR. LANEY: Just a reminder, Madam Chair, that we do have one item that I ask us to consider under Other Business, which is the Reef Keepers documentary that's in production.

MS. CROWE: Yes. Thank you. We have that on our list. Okay, and so agenda approval. Okay. No nays, and so the agenda is approved. Okay. Next, we go ahead and approve the minutes from our fall meeting, and that was our last meeting, October of 2024, and so do we have approval of the minutes from the last meeting? Everyone in approval say aye, or raise your hand. Good job. Yes. Okay, and that is approved.

We do open our meetings for public comment at the beginning of each meeting, and then again at the close of the meeting, and so, at this time, if anyone has a comment they would like to offer, you can go ahead and do that.

MS. HOWINGTON: Nothing online.

MS. CROWE: Nothing online? Okay, and no one else in the room, and so no public comment. We will go ahead then and move forward with some Habitat and Ecosystem Committee chair remarks from Trish.

MS. MURPHEY: Hi, everybody. Thanks. I just want to start out and just thank everybody for being here for this committee, or this panel, advisory panel, and taking the time out to participate. It's kind of cool that the meeting is in July, because it's -- July is NOAA Fisheries Habitat Month, and so that worked out, but I just wanted to let you guys know how much the council does appreciate your time and effort on this AP, especially -- This AP is pretty labor intensive, and you all do a lot of work here, and so I just want to express, you know, my appreciation for all the work that you do.

We've had quite a bit going on since your meeting in October. We had a Habitat Committee meeting, and a couple of joint Habitat and Shrimp Committee meetings, at the last few council meetings, and so I'll go ahead and just go over those. The Habitat Committee had met in March, at Jekyll Island, and we spent time reviewing a letter to the Southeast Regional Office about -- With your recommendations on the EFH five-year plan.

This letter provided a summary of recommendations that you all made on this plan, and those include, you know, the clarification of definitions of mangroves and buttonwood. Also, it provided the upstream boundary coordinates for your upper boundaries for EFH, and it also made recommendations to update the web policy, which I think you guys are actually going to be talking about today, right?

Yes, and so that letter was approved, and sent out, and the committee also approved your definition for living shorelines, if you remember that discussion, and so, also in March, the Habitat Committee met jointly with the Shrimp Committee, and this was to discuss Coral Amendment 11 and Shrimp Amendment 12.

You should probably remember that, during our September 2024 council meeting, which I think I shared with you at your October meeting, that it was decided to initiate those amendments for both shrimp and coral, to address allowing the rock shrimp fishery to operate in that area of habitat, coral habitat, of area of concern, while minimizing the impacts to the coral.

The committee reviewed the needs and purpose statements, as well as there are four alternatives that we talked about, one being a no action alternative, which is always the case in lists of alternatives. There are also three other alternatives, that were -- They basically differed in sizes of areas. Alternative 4, which was the most restrictive, and, when I say most restrictive, it was like half the distance, half the length, of the other two areas.

That amendment -- I'm sorry. That alternative was removed, because it just did not reflect the historical context of that area, of what had been fished in the past, and so that one was removed, and so staff went back and did analyses on the alternatives that we left in place.

During our council meeting in June, we met again jointly with Shrimp and Habitat, and reviewed the analysis of those alternatives, and selected a preferred alternative, and also discussed moving forward for public hearing and so staff had provided a new mapping study of that area, and that

was completed in April, on the R/V Nancy Foster, and it was using multi-beam bathymetry, and they found no coral pinnacles in that area that's been proposed.

Both committees selected the Preferred Alternative 2, which was the same alternative that was selected in Amendment 10, and we also are moving forward with public hearings. Those public hearings are scheduled in August. We'll have one online, and that will be on August 5, and we'll have one in-person, and that will be held in St. Augustine. Information for both those meetings will be on the website.

We did -- I just want to share also some comments, public comments, from that June council meeting. We had several commenters in favor. We had shrimpers that were in favor of the amendment, and in favor of the Preferred Alternative 2, and we also had coral ecologists and NGOs that supported Alternative 1, which was no action.

Just to share a very short summary of those comments, those in favor of no action, the ecologists and the NGOs, they talked about the concerns of damage that trawls can do to the coral. They talked about how slow it is that coral -- That it takes for coral to develop, like over thousands of years. They were also concerned about sedimentation, and the harmful impacts to coral because of that sedimentation, and, also, they were concerned about gear drifting into the coral pinnacles as it's being towed.

Shrimpers, on the other hand, supported Alternative 2, and they discussed that this -- You know, the history of this issue, and, as you all know, this has been going on for a long time, that it had been a mistake in Coral Amendment 8, and that it had been taken -- It was supposed to be fixed, and it's continued for years, and so that was a big amount of comment. They also said, you know, access areas are not a new thing.

We have them in areas of particular concern for red shrimp, and also golden crab, and they stressed that the fishery is monitored through the VMS, and, with technology today, they are able to keep away-- To keep their gear away from the coral pinnacles, and so that was just sort of a short rundown of three meetings that had been held since you guys last met, and that's really it, as far as what's been going on with the Habitat Committee with the council, and so if anybody has got any questions or anything.

MS. CROWE: Come on. I was going to say, Wilson, you're not going to go without a question?

DR. WILSON: No, and I just wondered, and is there a transcript of those public hearings?

MS. MURPHEY: There will be, yes. I don't know if they're finished yet, but there are public transcripts.

DR. LANEY: Okay. Thank you.

MS. HOWINGTON: The briefing book for the public hearings is due next week, and so a recording of the presentation, as well as a document, which is basically the presentation in Word form, will be put online. You will have the opportunity for online public comment, as well as to attend the virtual webinar, and, again, in St. Augustine in-person, if you so desire.

MS. MURPHEY: Yes, and we did feel it was important, that this issue was important enough to have a public comment, an in-person meeting, and in St. Augustine, right in the area.

MS. CROWE: Paula.

MS. KEENER: I just want to thank the council for their recognition of the importance of this issue, and all of the extra work. I know it's been a long time coming, but thank you, and please thank the council.

MS. MURPHEY: Thank you, Paula.

MS. CROWE: Wilson.

DR. LANEY: So this is more of a comment, and Dr. Runde may want to weigh-in on this, but he graciously -- He and his colleague, Paul Rudershausen -- Did I pronounce that right, or close enough? He and Paul provided those of us on the food web working group some very interesting diet data from large, I would say, or larger, dolphinfish that had been landed as part of the Big Rock tournament in North Carolina.

One very surprising thing, to me, was to see rock shrimp listed as a prey item in dolphin stomachs, and I said, okay, and what's going on there? I said, are the rock shrimp, you know, up in the sargassum, because all of the normal sargassum-associated prey items, that you would presume were being eaten by dolphinfish, were there as well, and so I said, okay, you know, what are these rock shrimp doing in there? Are they up there in the sargassum, or are the dolphin going down and doing deep dives and eating rock shrimp?

Well, apparently, based on at least one paper that Paul sent me, they do deep dives on occasion, but I'm still thinking, okay, maybe there are some rock shrimp in sargassum occasionally, and so, if anybody knows anything about, you know, why rock shrimp are winding up in dolphin stomachs, and that was real interesting to me.

MS. CROWE: Chip, go ahead.

DR. COLLIER: So, at night, during the summer, it's not uncommon for recreational fishermen to put out lights and cast net for rock shrimp. They'll come up to the surface, and so that might be how the dolphin are getting them.

DR. LANEY: So thank you, Chip. That's extremely interesting, and so it sounds like it could be, you know, either or. The dolphin could be finding them in the sargassum at night, or they could be doing deep dives and getting them off the bottom. Either one.

UNIDENTIFIED: Yes, and I was going to mention as well that we do see them offshore on the MARMAP cruises, on the Palmetto, when we're anchored at night. They just come to the lights at the ship, and we see them swimming around the boat a lot of times.

MS. CROWE: Okay. Thank you, and so if -- Unless anyone has a question, or a comment, for Trish -- I think Wilson's comment, as well as others, was a great segue into our first topic of discussion today, which is the updated food web policy, and Kevin is here to give that presentation.

MS. HOWINGTON: One moment while I get everything full screen.

MR. SPANIK: All right. Thank you, and so this is kind of following up from some work that the food web group has been doing for the past couple of years. Wilson presented some of this information at the October 2024 meeting, and you all agreed to the changes that we made. Just to reiterate, the food web map was updated with new information that we found from the pretty extensive literature review.

We updated new prey sources, and sources of diet study information, to update the relative importance of each prey to the overall diet for predators within the FMPs, and then this information was presented to the council at the March 2025 meeting. I believe it was accepted, and I don't believe that there was really any feedback, from what Kathleen said.

So, as I mentioned, through a literature review, and a lot of assistance from Lauren Gentry with FWRI, we updated the food web for all the FMPs within the South Atlantic Fisheries Management Council. We looked at the top ten prey items within each FMP. We looked at all prey across the board. We also looked at just the fish prey, and we categorized the importance of each prey across the board as well.

We did want to kind of point out a little caveat, that most of the studies available are reliant really only to kind of adult specimens within those populations, with the exception that we did have some juvenile-specific diet information from red snapper, king mackerel, and Spanish mackerel, and so kind of the next steps moving forward is what we want to look at is how can we integrate the food web information into the essential fish habitat designations, which we've been discussing recently.

The working group, Wilson Laney, Laurent Cherubin, myself, and, again, Lauren Gentry from FWRI, we kind of did some deep dives, trying to go as far into the weeds as we could, to see how we could potentially integrate this information. One way we considered was designating ecosystem component species, which is what we saw in the Dolphin Wahoo FMP, where I believe it was auxis species, Auxis mackerels, were found to be a really important singular prey item that was contributing towards the diet and longevity of those species.

We were thinking, if we could do a deep dive into the different species, and looking at their prey, and seeing if any particular prey items stood out, that we could go that route. We considered identifying top prey, and designating them as EFH, but, with some guidance from our NOAA partners, we learned that you cannot actually designate prey as habitat. Instead, prey -- The abundance and the availability of prey is actually more of a measure of the quality of habitat, but not necessarily habitat itself.

We also wanted to look into identifying the habitat of the top prey, and identifying that as EFH. We were, you know, trying to conserve habitat for the predators, but we aren't quite sure what the habitat of the individual prey are, and how we could best go about identifying, and potentially conserving, that as well. The last thing was we looked at describing the prey habitat in the FMP as part of the life history summary.

There were several concerns with the different ways that we could go about this, and Kathleen did some -- A lot of groundwork looking into what kind of other councils have done, and how they've

went about this, and one thing that we thought was really interesting is that the Gulf Council ended up putting in this prey dependence definition into their user guide in their EFH amendment, and so I think we're leaning towards going that way.

Some concerns that we have, after reviewing the data that we have, and the different ways that we could look at it, are that, if we do species-specific analyses, it would be really lengthy, and this could be, you know, really a whole document in and of itself, rather than just kind of a definition in the back of the EFH amendment.

It would be super lengthy, super complicated, but, if we did more of a guild level, kind of combining different groups of predators, then there's a chance that we may miss predators that are really specialists, you know, things like the dolphin and wahoo, that are eating a lot of just one particular prey. We also want to look more into the life history stages, because, as I mentioned, we don't have a lot of information about the juveniles for a lot of these predators.

We want to consider when we should separate specialists, and, you know, an example for this would be something like a gag grouper. They may be generalists throughout their life, but they have very unique life histories, where, you know, they grew up in the estuaries early, and they could be eating very separate specialized things there, compared to when they're adults and maybe preying more specifically just on certain fishes.

We also wanted to look at how many top prey to include and how to identify the prey habitats that are outside of where the predator resides. There's not a lot of real monitoring that goes on for those prey, and so we don't have a lot of that information right now.

Moving forward, we want to identify, again, like I mentioned, the different life history of species. We want to look at a subset that have kind of a wide range of life histories, so that we're kind of looking across the gamut, and identify information of importance for all those species. We want to look at the top prey. We want to look at the habitat use of the prey by particular life stage. We want to look at the habitat use by the predators as well by life stage.

As I mentioned, a lot of them are, at least with the offshore reef fish, kind of confined to have a certain area, and have a limited movement as adults, but other species, like gag, have very different habitat use, depending on their life stage, and we want to try and identify areas that don't overlap between the predator and the prey. Then, as I mentioned, try and draft a prey-dependency paragraph for each of those species, and add that into the EFH amendment, and, finally, we'll try and develop best practices and lessons learned, as we go through this, and we'll bring what we find to the next habitat meeting.

As I mentioned, we were trying to get, when we're looking through this, several species with very drastically different life histories, and so we're kind of trying to cover all of our bases within all the FMPs, and so these are some species that we're proposing to look at at the closer level.

First is gray triggerfish. It's a nest builder. It has a pelagic larval stage, and it also has a hardbottom adult stage. We want to look at red snapper, one because it's a highly-studied species, and so there's lots of information. It's a general predator, and it eats a lot of different types of prey. Dolphinfish is a large pelagic predator, and, as we've seen, kind of more specialized.

Golden crab is a benthic predator. We don't know a whole lot about it, but just kind of another trophic level that we'd be interested in looking at. Tomtate, which is a low-trophic-level, hardbottom juvenile and adult stage, and then gag grouper, which I mentioned, has two kind of very different habitats throughout their ontogeny. I think that's about it, if anyone has any feedback on the species, for or against, or a recommendation for another species that we haven't considered.

MS. CROWE: Thanks, Kevin. That was a lot of information, and I think everyone appreciates all the work that this committee has put into updating this policy. It quickly morphed into something much larger than I think anyone thought it was going to be. Brendan, go ahead.

DR. RUNDE: Thank you, Madam Chair. Thanks, Kevin. So, looking at your example species, I've been thinking about this work, and how it may or may not be impacted by the ongoing effort at the council to revise the fishery management unit. I noticed -- The snapper grouper fishery management unit. I noticed tomtate on this list. Tomtate, I think, is one that's up for excision from the FMU, and I wonder if that means it's maybe not a great candidate for being an example species. I don't know if you have any thoughts on that, Kevin, or anyone else, or Chip maybe, who has been leading that effort, who has been heavily involved in that effort.

MR. SPANIK: Yes, and it's definitely a good point. I don't think we had that information before we ended up choosing those species. I don't know. I'll defer to Chip on that one.

MS. HOWINGTON: But then the question is -- Okay, and so tomtate is probably going to be removed from the FMU, right? No idea? Cool. If tomtate is removed -- The point of having it is that it is low trophic level, that it is something that -- I mean, we have maybe not a lot of information on it, but, from when I was on the Palmetto, we caught tomtate all the time, and so what would be a good substitute that could meet what the tomtate -- That niche that tomtate is filling, because, again, the idea behind this is that we're doing experiments of, okay, so we're going to get all these different types of life history stages, and try and come up with here's a method for how to integrate food information into EFH definitions.

UNIDENTIFIED: I just want to raise my hand first. Vermilion snapper makes sense to me as an option.

MS. HOWINGTON: Does anyone disagree with vermilion as a potential species?

MS. KEENER: No, but I can't, off the top of my head, know what all the choices would be, I mean, and so can we look at a list?

MS. HOWINGTON: Give me one sec.

MS. CROWE: Wilson, go ahead.

DR. LANEY: A question for Chip and Kathleen, I guess, is, given that the FMU is likely to be revised, and it's already actually been revised in the past, because it used to be, what, seventy-three species, and now it's down to fifty-some, I think, but, just because something gets kicked out of the FMU -- I mean, the species is still out there, as part of the ecosystem, and so -- But I realize that the council, I'm sure, would prefer that we be spending time on species that are actually under active management, as opposed to species that aren't, but may be part of the ecosystem.

At some point, it seems, to me -- For example, if tomtate shows up as an important prey item in red snapper diet, or vermilion snapper diets, you know, we're still going to be looking at stuff like that, and so the question is does it make any difference if it gets booted out of the FMU, but it's still important from an ecological perspective? I guess that's kind of a generic question.

MS. HOWINGTON: From the perspective of management, and how we use the user guide, if tomtate is -- We wouldn't add in a paragraph for tomtate into the user guide if tomtate is not underneath the snapper grouper species. Now, we would say that tomtate is an important prey, and uses this specific habitat, in that route, yes, but, if tomtate is not a part of the FMP, then we wouldn't add the information in, and so then this -- The exercise of trying to figure stuff out may be for naught, because then, if we remove it, we wouldn't use it for that perspective. We could use it from the prey, but not the predator.

DR. LANEY: Okay. Madam Chair, a follow-up question too, and that is, keeping in mind what transpired historically with red drum, and so, if tomtate gets removed from the FMU, does that mean -- That means tomtate EFH goes away, does it not? I mean, if a species gets taken out of a fishery management plan, then the EFH goes away for that species, and so does the AP need to consider the implications of that as well?

MS. HOWINGTON: So we have -- In the user guide, we have our EFH defined generally by fishery management group, and so, if you remove tomtate, unless there's something specifically calling out tomtate, it will stay the same, but, for instance, tilefish is called out to be very specific, because it has a different EFH than the rest of the general snapper grouper species, and so, if we remove tilefish, then I would get rid of it, and it would no longer be considered EFH, because that's not a part of the FMP.

I do not foresee tomtate -- With this exercise, us identifying a habitat that tomtate uses that other snapper grouper do not use, that doesn't fit underneath that generic snapper grouper umbrella. If they did, that would be very special, and I would love to read that paper, but I think, if tomtate gets removed, we're fine. Other species, I don't feel strong saying that, without delving into some research.

MS. CROWE: Paula, go ahead, and then Brendan.

MS. KEENER: Okay. Thank you. I know a little bit about white grunt, but I don't know about the -- Is the grunt and the cottonwick? Why would -- I mean, if they have similar -- Do they have similar habitat? Why would one of those not be substituted in for the tomtate?

DR. RUNDE: Thanks, Madam Chair. White grunt is on the chopping block too, Paula.

MR. KEENER: What about the margate?

DR. RUNDE: Which one?

MR. KEENER: The margate. They're all on the chopping block?

DR. RUNDE: Yes, and that action, of course, is pending, and not final, and so it's -- It's in scoping. Thank you, and so we can't exactly crystal ball it and say which species on the potential list might be removed from the FMU, but I do think that it's important to consider, at this stage, for, you know, these EFH and food web discussions, which is why I brought it up.

To that end, Kevin, I wonder if your top-ten prey items by FMP would change if you -- Or how sensitive that top-ten list would be if you were to look at it without the full suite of potential removals from the FMU. Do you have a sense?

MR. SPANIK: Yes, and I think it would change quite a bit, and so this is all preliminary, and this is based off of one meeting, about a month ago, and so we're still intending to look into the Ecopath and Ecosim models, to see if anything really kind of stands out on its own, but, depending on how you look at that full suite, there's a lot of things in there that are non-specific, like, because of the nature of diet studies, things that are just to a genus, or an even higher order, and so I think, if you lump a lot of that out, and look at really what you know just from an actual species, that that might -- That those other things are kind of swamping that a little bit, and so we may look at, you know, going down to only high-resolution information and dropping out some of the junk, per se.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Yes, and, to follow-up on that, as Kevin noted, we just generated this list, during our conference call, off the top of our heads. We were just trying to think of, you know, what is the list of species that use very different habitats, or have very different food habits, and so we were trying to get a broad range there to include in the list, and so nothing is cast in concrete here, for sure.

The other thing I wondered about, especially when you're looking at golden crab, which is a crustacean, which is going to be grinding up everything it eats, pretty much, and one of the things that I wonder about, and I hope somebody is actually working on it, is I know that there was some preliminary work done, I think in Chesapeake Bay, with blue catfish, looking at using eDNA for identification of prey items, you know, from stomachs, because you don't have to have the whole intact animal if you use that technique, and so is that a methodology that's really evolving, and might be potentially very useful, in terms of us identifying what golden crabs are eating, for example?

MS. CROWE: Brendan, go ahead.

DR. RUNDE: Thank you, Madam Chair. So, Wilson, the Smithsonian Environmental Research Center has led what they call the DNA barcoding project in Chesapeake Bay. I don't think it was specific to blue cats, but I think blue cats were certainly one that they focused on, given the invasive nature of the species and its detriment. I think that that's a great idea. It could be deployed here. I would like to see that happen. Rob Aguilar, and the Smithsonian Environmental Research Center, and Matt Ogburn, are the people who have been leading that effort in Chesapeake Bay.

DR. LANEY: Okay. Thank you. I know Rob is an NC State product as well, and so we can tap into that maybe, but it seems, to me, that, again, you know, we have a whole separate fishery for golden crab, and, as far as I know, nobody is proposing to eliminate that FMP, at this point in time,

and so it would seem to be rather important to try and figure out what they're eating, even though it's kind of hard with crustaceans.

I don't think people do food habit studies on crustaceans by looking at their stomachs, again, because they grind everything up when they eat it, and so it would be very interesting to have some data from golden crab, and be able to figure out what they're eating, and I love the species barcoding stuff. I think that, in order for you to be able to use this technique in a useful manner, you have to have the barcode for that given species, right, and so that's my perception anyway.

MS. CROWE: Paula.

MS. KEENER: I'm interested in knowing more about why you have suggested vermilion.

MR. SPANIK: I think, at the moment of suggesting it, and I consider this list to be sort of an almost final list, but now, understanding that it is very much up in the air, I'll leave it out there as an option, but I don't have any specific reason, other than it's a highly-sought after game fish, but not from a habitat use standpoint.

MS. KEENER: Okay. Thank you for that. The reason that I asked that question is that I know that, in the work that MARMAP did with the traps offshore, we would always get vermilion in the traps, and never get the tomtate, and so thank you for that.

MS. CROWE: Anyone else have any comments, or questions? Did you have anything you want to say?

MS. HOWINGTON: I did have one clarification, that has come from Chip, who is sitting on the sidelines, for the changes that are being made to the FMU. If a species that is on the chopping block potentially right now, and it is in the scoping stage, gets removed, it can be identified as an ecosystem component species. We have no idea what the ramification for that is going to be with EFH, and I'm going to have to go figure that out, but there is a chance that that could be where some of these species end up being.

Then, to pull us back, this is the list that the food web working group has come up with as a variety of diet and habitat use species. Tomtate is potentially on the chopping block, and so we should probably remove that, and so we have options. We can try to come up with a different low-trophic-level species. We can look into vermilion, which I agree with Cameron is something that we have plenty of data for, and so we should be able to garner something from that, or we can decide to remove it and just leave the five other species that we have, and say we feel like this is a good enough variety.

This is an experiment that we're working on, to see how we want to try and integrate this information in, and is this even feasible, or do we need to try and go a different path, and I would like to remind everyone that the food web working group only has like five people in them, and two of them are not AP members, and so we are probably going to ask at least two other people to come and help with one of these species, to write up that tiny little paragraph, but I open it back up to the floor. What do we want to do with this list of species, and then are you willing to help?

MS. SPENCER: I will put my vote in favor of at least having another low-level, or low-trophic-level, species represented here, and I will help.

MS. CROWE: Anyone else feel one way or another towards keeping the low-trophic-level species in there? I think it seems like a good idea.

MS. HOWINGTON: Okay.

MS. CROWE: Wilson.

DR. LANEY: So one other need we have too is we really -- Again, this was just off the top of our heads, a preliminary list, and I'm looking down, and I think -- I know very little about golden crab life stages. I'm presuming they're like other crustaceans, and they lay eggs, and the eggs hatch, they go through multiple larval stages, and then they settle out at some point on the bottom.

Gag, I know more about. Dolphinfish, I know more about. Red snapper, I know a little bit more about, and gray triggerfish, but one of the things I have not done, and I would love to hear from some of you, whether you've delved into the literature for their juvenile or larval life stages, and, you know, I don't even know if anybody -- Has anybody ever even looked at what larvae are eating?

How do you do a stomach excision on a larval dolphinfish? First of all, you have to catch a larval dolphinfish, which is hard enough, and so, again, we'll look into the literature, to see what's there, because I haven't done that. Maybe Lauren has, and I know she was on, and so she might want to speak to that. I don't know whether she has any data in the diet database for larval stages, or early juvenile stages, of any of these species.

MS. HOWINGTON: All right, and so, speaking of Lauren Gentry, she just responded, and, Lauren, I'm just going to allow you to unmute. Lauren is not a member of our advisory panel. However, she is our lead for the South Atlantic Council's ecospecies Ecosim model. She's the one who provided all of the food web information that we've updated, and so I've made her an unofficial working group member, and I don't know if I'm allowed to do that, but I did, and so, Lauren, you're unmuted. Go ahead, and you can talk. If she feels like it. Otherwise, I'll just read her comment.

All right, and I'll go ahead and read your comment, Lauren. She is requesting that maybe we delay the tomtate deep dive, or finding a replacement species, until after the FMU is finalized. All these are mostly -- She's there. Lauren. You're unmuted, Lauren. Try it now.

Unfortunately, we cannot hear you. Sorry, but, since all these are going to take a while, maybe we just focus on the five, and then we pick a lower trophic level during the next round to see, because it might be that, as we're doing these exercises, we discover that let's do big FMP, like the user guide is written, and then we can easily identify specialization, or, yes, we're going to need to do this species-by-species, and this is going to be a huge lift, and good thing we have five years. Maybe we can just kind of postpone, just leave it at the five.

MS. CROWE: How does the committee feel about that? Kevin, go ahead, then Wilson.

MR. SPANIK: Depending on available data, I mean, one thing we mentioned is we don't have a lot of information for the juveniles, which at that stage are lower-trophic-level predators also, and so, if we can find more information there, and it could potentially be like a suite of juveniles, in place of a particular species.

MS. HOWINGTON: We are going to be discussing trying to update life history information as well. That's part of the next EFH five-year plan, that I've been threatening you guys with for the last six months, and so it could potentially be that, if we're looking at increasing our juvenile information, we simultaneously are adding in some juvenile prey information, but that's a conversation for two days from now. You all are jumping ahead.

MS. CROWE: Wilson.

DR. LANEY: This is just a curiosity question, and so are the species to be removed from the FMU -- Is that just a workload consideration kind of thing, for the most part, or the fisheries for them are just too small magnitude, and the council needs to be spending its time on larger magnitude fisheries, and what's the rationale behind that, just for my own curiosity?

MS. HOWINGTON: I want to tag in Chip for that.

MS. MURPHEY: I can call a friend, right? So when -- It kind of just came down to the point that we were not going to get any more information, stock-assessment-type information, on any of the species besides the, what, fourteen that we do have stock assessment -- Fourteen to eighteen species, and, I mean, we've been waiting for twenty years for more information, and it just sort of came to the conclusion that we weren't going to get any more stock assessments, and now, with the Fisheries Service, you know, losing people and everything, it's even less of a chance that we're going to get it, and so we're -- So, in removing these, it's just we just -- We don't have any information on them, and so it's hard.

How do you manage something we have no information on? We've got ACLs for groups, but they're, you know, kind of -- We've just got these ACLs from groups that are not based off of any stock assessments, and so it was just sort of, you know, let's get out from under the burden of managing fifty-five species, when we don't have the data for that, and get a lot less. I don't know if you want to add more, or if that pretty much captured it.

DR. COLLIER: I think that covered it well. In addition, you know, we don't have data, even landings data, for all species, and the recreational landings data is constantly changing, and so trying to manage all these moving parts has been a challenge for the council, and they're just trying to streamline and focus management on the species that the fishery seems to concentrate on, and target, and then we can potentially add these other species, either as ecosystem component species, potentially with something as a protective aggregate limit for them, or completely remove them from the fishery management unit.

There's some indication that something like Atlantic spadefish -- Although it is in the fishery, it is a different style of fishing, and so that might be considered different than something like a tomtate, that you could potentially catch while you're actually going out there trying to catch maybe a black sea bass.

MS. MURPHEY: We're -- The council is actually spending a fair amount of time on this, and going through this. The MSA has this list of criteria that we've gone through with that, and, you know, we'll be talking about it again in September. It's out for scoping. Is it out for scoping now? Also, you know, if it does get removed, how are states going to deal with management, and so, I mean, there's still a lot of moving parts in even removing or making them EC species, and so I think that's also why we really can't answer the question of are -- They know, they may be on the chopping block, but are they going to get chopped, and, you know, we just don't know yet.

DR. LANEY: So, Madam Chair, just a follow-up question, I guess. I get it, but, at the same time, I'm surprised that, given the comprehensive fishery data collection programs that we have in place, that we're not getting the information that we would need to do an assessment on some of these species, especially if there are -- I'm trying to choose my word carefully, but if there are significant, and I don't know how to define what a significant landing would be for a white grunt, for example, and, you know, it's just surprising to me, but, I mean, I understand it.

With the staff cuts, and, you know, the reduced workforce, how in the world -- I mean, we've been lagging behind, as the South Atlantic Council, for a long time, and the council, and everybody else, stakeholders, have been very vocal about the fact that additional resources were needed, and instead we go in the opposite direction.

You know, I just find it hugely ironic that, you know, Alaska has these huge fishery resources up there, and maybe that's, you know, part of the solution, is they have a huge fishery resource, that's hugely valuable, and so they get the resources they need to be able to do the analyses that they need to do, whereas, again, my perception is that, as far as recreational fisheries go, the Southeast, the South Atlantic in particular, is hugely important, from a recreational perspective, from an economic and cultural and ecological perspective, all three, and so it's disappointing, although I understand it, and I'm glad the council, based on what Trish said, is taking a good hard look at it, especially what happens then if management for some of these species is shifted to the states. You know, that's a good question.

MS. HOWINGTON: So Lauren Gentry was able to respond to Wilson's question, to pull us back to the larval diet. There is very little information available. It's unlikely that larval life stages will specialize in whatever plankton prey they're eating. They're most likely just going to go for plankton, and, even if they did, we're unlikely to have enough studies done over multiple years, with multiple locations, to conform any kind of specialization for a juvenile life stage.

MS. CROWE: Okay. Any additional comments, or questions? Wilson.

DR. LANEY: The only other comment I would offer is, if you all have thoughts, you know, subsequent to our discussion here, about species that you would like to see included in the example list, that the workgroup can take a crack at, let us know.

MS. CROWE: Okay. With that, we are going to move to our next topic, which is --

MS. HOWINGTON: I still need you guys to agree.

MS. CROWE: We're going to back up.

MS. HOWINGTON: So do you all agree with the example species for gray triggerfish, red snapper, dolphinfish, golden crab, and gag grouper? Are we cool with that, and we'll move forward with a lower trophic level, hopefully in the future?

DR. RUNDE: Definitely cool with that. Wilson, I shared that latest dolphinfish piece with you and Lauren, and I assume that it's therefore been shared with any -- Or it certainly may be shared with anybody else who is working on this.

MS. HOWINGTON: It's made the loop.

DR. RUNDE: Great.

MS. HOWINGTON: At least I've received it twice.

DR. RUNDE: Great. Since dolphinfish is on that list, I just wanted to make sure everybody has got it. Thanks.

MS. HOWINGTON: All right. Then, Erin, you have volunteered, and so I will add you to the working group, and invite you to the next meeting, when we can decide which one of us is going to get which species, because that gets us to -- That gets us to seven, but, technically, Lauren and Chip are not members, officially, of this AP, and so, yes, that actually is good. I'll do one of them.

MS. CROWE: Okay. Now we're ready to move on to our next topic, which is the other policy that we have a committee working on, which is the revision to the alterations of flow policy, and Matt is on the committee, and is going to give that presentation for us.

DR. JOHNSON: So we, I guess, as a little bit of timeline, which we'll jump into on the first slide, but we're basically looking at the alterations to the river and estuarine nearshore flow policy document. Last October, Daniel Kolodny, from the Indian River Lagoon National Estuary Program, came and presented to us, at our October meeting, and he shared some information about the environmental and anthropogenic-related challenges and changes in the Indian River Lagoon system specifically, and some of the ways that that program is working to address those.

In response to that presentation, we had a discussion, at that meeting, of how we wanted to respond to that, and we decided to add revisions to the flow policy to our workplan, and then that was presented to the council, at the December meeting last year, and they agreed to do that, or for us to add that to the workplan.

Since that point, the working group has met three times, and started to work through the document and identify what changes that we want to make to that, and so I'm going to go over some of those in a minute, but I kind of wanted to circle back, I guess, to re-trigger everybody's minds around like what the kind of original intent of that document was. In going through it, we've talked about this quite a bit. I think, originally, that document was written with a strong focus on damming operations and water withdrawals and impacts to anadromous and diadromous species.

It's been kind of one topic that we've focused on with our edits and our revisions so far in how we're thinking about this flow policy document, and so the main things that we were trying to achieve with this document were review the current content and policy and determine if it's still

relevant, broaden the scope to incorporate a broader suite of factors pertaining to flow, and update the policies and flow altering projects, and update the references and work cited.

We have achieved some of those objectives so far. We have revisited the objective of the policy, and what needs to be revised or added, and we've started to incorporate more information on water quality, runoff, and stormwater management.

We've currently added a section under the threats to riverine, marine, and estuarine resources from hydrologically-altered activities, and so we added a section in there specific to water quality, that we're still kind of building and working on. We have updated and reorganized the citations and the references. We've added some new ones, and updated some others, where appropriate. We've reviewed and updated the sections that outline how each state manages riverine flow, and so what organizations have policies and regulations in place to control inflow into the estuaries, and we have reviewed how the content is organized throughout the document, to increase its clarity and ease of read.

We've moved some items around. I think there was some places in there where we felt like things were duplicated, and so we've reduced that redundancy a little bit, and tried to clean it up and make it a little bit more streamlined, and we have removed the mentions of anadromous and diadromous species, and we felt like the document was too focused on these species and not considering the broader suite of impact on estuary and riverine-dependent species that are impacted by changes in hydrology, flow, water quality, et cetera.

We're trying to broaden the scope of this document a little bit, to expand beyond just those species, and so I mentioned that we've met three times. We've made some progress.

We're still kind of working through, you know, the direction of this document, and what we want to include into it. As I mentioned, we really want to incorporate water quality information and details in here. We're still trying to -- We've made some strides on it, but we're still trying to kind of pinpoint exactly what language to use and how to talk about water quality.

Like I said, I think the original document was really focused on, you know, quantity of water getting down into the estuaries, and potentially being impacted by dam operations and water withdrawal, but we've got another suite of, you know, challenges in our systems impacting EFH in the estuaries, you know, broader hydrological changes, and not just limited to dam withdrawals.

We've got, you know, dikes, tidal gates, roadways, culverts, irrigation systems, shallow-water dredging. We've got a suite of factors that impact flow and water quality, that ultimately impact EFH in the estuarine system, and so we're trying to broaden this document and expand those topics and what we say about them.

We are, you know, kind of at a phase that we're still navigating that, but we're also looking for additional input on these topics, and any others that we might not be thinking about. We've got some of those on the slide here that we're kind of working in, adding some background information, identifying what the challenges are, and then ultimately defining some specific policy statements on these to include into this policy document.

Moving forward, a couple thoughts, or kind of direction, of where we're at. The main group, that we have organized right now, is going to continue finalizing the main body of this document, the kind of background information, what the threats are, and the challenges are, but we are looking for some input and assistance with developing these policy statements associated with some of these challenges. Maybe Cameron will loop you into that.

I guess, first, kind of a question and direction. I don't know how frequently you guys have been into this document, or kind of attached to it, but, when thinking about flow, and this flow policy, do you think we're on the right direction here with trying to broaden and incorporate some of this additional information, some of these other challenges that we face with, you know, maintaining high quality flow, quantity, and quality to protect our EFH.

Are there any on this list that we need to be thinking about, and do we have any volunteers, or anybody that wants to kind of help contribute to writing some policy statements? Did I cover what we needed to?

MS. CROWE: Thank you. Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair, and so, yes, I already volunteered to pick up the irrigation one, which I envision as being a very short section, at least probably just a couple of paragraphs along. The one thing I've done is to look into what the state requirements are. In North Carolina, as far as I know, if you are pulling water from a stream system for irrigating agricultural crops, you only have to even notify the state if you're pulling more than one million gallons per day. Trish, do you know if that's still -- Based on -- I had a conversation with Fred Tarver, who just retired too from DWR, and, as far as Fred knew, that's still the only requirement in North Carolina, and I don't know what it is in South Carolina, Georgia, and Florida, and so I'll be looking into that.

What I envision putting in here is to say, okay, from a threat perspective, here's what we know about irrigation withdrawals, and, of course, the concern there is, if irrigation on a given tributary is happening to such an extent that it's altering what we perceive as ecological flow, or what has been identified as an ecological flow, then that would be of concern to the council, and how likely is that to happen? I don't know. I have no idea, at this point in time.

The North Carolina Division of Water Resources does these five-year basin-wide water management plans, and so there is information in those plans as to what level of irrigation is going on, and so that's the first place I'll look for North Carolina. Whether or not South Carolina, Georgia, and Florida have similar sorts of information available, I don't know, but I don't anticipate this one being, you know, a huge lift, either for gathering the information or coming up with a policy statement.

Matter of a fact, the policy statement could simply be that, you know, if irrigation withdrawals in a given tributary are occurring to the extent that it's compromising or degrading ecological flows, then the council would recommend, you know, that concern be taken into consideration.

MS. CROWE: Thanks, Wilson. I'm going to jump in and I'm going to suggest that we add stormwater conveyance. I know we have culverts there, but I think we see a lot of stormwater conveyance via pipes of various sizes, and so I think we should add that to the list, and then I'm not sure about including shallow-water dredging on this list, since we do address dredging in the

beach nourishment, or the beach dredge and fill policy, but I would be curious to know what others think about that, and/or stormwater conveyance. Did someone over here -- Cameron.

MR. LUCK: I was actually going to suggest stormwater outfalls, and also volunteer to help in some capacity with this, given my perspective at the state level.

AP MEMBER: I'll mention, and I don't know if it would be appropriate, but inter-basin transfers of water. That was an issue that came up a decade or so, about Atlanta wanting more water, and there was some talk about sending Savannah River water over there, and things like that, and, also, re-diversion of water, such that we did with the Santee River, and it changed the salinities dramatically in the Santee Estuary and Charleston Harbor. You know, it's good and bad, depending on your point of view, but it certainly has an ecological impact.

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

DR. RUNDE: I was just going to ask Cam to define stormwater outfall, for those of us who mostly think about fish, or that could just be me.

MR. LUCK: All right. Well, the brief synopsis is what we see in North Carolina, at least when I was on the regulatory side, is you'll have a riprap splash pad in an estuarine area, and you would have a corrugated pipe that collects stormwater flow from a development, or fill in the blank, and it will hit that splash pad, and go into an estuary, with the expectation that the estuary would filter that water before it makes its way out into the larger system. There is some relic oceanfront outfalls in North Carolina. I'm not sure if those exist elsewhere, but they do occur in North Carolina, and so -- But, yes, outfalls are a fairly common way to get water out of a developed area.

MS. CROWE: I'm just going to jump in and say that there are some relic ocean outfalls here, but, also, I've seen a few incidents where you have a stormwater outfall pipe, and they have not constructed the appropriate riprap pad, and then it creates a quite deep scour hole in the estuary, that can be very problematic, too. I lost track of who had their hands up, but Kathleen is sitting here.

MS. HOWINGTON: Laurilee Thompson has commented twice, and she is a former council member. She is the one who initially brought this to our attention, and so I feel like I should read aloud that she would like to thank us for including stormwater in this policy, since it wasn't in there.

She lives on Indian River Lagoon. She deals with the Okeechobee Lake discharge, and it is a very large issue, and this is also an appropriate time for me to mention that Mike Merrifield, who is our Shrimp AP lead, and is on the Coral Advisory Panel, also has reached out to me and said thank you for contacting this, and we need to tackle this, and water quality is a huge issue, and has highlighted that they appreciate our work on that. Moving on with that though, Scott Kathey has his hand raised.

MR. KATHEY: Scott Kathey, with National Marine Sanctuaries. Have you considered municipal wastewater discharge as a potential impact?

MS. HOWINGTON: Adding it to the list.

MR. KATHEY: Because, particularly when we have large storm events, these treatment plants will be overwhelmed, and you wind up -- You can wind up with millions of gallons of raw sewage going into the waterway. In my work out in the west, in California, this happened fairly regularly, and California is not known for having a lot of rain, and so I imagine that's an ongoing issue here. It just overwhelms the system, and winds up in the storm drains, quite often, and then shunts right into the waterways.

MS. CROWE: Wilson.

MS. CROWE: Thank you, Madam Chair, and so one other one, Cameron, that I know of in North Carolina, is the Brunswick Steam Electric Plant, you know, offshore discharge as well. That one is a little different, since it's from a power plant. I don't know, and are there others from power plants that are discharging into the Atlantic Ocean from the other three South Atlantic states? I don't know.

MR. LUCK: There's a few relic structures. Our director, before being the director of the coastal program, he wrote a decent memo about what outfalls still existed. It's been some time since I read it, and so I don't know which of those, if any, are still active, but I'm happy to go look and see, at least in North Carolina, what's still being used.

DR. LANEY: Well, the only thing I'll mention, specifically relative to that one, is heat was an issue there, because it's a thermal discharge from the cooling system of the power plant, and, again, I don't know how widespread that is. It may be that that's unique to North Carolina, and to that one particular facility, and I don't know.

DR. RUNDE: If thermal discharge is within scope here -- This doesn't exist yet, but there is a possibility that the Kitty Hawk South offshore wind area would be using direct current, high-voltage direct current, which would require an offshore cooling station. I don't know if that's the correct term, but, anyway, that would be within the South Atlantic region.

DR. LANEY: There is a whole body of literature, by the way, on, you know, heat inputs. Part of my master's degree actually got published for that, in one of the EPA thermal ecology symposia. It was a big deal back in the early 1970s, because there were a lot of estuarine discharges proposed from power plants, from nuclear plants and conventional plants both, and so we should be able to find some information on that fairly easily, although it might be rather dated.

MS. CROWE: I think there might also be some information about that, maybe in Fish and Wildlife documents, because they've looked at that in relation to manatee impact, and so that may be a starting point to look for that information. Kathleen.

MS. HOWINGTON: Anne.

MS. DEATON: Thank you. I was just going to mention, when you were talking about stormwater runoff, there's really two types of stormwater runoff. You know, I'm thinking first about St. Lucie Canal, you know, the releases from Lake Okeechobee in Florida, and that's -- I mean, that is a stormwater release.

They do, you know, timed releases, because of rainfall, and that's having huge impacts in Florida, but then there's also the type that Cameron is mentioning, kind of a smaller scale, but very, very more abundant. They're everywhere, and every road, pretty much, in the coast is going to drain somewhere, and they aren't actually authorized to have a direct outfall, but it's a bit of a loophole, I think, by discharging close, but not in the water, and letting gravity take it the rest of the way, and so I would just cover both of those.

I was going to mention, on the ocean outfalls, you know, there are still -- You know, there's stormwater outfalls at Carolina Beach and at the Outer Banks, and they've actually increased some in recent years, and so I would say, as things get tougher, I wouldn't -- I think that, to reduce flooding in towns, it may become more common, and that's all.

MS. HOWINGTON: We also have Bob Zales highlighting the runoff from rocket launches should also be included. I think that's going to be covered in our water quality by development, but we should keep that in mind. We're actually going to be talking about space right after this, and, believe me, in every letter I've written, water quality is one of the things that I've highlighted, but we should still keep that in mind, of either adding excessive freshwater to a saltwater environment, or additional propellant, additional fuel, runoff from concrete, and all of that needs to be added into this.

To pull us into kind of focusing up, I would like to kind of give you guys where we're at mentally and what we're thinking. The flow policy working group, which now involves Cameron, because he volunteered, and he can't -- No backsies. It's going to meet again and try and clean up the main body of this document, not including the council policies at the very end. I have cleaned those up. I've reorganized them. Like we said, there was a lot of repetition in there, just some policies that were stating one thing and then. like five policies down, stating the exact same thing.

I've cleaned all that up. If we can clean up the main body, and maybe continue to add in the water quality details, and then share it with our group, with like say this list, and then the list of all the other things we've added into our policies, would you all be willing to write one policy per thing?

So, for instance, Stacie has volunteered for tidal gates, and Wilson has volunteered for irrigation, and we can try and knock it out that way, where you're only going to be doing one little paragraph, versus -- Right now, honestly, our working group is kind of overwhelmed with like I know about irrigation, but I have to go in and do full research into figuring out what policy to write, on top of also tidal gates, on top of concrete runoff, and so it's just becoming a lot bigger than we expected, because of the initial development of this policy being so hyper-focused, and so many new types of construction have occurred since then.

Does the group think that that's okay? Are you comfortable with that, if we are trusted with like the main body, and then we come back, as an AP, and try and fill out the rest of the policies all together? I'm seeing heads nod. Awesome.

Okay, and so then what I have here for our AP action was to discuss the additional edits to the policy, which we have done, decide if the flow policy is ready for submission to the council. I'm a vote no. I think that was a bit too going far ahead. Then adding in stormwater conveyance, adding in inter-basin transfers, making certain we're covering our stormwater outfall, and if the stormwater is coming, you know, purposely or accidentally, those two different types.

Municipal wastewater discharge, we're adding in, and adding in something about thermal discharge for windfarms. This is going to be real short. Okay, and then we have a hand up from Anne.

MS. DEATON: I didn't have my hand up. Maybe I was supposed to take it down.

MS. HOWINGTON: All right. I'm going to take it down for you, okay, Anne?

MS. DEATON: All right. Thanks.

MS. HOWINGTON: All right. All right, and so, with that, I think that's what we have for the flow policy. Matt, are you good with that plan?

DR. JOHNSON: Yes, and there was just something I was thinking of. I don't know if it's related to the plan, but I was kind of curious why we had multiple people here. In Florida, our Fish and Wildlife, FWC, coordinates with our water management districts, and so the water management districts in Florida are the ones that put together the flow plans, the water use plans for their districts, on a five-year cycle, but they coordinate with us, at FWC, and get input on fish and wildlife needs in those flow plans.

I don't know if there's a spot for incorporating language, or suggested policies or recommendations, for like states, because I'm thinking this is also kind of a project-specific basis, but I was kind of curious. With other states, is that something that's common? Is that a regular practice? Is it mandated? I just kind of wanted to hear some background on that from folks, to think about how we talk about that in this policy.

DR. LANEY: Well, as far as the information goes, you know, I alluded to, earlier, the fact the North Carolina Division of Water Resources does those regularly scheduled five-year basin-wide water quality plans for each river basin in North Carolina, and so that's similar, it sounds like, to what's going on in Florida with the water management districts.

DR. JOHNSON: In those plans, do they go to other agencies, and divisions, and ask for specific like fish resource needs, wildlife resource needs, and incorporate that into those plans?

DR. LANEY: My recollection is they do, but I haven't looked at one lately. Cameron may know, if he's looked at them more recently.

MR. LUCK: Are you talking about the water quality certifications?

DR. LANEY: I'm talking about the basin-wide water quality plans. You know, there's one for each major watershed. They're big documents, and they look at everything having to do with water, for each watershed, and so, historically, those were being done pretty regularly, on a five-year cycle, and I think they still are, and they used to put out, you know, the hard copy, which would be a substantial document, and now I think they're all online, but I think that they do include things like that.

I know that the Fish and Wildlife Service historically reviewed those, and I'm pretty sure -- Anne can help me remember, Anne Deaton can help me remember, but I think DMF looked at those as well, and the National Marine Fisheries Service as well, and the perspective we were looking at them from was, you know, what are the ecological flow needs within each river system.

In North Carolina, actually, the legislature actually put together a group to look into ecological flow needs. They produced a report, but I don't think much has happened since then. I think the report has largely been sitting on the shelf, but this will give me a good opportunity to dig back into those plans, and the literature, and see what's in them.

MS. CROWE: Anne, go ahead.

MS. DEATON: So, Wilson, I was just going to address that. I think you're talking about DWR has the river basin plans.

DR. LANEY: Yes.

MS. DEATON: They are done -- They're supposed to be done every five years, but they've been behind. They're a large planning document, that includes all kinds of factors that affect the water quality, but the big -- If I understood, Matt, you're talking about more about the water intakes, right, the water use, which --

DR. JOHNSON: Kind of all the above.

MS. DEATON: Okay.

DR. JOHNSON: I'm thinking, in terms of developing the minimum water levels and flow regulations and policies in Florida, they come to us, and we review those, and we provide input, as an agency, on the needs from a fishery perspective, and that gets incorporated into those plans, and so I wasn't -- I was kind of asking what other states -- What kind of the interaction and engagement across programs is to develop those plans.

MS. DEATON: Yes, and I think that we don't do as much of controlled water flows as Florida, probably, unless there's a dam, hydropower, and so, like the Roanoke River, they have to follow certain flows, that are tied to the fish needs, and the Cape Fear -- The Nature Conservancy is working with the Corps to do really ecological releases, but it's not mandatory, I would say, and so they're doing it where they can release at the right time to help with fish migration, and also to reduce algal blooms, but, other than that, I don't really think that anybody is asking the fishery agencies for input, because it's not required.

MS. HOWINGTON: It doesn't mean we can't though. I mean, so we could -- Again, we've cleaned up the body of this policy -- Anne, were you still talking?

MS. DEATON: I agree with you. It doesn't mean we can't.

MS. HOWINGTON: Right, so maybe we can, again, clean up the body of this policy, where we have a lot of this information compiled, and then we could send it out. That was going to be my

final request, is can somebody give me someone I can send this to that is a water quality flow regime expert, because I'm an ecosystem person.

I understand all of it, but I would love an expert to give, you know, a little quick look-see, and so maybe one of the things we add to the to-do list is, after the body is cleaned up, I send it out to the panel, and we can request, you know, can you all forward this to anyone you know that's in water policy development for your state, and see if we can get some of their input in there. We have the language in our policy, but maybe getting some subject matter experts to take a look at it would be a good idea.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair, and so one place to look is in the state wildlife action plans, which are currently -- The next iteration is coming out, which is like iteration number three, I think, and I don't remember -- The North Carolina plan does have river-basin-specific chapters in it, that address each river basin. Whether or not they address the ecological flow issue or not, I don't know. I'll have to look at it, and it happens to be open on my computer for review right now, because they're asking for input, and so it's a good thing for me to do a quick find check on and see if they talk about ecological flows at all.

MS. CROWE: Anyone else? Anne, go ahead.

MS. DEATON: I'm sorry. One last thing. I was just going to remind you that most of the water intakes, and the discharges, are occurring in the freshwater portion of the system. It might be a coastal draining river basin, but they're pretty far up there, and so keep in mind what you -- You know, how far you want to -- You know, how broad you want to -- The issues you want to address here, because it can snowball. It's pretty big. I'm not saying it doesn't have an effect, but it's pretty far up in the system.

MS. HOWINGTON: But the good thing is that we have the definition of the river limits in our user guide, and we've gotten that approved, and so we can use that as our definition of going to this point.

MS. DEATON: Ahead of time.

MS. CROWE: Yes, and we had that from --

MS. HOWINGTON: North Carolina.

MS. DEATON: Yes, and that's way up there, but okay.

MS. CROWE: Okay, Wilson, go ahead.

DR. LANEY: What you said is correct, but I will note the linkages. You know, the diadromous species, of course, which spend -- Except for American eel, most of them spend most of their life in the ocean, and they do constitute prey for council-managed species, specifically king mackerel and others, and so it admittedly pushes us way upstream, to the extent -- I think we have to have

some pretty good documentation for the fact that withdrawals, or diversions, as David noted, that are occurring a good ways upstream, still fall within the purview of EFH.

I guess we have to look and make sure. I like the head of tide thing. Certainly the head of tide is a good location. Anything downstream of that, I think we don't have to worry about as much as we do upstream stuff, and I will note that there are what we typically think of as estuarine or marine species that are 137 miles up the Roanoke River. I mean, we've got summer flounder up there, you know, below Roanoke Rapids Dam, even though that's a commission species, I guess, and not a council species.

Still, I think the challenge will be for us to write this in such a way so that we show here's the linkage to EFH, from what impact is occurring here, and that's why it's important to the council, and that's why the council is developing policies on these things.

MS. CROWE: Thanks, Wilson. That's a good point. Kathleen.

MS. HOWINGTON: Steve.

MR. MILLER: I would just like to make a few general comments on this, and talk about -- Having dealt some with minimum flows and levels in Florida and looking at freshwater needs for an estuary.

The St. John's River Water Management District has always been a criticism of my MFLs. My first one is they accept an MFL by what's called a level of unacceptable harm. I tend to equate that to how many times can I cut you with a knife before you die, and so I'm not real comfortable with using a level of unacceptable harm for what we constitute a basic flow requirement, and a lot of the flows are set.

They start at the headwater reach, and they look at the areas immediately impacted, and they work their way downstream. To me, I think that's kind of a faulty approach, in the fact that we should be looking at what does the estuary need, and then work our way upstream.

I was involved with a large project. We published a big report on the potential impacts of water withdrawals on the St. John's River Estuary. There was really not a lot of information. There's a lot of information out there, but it's not something you can really coordinate, but we did look at a lot into the concept of static versus dynamic habitats for various what we call pseudo-species, basically life history traits, where they come in, organisms come in, and use oyster habitats, to a certain level of development, and then they move up into more freshwater.

You have this -- Over those oysters, you have a structural habitat, but you also have a dynamic habitat, which is salinity, and so we started taking a look at how these withdrawals might affect the salinity over what we consider to be static habitat types. Once we had developed quite a few models for this, kind of looking at how the impacts of the withdrawals would affect the estuary, then we had a large-scale dredging project which then advanced saltwater intrusion up into the St. Johns River, past these static habitats, and so all the modeling and stuff that we had done suddenly can't be comparable anymore, because now you're getting more saltwater intrusion, because of the dredging project.

I would encourage at least something in here to take a more holistic basin, to look at these things, and not -- You know, at least for Florida's instance, I think we get too site-specific, and we don't think of the system as a whole, until we're all the way at the bottom. That's kind of my comments on these minimum flows.

MS. CROWE: Wilson.

DR. LANEY: So, Steve, thank you for that comment. I didn't articulate it, but I was going to say something earlier about, and I don't know how to characterize it for the sake of our discussion here, but maybe tidal prism impacts, because navigational dredging, in the Cape Fear River certainly, has changed the salinity regime upstream, and so you get ghost forests developing, where there used to be tidal freshwater systems, and so I agree with you.

That's -- Somehow we need to capture that fact, that, when you deepen a channel, for whatever reason, it changes the potential for I guess the head of tide. I mean, that's -- We've got all these head of tides designated now, but they change. They're mobile, if you alter the channel dimensions, and that's going to be probably pretty specific, and limited to those areas where navigational dredging is still occurring, and I don't know. That's something we can look into though, and so, yes, and it's not just Florida. It's North Carolina as well, at least in the Cape Fear River estuary for sure.

MR. MILLER: Well, for the St. Johns River, you know, we looked at that. Basically, you know, you have certain tidal salt marsh, especially oyster habitats, with a certain salinity regime on them. They move that salinity regime upstream with the concept of, oh, this will just change.

Now, when the St. Johns River enters the ocean, there's vast wetlands associated with it. When we -- You know, they were in a hurry to dredge, and I assume it's the same up there with Carolina, because we're wanting to bring big ships in. The EIS for that project basically considered within channel impacts of what that dredging would mean, and not what it will mean on the saltwater prism in the surrounding wetlands, which was a major concern I had, and I was no longer invited to sit in on those meetings, but, anyway, yes, I think that's something that seriously has to be considered.

MS. CROWE: Kathleen and I were just wondering how that was not addressed in that dredging project, but, anyway, does anyone else have any comments?

DR. LANEY: Well, yes, and did we address it in the dredging policy?

MS. CROWE: Off the top of my head, I'm not sure, but I can't imagine that changes in salinity regime was not addressed.

DR. LANEY: Yes, because it's in the Savannah.

MS. CROWE: That's a huge impact.

DR. LANEY: Yes, and it's in Georgia, in the Savannah, as well, and so maybe we did address it over there, and clearly there's, you know, some cross-coordination, and is that the right word, or cross-fertilization, whatever, needed between that policy and this one.

MS. HOWINGTON: Doing a quick search-and-find, in our newly-updated beach nourishment policy, there is no mention of salinity.

MS. CROWE: Okay, and so we might need to add that to our list for the working group to talk about, and see if we need to include some little blurb on that.

MR. MILLER: Yes, and there is an excellent paper out there by Mark Peterson on the static versus habitat salinity regimes, and estuary and resource, that would make a really good source for this.

MS. CROWE: Would you share that with Kathleen, please? Then, Anne, you can go ahead with your comment.

MS. DEATON: Thank you. I was just going to mention, for all of the major ports on the South Atlantic, this will be relevant too. The Cape Fear is right now in the process of putting together an EIS to do deepening, and so there's already been impacts, because of the salinity, and they know there will be more. It doesn't stop the project, but there will be mitigation, and so they do, you know, the UMAM evaluation, and then there will be mitigation, but you can't really stop these port projects, at least, but you can influence them and minimize the impacts through that mitigation, or maybe some of the design, but Charleston -- Charleston, Savannah, Jacksonville, you know, they'll all be relevant.

MR. MILLER: Yes, and there was no getting in the way of that Jacksonville project. I mean, it was going, but the evidence -- They shifted that salinity regime a significant distance upstream. There's little doubt about that.

MS. CROWE: There was a study, actually as part of the Charleston Harbor Post 45 deepening, that looked at changes in salinity up the Cooper River, and there were several years of monitoring that went with that, and I'll share that report with the group as well.

MS. HOWINGTON: All right, and so it looks like this policy is about to get a lot longer, which is good. It should. Again, the flow policy working group will meet again. We will clean up the main body. I have a volunteer, from Laurilee, to send me a water quality expert that I can try and get some language from, and so we'll be able to add that in. Again, we're adding stormwater conveyance, inter-basin transfers, stormwater outfall, municipal wastewater discharge, thermal discharge.

Sorry, and I'm going as fast as I can through my notes. We need to make certain to look at this holistically. We need to add in shallow-water dredging and salinity impacts. Look at state wildlife management plans for flow or water quality information, or language that we can steal, because I have no shame, and I will definitely steal from someone, and reference them. Thank you. I think that's all we had added. I think that looks good.

We will clean up the body of the policy. We'll send it out, and then, again, I'm going to request that you guys share it with whomever you know that does water flow policy, and ask them for their edits, to make certain that we're covering everything, because we're going to update this as best we can.

DR. LANEY: Kudos to Chip, again, if he's still back there. He's back there. How many of you were able to sit in on the last council webinar, which looked at the two habitat restoration projects in Florida? I think a lot of us did, and so that was great, and so there's two of your experts right there, from the Everglades restoration and Indian River Lagoon.

MS. CROWE: Okay. So we are going to take a fifteen-minute break, or a little more than fifteen minutes, and we'll start back up at 3:00 with our presentation on space.

(Whereupon, a recess was taken.)

MS. CROWE: Okay. Everyone is back from the break, and this is our last presentation for this afternoon, and I just found out that, overnight, Kathleen became a space expert, and so she is going to give the presentation on space industry activity impacts on habitat.

MS. HOWINGTON: All right, guys, and so this is a little less of an impacts on habitat and more of a summary of how the space industry has gotten larger, and has become more relevant for the council, and then it is a discussion on what recommendations we, as an AP, have for the council on how to handle that.

First, I'm going to give you guys some background, and so the space industry is most active in this region, mainly off of Florida's east coast, and the main big players we have are, of course, SpaceX, which you should have heard of, Space Florida, which we got a presentation from a little over a year ago, NASA, of course, and Space Force.

Now, there are other groups that are in, specifically the Cape Canaveral area. There are other groups, like Blue Origin, but they're not as big of players, or at least I haven't interacted with them as much as these four, which is on a lot basis right now.

Since 2003, we have received two presentations from Space Florida. We have submitted a FOIA, and we have sent in multiple comment letters on different proposed activities, and so, like I said, the goal, from this presentation, is to try and determine what the impacts of these activities are on habitats and fisheries and how can the council address these issues.

So, for those who don't remember, in June of 2023, the council received a Space Florida presentation, that then came to us in November of 2023, and, basically, the summary of that was that there were ninety launches in 2023. That has since grown, I mean, by double in 2024, and 85 percent of these launches are commercial. They are not government. It's private commercial stuff.

Currently, there's no consideration for debris or landing zones for EFH. Space Florida specifically was the one giving the presentation. They are aware of Indian River Lagoon issues, i.e., discharge and development. They are aware that there are debris from explosions and failed launches in the water. That's it. That was all the information that the guy could give us, and so the council submitted a FOIA, and here's the timeline for this FOIA.

On October 3, we submitted this, requesting frequency and duration of the closures and space-related activity for ten years. Pretty generic. The United States Coast Guard responded saying that that was a little bit too broad. They would be the people that were recommended for us to contact, that they would have all this information, and so we resubmitted, with some revised

language that we got covered with our General Counsel, that was a little bit more specific with dates and a little bit more specific of exactly what we were requesting.

Then, from December 2023 to April 2025, there were numerous follow-ups, and, when I say there were numerous follow-ups, I mean, I am a younger sister. When I want to be annoying, I can be, and I was very annoying, and I got six different people that I was sent to, that ultimately informed me that the FOIA has been submitted. They are working on it, but no information was provided.

Then again they requested a resubmission, with more specific language. We submitted that approved language again, since it had gone through our lawyer, since it was more specific, and we still have no information, as of June 30 of this year, and so that's a little under two years of chasing down a FOIA, to the people that we're supposed to go to, with specific language of exactly what we need, and we have received nothing from that, but we have submitted comment letters on the space industry.

The comment letter process is, if a space program, or, generally, if a program, or a development, sends out a request for comments, the South Atlantic Council can do so. Specifically with space, the Department of Air Force develops an environmental assessment, or an EIS, and then they send out a, hey, please submit your comments. Council staff develops the comment letter, that is later approved by the council chair, which is currently Trish, and that proposed body then is supposed to integrate the comments, and then moves to whatever the next step is on the development of this proposal.

We have submitted two comment letters, as of now, regarding space stuff. The first one was March of 2024. This was specifically commenting on the super heavy operations at Cape Canaveral, the EIS for a new launch facility. They were proposing multiple launch facilities, and then they came up with a proposed this is the best one. The purpose of the EIS, as it says here, is to advance U.S. space capabilities, to help with the necessary capabilities of launching and inserting payloads into space, and to improving access.

The gist of our comment letter was that fishery resources need to be included in the EIS. Social and economic impacts need to be analyzed specifically for the fishery. These spatially launch complex locations are in proximity to our designated EFH, and so that needs to be taken into account.

Again, discussing debris, this debris associated with space activities could pose a hazard. Analysis should include economic impacts of closures of the hazard zones, is what they call them. Whenever a rocket launch is announced, they have to announce it ahead of time, and then they have to announce the hazard zone, or the closure zone, and this can change on a daily basis, depending on weather, and what rocket is being launched, and what direction it's being launched off, and where it's trying to go. Then we also suggested the EIS should include a description of the cumulative impacts on benthic and pelagic habitats.

Then the second comment letter, and I was involved in the writing of this one. The other one I was not. This was the next step. Like I said, you submit a comment letter, and they're supposed to integrate it, and then you move on to the next step, and so this step was they've already picked out a landing zone, but now they're bringing forward that landing zone as proposed, as well as then

proposing a new permit that will increase the amount of launches that they're allowed to do, and so this is still for Cape Canaveral. This is basically a continuation of the previous one.

Our letter highlights were a lot of similarities to the previous one. We need long-term mitigation plans for waterways, because of pollutants. We need to look into the climate change impacts that will occur from increasing your rocket launches. For this one, they were proposing to increase from fifty to close to a hundred, I believe, and so doubling rocket launches, and then there's really no mitigation mentioned in this proposal for EFH, for fisheries, for fishing communities. There's no discussion of half-life pollutants or bioaccumulation.

A lot -- In this proposal, there was a huge lean on the ocean is big, and the atmosphere is vast. These rocket launches will not have an impact, because all of that stuff mixes together, and so it's okay, and then there was no analysis on direct or indirect impacts on fishing communities, and, of course, then, if you're going to close these large zones, you need to let us know ahead of time, so, that way, fishermen can try and change their fishing , if possible.

Now, since I have put this briefing book online, a new EIS was released for public comment. I have reviewed that. Our comment letter is going to include a lot of what's on here right now, of an emphasis of increasing it from -- I believe the fifty was in this comment letter, but now, in the new EIS, they are suggesting it's going to be 244 launches and landings, annually, is their proposal, not including launches and landings that may be canceled, because of weather, or because of issues happening with technology, and so that's their current proposal, which is a pretty large impact.

We, in the comment letter, are most likely going to mention that dramatic increase. We are going to mention, again, the pollutants and the runoff in their proposal. They're also suggesting widening of the runways, or of the roadways, to this new landing zone, that is going to have a large 100-acre impact on the development in this area, and so we're going to be talking about that. We're going to be talking about, again, mitigation for fishermen, and so, back to what we were talking about before with rock shrimp fishermen, the rock shrimp are pretty specific on where they are off of Cape Canaveral.

This fishery is pretty specific about where it needs to be able to fish, and, if you're going to be closing 244 days out of the year, the rock shrimp fishermen need some kind of mitigation somewhere in there, and so all of that is going to be included in our new letter. I have not gotten that finalized, but that's the general gist. Honestly, it's going to be a lot of what you see here, but just reiterated again.

So, with that, the summary is this. Space activities have become increasingly talked about. They're having very large impacts on our habitats and our fisheries, specifically off the east coast of Florida, with those closures, at this amount, and I don't foresee this slowing down.

A former council member gave me a call, because she knew we were talking about this, and, in her call, she said, space is king in Florida. I don't see it slowing down. I see it just getting bigger, and the area that they have chosen to develop is the Indian River Lagoon. It is Okeechobee Lake. It's that exact area that we're talking about with the flow policy, and the issue I'm running into is that gathering information on the impacts of the space industry is difficult.

I can get these EISs, but, again, in the previous one, that we have already submitted a comment letter, as far as they're concerned, the atmosphere is big enough that we can send out rocket launches all we want. In the current EIS that we are commenting on, they did not determine that the amount of greenhouse gases released from 244 launches and landings will be a large enough impact, because it's a small percentage of what the United States produces, and so I'm going to ask all of you guys for help.

Is there someone that you could recommend, or suggest, for me to contact to be able to gather this data, specifically launch number, closure number, or, very specific to us, where this debris has landed, and what is it made of, because we don't know, and, as I'm requesting it, they're not willing to share, and so do you know of somebody I can reach out to, that we can then look at the impacts that this is having on surrounding EFH, on habitat, and is there something that's in the water that would be toxic? I'm thinking long-term rockets that were sent out before, and, you know, we knew asbestos caused cancer. Is that in the water right now? I feel like it probably is. We have Cameron.

MR. LUCK: I don't have a recommendation, but I'm curious. As part of these projects, in the EA submittals and circulations for comments, there should have been comment provided, or a view done, at the state level. Do you have access to the state's comments, Florida's comments, on this? You would have seen resource agency comments, or the federal consistency if it was outside of Florida's coastal area.

MS. CROWE: I'll jump in and say they may not be available online, but, if you had a contact, they should be able to share their letter with you.

MS. HOWINGTON: I should be able to do a quick search of the previous public comment that we submitted and see. They should be public. Like, I mean, the South Atlantic Council is searchable on that, and I can do a quick search in a sec, but, Matt, do you know if Florida has submitted anything?

DR. JOHNSON: I know that the commenting group was working on comments. This is to the environmental assessment. I do not know where that stands specifically, but I think they have submitted comments.

MS. HOWINGTON: Okay.

DR. JOHNSON: They're also waiting on -- There's the wharf study project, which I know is on your radar, I think.

MS. HOWINGTON: Yes.

DR. JOHNSON: I know Florida is waiting on the ecological assessment to run its course, and then they're going to comment on the wharf expansion specific thing that's going on, too.

MS. HOWINGTON: I also know there's a biological opinion that is being worked on, but I wouldn't be able to tell you exact parties. I know that's ongoing. We have not been -- They have not reached out to us for comment on that.

DR. JOHNSON: I just wanted to add that, since a lot of these facilities have been there for a while, that there may have been older EAs and old comments. This is, obviously, growing today, but it has existed for a while, and so that might be a good place to start, just to see what is in Florida's repository.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair. The same thing should apply for the U.S. Fish and Wildlife Service. They should have submitted comments, because Merritt Island National Wildlife Refuge is an overlay over the Cape, and so there should be some sort of communication from the Fish and Wildlife Service to whoever is doing the EIS.

Now, I say there should be. I think most of you are well aware of the impact of early retirements, and I'll be kind, but early retirements on the Fish and Wildlife Service, and I don't know specifically how Florida facilities have been impacted. North Carolina facilities have been extremely hard hit. We now have, from my most recent understanding, thirteen staff for managing nine national wildlife refuges in northeastern North Carolina now.

Do the math but I think we should at least ask them, Kathleen, and I can help to look into the literature there, and the administrative record, and there should be copies of publicly available comments on the EISs, although, you know, it's entirely possible that the staff would have said, hey, you know, we don't have the capacity to do it, and so we're not, but they should have done Section 7 consultations as well for any listed species.

There's -- Isn't the Florida scrub jay listed? It occurs on the Cape, you know, at Merritt Island there, and so I would think that there's some administrative record there that would detail what the Fish and Wildlife Service thought about potential impacts.

MS. CROWE: Scott, you can go ahead.

MR. KATHEY: Scott Kathey, with National Marine Sanctuaries. A question and a couple of comments. Has the fishery management council's legal counsel said anything about the time clock for FOIA, or are they -- By asking for you to repackage your request, are they basically restarting the clock every time, because usually FOIA requests, under that -- You know, under FOIA, you have to respond within like 180 days, and you can't stonewall forever, and somehow they've been getting away with this for two years, and so has your general counsel looked at potential FOIA violations already, or are they sidestepping those?

MS. HOWINGTON: So you are correct that -- When I did talk with General Counsel, when we resubmitted the first time, that was then considered they were communicating with us, and were not required to communicate anymore. I don't -- From my talk with General Counsel, I don't think that we have another way of -- Other than continuing to pester them, which, again, I'm very good at, and I just put them on my calendar. I was calling everyone at least once a week.

MR. KATHEY: Yes.

MS. HOWINGTON: But I don't think it's getting me anywhere, other than on their I don't like you list.

MR. KATHEY: Okay.

MS. HOWINGTON: So that's the reason why I came to this group. Is there someone else I can talk to that isn't the United States Coast Guard? Is there someone else that we think is not making comment letters, but gathering data, or has been tracking data?

MR. KATHEY: Right.

MS. HOWINGTON: Is the National Weather Service tracking these closures, or anyone that we think I could reach out to?

MR. KATHEY: Well, you're also looking for some assessment of impacts from spent fuel cells, and detonated rockets that have to abort the launch, and you may want to check with California state records for Vandenberg Air Force Base, because that's essentially Cape Canaveral west, and the state of California is very aggressive about doing environmental assessments of federal activities out there, and they have their own version of NEPA, called CEQA, California Environmental Policy Act, or Quality Act.

You may find some records, through the State of California, that would at least describe the types of hazards and pollutants that come from space debris, and maybe even the kinetic impacts as well, and so that's one place you might find records, that are far from Florida, but would still have a relevant bearing on what you're trying to find out, as far as impacts to marine systems or concerns. You may want to investigate that.

Then, also, when they have to abort a launch, because the rocket is going squirrelly, or something is going wrong, and they detonate the vehicle, now you've got a lot of solid propellant, that has not been spent, and these are solid fuel rockets, and so this stuff comes down, and it's -- You know, it's kind of this gelatinous type of material, and I suspect it's highly toxic, but it's in concentrated form, and, when they detonate that rocket, it just scatters this stuff, big chunks going into the water, and that would be something worth trying to determine, if you can ever get any records, is how many failed launches have they had, where they've had to detonate these, and at what altitude, you know, and what was the fallout zone, that type of thing.

That might be the type of records you might -- If you can't get them here, you might be able to get them through the operations out at Vandenberg. There may be more records on the state side that you could access, and you shouldn't have the same kind of stonewalling from the State of California that you're going to get from the Air Force or the Coast Guard.

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

MS. BUSCH: Yes. Along those lines, if you're looking for Vandenberg, they do have to get MMPA permits for their launches, because they impact pinnipeds when they go, when those launches take off, and so they do have an MMPA permit, and they have an EA for those launches, that you can get online, that would maybe help explain what the rockets are.

MS. CROWE: Kathleen, I'm just going to suggest just a thought. Have you reached out to any of the oceanographic institutions on the central coast, like Harbor Branch or Florida Tech or anything

like that, that maybe someone has had a grad student who has done some work looking into any of those questions, or that might be grasping at straws, but it might be worth asking. Okay. Straws. Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. Yes, and I was going to suggest that same thing, and maybe Dr. Cherubin might have some information there, Laurent, you know, since he's on the HEAP anyway. The other thing I was going to ask, Kathleen, was, in the council's previous communications to the federal action agencies there, have we provided them with any maps, for example, of the areas that would be of concern to specific fisheries, like the rock shrimp guys, for example?

It's a great point that you've got, you know, 244 closures per year now proposed, and so I would think that if we, and we being the council in this case, would proactively say, you know, hey, we're concerned about these particular specific areas, then maybe that might facilitate some sort of a response to the FOIA.

MS. HOWINGTON: I didn't in my first comment letter, but I can in this one, and so, I mean, I have those maps, and I could also try and put in snapper grouper EFH, and specifically look at Cape Canaveral. The same thing with coastal migratory pelagics, and the same with dolphin wahoo. Let's hit all of our big ones, and zoom-in on our EFH map and say, look, you are surrounded by important habitat, and please add in water quality mitigation, and water flow mitigation, if you can.

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

MS. HOWINGTON: I can reach out to them, and then, since you mentioned this, just as a heads-up to everyone, one of the other things that we should probably discuss is the fact that the International Space Station is planned to be de-orbited as well into the Pacific, if you all don't remember, and Space Florida gave us that presentation.

When we asked him what about impacts to water, he said that it was deep enough that it would be fine. If you don't remember that response, I do, and so maybe Point Nemo could be something we could reach out to. I would be, I would wonder if we would run into the same problem of the willingness to share information, but I'm willing.

AP MEMBER: I just did a quick search, and it looks like, two weeks ago, there was a literature review published about, specifically in Indian River Lagoon, the impact of some of the pollutants coming from space travel. I don't know this author. It looks like they're from Canada, but I'll send the link, and they at least could have a lot of really good citations to help support the next letter.

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

AP MEMBER: I just read the abstract. I can't speak to the contents of the paper.

AP MEMBER: I was doing the same thing, just Googling, and there's -- One of the cities down there authorized -- A city council authorized a rocket launch impact study with Florida Tech, and so maybe they're one, but yes, and that was just my thought, and does anybody know? Is there a -- Like we have 100 miles in Georgia, and they keep things pretty straight. They're an

environmental organization that does a lot of things. Is there any kind of group like that down there, around there that you think would be -- Like Coast Keeper, or River Keeper, somebody that's dipped in water? Somebody? I don't know.

MS. HOWINGTON: Maybe Coastal Conservation. I know that I've been in touch with, like Matt said, the Indian River Lagoon Council. I've been in touch with the Everglades Restoration Project, but I've mentioned space stuff to them, and they've mentioned it to me, but they -- I don't believe that they have an amalgamation of data.

MS. CROWE: Does Southern Environmental Law practice in Florida as well?

MS. HOWINGTON: Maybe.

DR. LANEY: I was going to mention Southern Environmental Law Center. They -- It would be worth at least checking with them, to ask about their interest and/or any information they may have uncovered, because, when they send letters to people, usually people respond. They're motivated to do so, because they can --

MS. CROWE: That might be another way to advance your FOIA request as well.

DR. LANEY: Yes, and the other thing I was wondering, Madam Chair, is do any of us, you know, know any retired space people, that we could tap into here, that might be able to give us some insight?

MS. CROWE: Paula, I'll go ahead.

MS. KEENER: So, years ago, when NOAA's Office of Ocean Exploration and Research was just getting started, we held a joint conference, and I believe it was called the Link Symposium, down in Florida, to look at space exploration, technologies that were used, challenges, lessons learned, to just collaborate for ocean exploration. We could probably go back and find out who those contacts were. For some reason, Eric Lindstrom -- Do you guys know Eric Lindstrom? I don't think he's retired, but he worked for NASA, and so Eric might be a really good contact.

MS. HOWINGTON: Great contacts. I can move forward, and so that's the first question. The second question then is -- So I can go out and I can follow-up with all of these. I can try and gain any kind of data, or information we had, on launches, closures, economic impacts, debris, pollutants, and like all of these things are things that we care about, that especially impacts this area of Florida, but then how do we recommend that the council further the goal of protecting EFH, considering this increase in space industry and considering this lack of slowing down at all?

AP MEMBER: So, Kathleen, just on the topic of debris, and, you know, the potential habitat that it creates, I wonder if there are anglers in the area -- I'm sure there's nobody that has a full understanding of and catalog of what's out there, but I just -- I would be curious to know if anybody would say, oh yeah, some of our best spots we've dropped a GoPro on, and it's clearly space debris, or whatever.

A lot of times when people find artificial structure, they are curious, and they find out what it is that they're fishing on, either by, you know, jumping out with a snorkel, or a scuba tank, or they

drop a GoPro or whatever, and so I don't know if that's a function that the council could do, the Snapper Grouper AP, or, you know, a call for public comment or whatever, but I would curious to know if there's anybody out there that would volunteer that information, just so we could help formulate our understanding of how the fishery might be interacting with this type of debris.

MS. HOWINGTON: As long as we promise not to share the location with anyone else.

AP MEMBER: We don't want to ask for coordinates, but just to know.

MS. HOWINGTON: I'll take a grid location.

MS. CROWE: Paula.

MS. KEENER: Thanks. Again, just doing a search, there is information online about shrimpers off Florida catching space debris in their nets. You know, Kathleen, getting back to your question, though, one of the things, again, that I saw online just now, is that this Point Nemo was selected because it is so remote, and the currents are not great around that area, and so I would be interested in looking at why was Point Nemo selected? What were the reasons that it was selected, and then that would help, I think, inform the questions of, you know, or the points to consider, at least initially around the issues related to space debris. I don't know.

MS. HOWINGTON: I mean, while we're talking about that, why was Cape Canaveral selected initially, way back in the day? Why the east coast of Florida wetlands, other than cheap property?

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

MS. HOWINGTON: You think orbits and angles? All right, but, yes, and so why was that point considered? Why is that location considered ideal, and then why -- Compare it to Cape Canaveral, but, again, I go back to we get all this information, and what can the council do? What do we recommend, because this information -- Just sitting on it doesn't seem like a good idea.

We could -- Again, I'm writing as many comment letters as, you know, is requested, and I think that they're pretty strongly worded. Do we recommend that the council try to investigate writing up a policy, or do we just recommend that the council maintain its position of writing up comment letters and submitting them whenever possible? Do we want to try and go further? Like I'm literally just asking, and what do you guys think? Where does the council have teeth? What would you recommend the council do to try and emphasize that we don't necessarily see the impacts on EFH to be positive?

MS. KEENER: You mentioned the word "teeth", and, you know, that's -- A policy is going to have teeth and so, you know, these letters are good, but they're letters, and so I think, given the fact that the space industry is projected to expand, and given the fact that we know very little about the environmental impact, I would recommend that maybe even the council establish a working group to move forward with this, and that we be aggressive about it, or not -- I mean, I know it's difficult to be aggressive in this fiscal environment, but that we tackle it, and we address it, and we embrace it. Thanks.

MS. HOWINGTON: This would, of course, be post gathering of data, and analyzing it. I can't -- I mean, we're not going to develop a policy right now. I can totally write something up, but it's not going to have any numbers in it, but would the AP recommend, with the successful gathering of information on launch debris, launch zones, closures, the establishment of a working group? Would you recommend it be just this AP, or would you recommend it be an ad hoc across APs working group?

AP MEMBER: If multi AP, let's just go down that path. What other APs would be involved? Snapper Grouper, Dolphin Wahoo, and maybe --

MS. HOWINGTON: The Socioeconomic Panel would be the one I would want to rely on, and then the SSC will be the one that I want to pass any kind of analysis to, to making certain we're getting that, but the closures have an economic impact, and that's one of the issues I've been running into with writing up these letters, is I'm not an economist. I'm aware that they have these impacts, but I would want to go to an economist and say, all right, rock shrimp fishermen, and there are thirteen of them. If we close down this area for 244 days, what's the impact going to be on the marinas, on the tackle shops, on the -- Not just the fishermen.

MS. CROWE: David, go ahead.

MR. WHITAKER: I expect the biggest impact, or one of the big impacts, is on the rock shrimp fishery, not only the closures, but the potentially tearing of nets and damaging of gear while trawling, but it occurs to me that perhaps they have talked to their marine extension people, the University of Florida, and that they have -- It may have been told, you know, that this is the golden goose, and don't bother, but I expect that that's a real problem down there. I was just looking, real quickly, and the popular press seems to be -- In the last two or three months, there are several articles about shrimpers complaining about catching debris. I presume they would be damaging gear, also. That might be an avenue.

MS. CROWE: Paula, go ahead.

MS. KEENER: I'll just add that, you know, thinking about policies, and I'm thinking about the renewable energy policy that we've just worked so hard and long on. You know, that's a policy addressing inner space. There is no reason why we should not look at what is happening in outer space, and the effect that it has on inner space, and so --

MS. CROWE: Cameron.

MR. LUCK: I don't know why I didn't think about this sooner, but maybe a model for how we address this, at least in North Carolina -- My experience is bombing ranges expanding. There's several in North Carolina that are massive, and growing, as ordinances -- Ordinances that are used are increasing in size, and those radiuses are permanent closures to water bodies. The Swan Island area, and Pamlico Sound, and the Turnagain Bay area, and that all first comes to mind, and there's an expectation that's going to expand further, and so there's commercial fisheries that rely on those areas, and will be closed.

That, at least in North Carolina, gets captured when the EA is sent out for federal consistency review, and then we would put it out for public comment, and we get feedback that way, but that

-- To me, it sounds like a very similar sort of model, or situation, to what we're talking about here, where you have these, in this case, temporary closures, but may eventually be a permanent closure. There's, you know, unique materials, that are not normally found in the water, that will end up in the water, and it's tied to a military operation of some sort, and so maybe there's something to learn from there, as part of approaching the future of space.

MS. HOWINGTON: Another thing, and wasn't there -- There were at least whispers of a potential development in North Carolina of a space launch area. Am I making that up, or was that something that did occur? I vaguely remember it.

MS. CROWE: Wilson.

DR. LANEY: Well, what I was going to -- I'm not speaking to that. What I was going to ask Cameron is there were historical rocket, military rocket, facilities in North Carolina. You know, all those weird looking square buildings on Topsail Island were part of the monitoring system for that rocket range. This was way back, in the 1940s, or maybe even the late 1930s, and I don't know, and it was like World War II stuff, and so probably not at all relevant today, but the other one, that may be relevant is Wallops Island, Virginia, you know, and Brendan does work up there, in the Virginia neck of the woods, and so maybe we could ask our Virginia colleagues. You know, I don't know what they've done, if anything, up there, and I don't know who they're talking to either.

DR. RUNDE: I don't know either, Wilson, but some of my close colleagues work just south of Wallops, on the eastern shore of Virginia. I can ask them for their perspective.

MS. CROWE: Just along those same lines, there's also SpaceX South Padre Island in Texas. You might check that one out, too. Go ahead, Paul.

MR. MEDDERS: I was going to mention, Kathleen, because you said that, and we had, in Camden County, which is the southernmost county in Georgia, right by Cumberland Island National Seashore, and they were building a spaceport. The community stopped it. They were building a spaceport there, and that's why I say Canaveral, of where it is on the coast, because they made the point of where -- In Camden County, where that was going to be, it's right on the coast, and it was similar to Cape Canaveral, and they were making all those points.

They were making the point that all those launches went over Cumberland Island, which is the National Seashore, which is not populated, and we ran into some of those same issues of -- A smaller scale, but fishing grounds, with local charter fishermen and things like that, but it was just -- That was kind of where that thought came from, with why the east coast, and why south. I think the county messed that whole thing up, and it got stopped,

MS. HOWINGTON: You have how many miles off the coast?

MR. MEDDERS: 100 miles, we say.

AP MEMBER: I was going to circle back to just your question about whether it be multiple APs or single AP, and I think it's best to do it from a multiple AP perspective. I think the environmental impacts -- I think it would be great to dig into some of those resources, and connect with some of

those academic institutions, to see if we can compile some data, because I feel like we might have a little bit of data limitation on this topic to back some of these things.

Not that they're not true, but we've got to keep that in mind, but we do have a very strong point of, or knowledge about, the economic impact of the fishing community, and that's something that I think, you know, can be some teeth in this, but I think we definitely need to dig a little bit deeper, to get some of that strong environmental data, and I'm struggling to remember off the top of my head, but there is some new water quality monitoring observation networks in the lagoon. I can go back and look those up, and they might be some good resources for diving into the water quality topic.

MS. HOWINGTON: Yes, and I can reach out to Daniel and also ask about that.

MS. CROWE: Go ahead, Trish.

MS. MURPHEY: I was just going to let you guys know I went to FIT, and my old benthic professor is still there, and so I just emailed him and asked him if he knew of any work, or has done any work, and so I'll let you know if I hear from him, but he's still there, and so, anyway, I'll let you know if I hear anything.

MS. CROWE: Wilson, go ahead.

DR. LANEY: This is sort of a personal observation. Am I the only council member who was actually fishing in the Indian River Lagoon during a SpaceX launch, which I was totally surprised by, and it was one of those deals where we heard this huge roar, and then we see this big rocket going up, and we actually had to text our spouses and say what the heck is going on, and we didn't know a thing about this. We were totally absorbed in fishing, and so there is recreational angling going on, I guess in the open portions of the lagoon, but it certainly affects the aesthetic quality of angling, if there's a rocket launch going on while you're out there trying to enjoy your recreational fishing experience.

MS. HOWINGTON: That's another thing that they've included in the environmental assessment, and in the environmental impact study, two separate things, is the vibrations, and the sound, is one of the few things that they consider a significant impact. Of course then, in the EA, when they address the vibrations and the sound, and they addressed impacts on biological -- Like fish, whales, anything like that, they suggested that, because, most of the time, all of these animals are underwater, it's not going to have any impact, but then they didn't look into any impact on fishermen, for sonic booms, or continuous launches, and hearing that, and vibration impact on hearing loss, if they are in areas that are hazard zones and they're not aware of it.

In the last comment letter, and probably in this one, we emphasized that the notice to mariners needs to be released early, ahead of time, and released to law enforcement, and spread the word, and so, that way, fishermen are not on a canal when a rocket launch goes off, and they don't know what's going on.

That's where then we also end up with a problem of we don't have as much of a commercial fishery as other regions, like in California. We are mostly recreational. If these guys are not listening to a radio, the chances that they're going to notice -- I mean, unless there's an app that does a push

notification to their phone, the chances that they're going to get a notice from mariners is pretty low.

They have to be actively looking for it, which means they have to be on the water every day. For like me, I'm going out -- I have three kids. I'm going out on the water once a month. I'm not going to remember to do that, you know, and so it's a safety issue as well of, if a rocket launch fails, and if a fisherman is in that area, and it's not being properly enforced, and the notice to mariners never got to them, they could get hurt. Now, that's a lot of ifs, but you can tell I'm a little -- A little wound up on wanting to do something.

Okay, and so you've given me a lot of contacts. Does the group, and this is an official I would like eyes behind it, recommend, post the gathering of data from sources, to the council that a multi-AP group should be convened to try and develop a policy on space development in the South Atlantic region? Again, post data, post me bringing it back to you, and so not this meeting, and probably not the next one, but the next summer. If I can bring you guys some relevant data for launches and closures, do we feel comfortable saying we're probably going to make this recommendation? Okay. I will write it up that way, with that level of caution.

AP MEMBER: Kathleen, I just wanted to ask, and would there be, implicit or explicit in that group, the idea that it would be fully, or even mostly comprised, of Florida representatives? Does that matter at all?

MS. HOWINGTON: I think this is weird. It's the South Atlantic Council, and it shouldn't be mostly Florida representatives, although those are going to be people who are mostly impacted, and they're going to be the people I'm going to reach out to to be subject matter experts, but this should be for the South Atlantic region. This should be able to cover Georgia, in case there's some kind of landing zone, or, if they go to North Carolina, and then try to reestablish space exploration from North Carolina, and I think it should apply to all of it, and not just Florida.

On top of that, with the water quality, and the pollutants that we've been discussing, and this goes back to what the Space Florida guy said, and, well, as long as it's over here, it doesn't impact you guys, and all water is connected. All of it. You can put it in a plastic container, and it's going to evaporate, and it's going to impact the ocean, okay, and so we just need to make it region-wide. I'll even probably reach out to the Virginia people. I know my habitat connection up there. I'll reach out to the Mid-Atlantic Council, and the Northeast Council, and ask if they've looked into it.

Now, unfortunately, I think, for the first time ever, the development is on our region first, and then it's going to move up North, versus like wind arms have been coming down South. I've been able to lean on them for language, and it's been real nice, and so I guess it's time to pay it forward, or pay it north. All right. Well, it's only 4:00, but a big thank you. I know that this is not -- Back to the joke I made earlier of when did you become an expert on space stuff, and in the last three months. Go ahead.

MS. MURPHEY: I just have a question. Has the Gulf been dealing with any of this, because don't they have --

MS. HOWINGTON: Do they? I mean, Texas does.

MS. MURPHEY: Yes, and so --

MS. HOWINGTON: I can reach out to them.

MS. MURPHEY: Yes, and I was thinking of Texas, and things landing in the Gulf, and so, I mean, I would think they might have some debris in the Gulf, too.

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

MS. HOWINGTON: But it is development, and the Texas launch facility is the one that's currently dealing with -- This is the other new development. It's called Starship Heavy. It's a new type of rocket, and so this is the rocket that gets launched, that then can return, which is why it's at 244, because it's launches and landings, and it's way bigger, and it's way louder, and so the Texas spaceports, or not spaceport, but space launch area -- If you go look at videos for that, it is very loud, which is why, again, they do admit that that is a significant impact. This vibration, sonic boom, noise is going to impact, and a lot of these launches are occurring at night. Okay. I feel good about that. Wilson.

DR. LANEY: I have a Fish and Wildlife Service contact in Texas. I can query about that as well, and then we should also ask Texas Parks and Wildlife folks, with respect to that one.

MS. HOWINGTON: I'll also ask my habitat equivalent in Texas if they have anything, or not in Texas, but in the Gulf area.

DR. LANEY: Yes, and I'll just remind us all that Dr. Lisa Havel, who was the habitat coordinator at ASMFC, now works for one of the National Estuary Programs in Texas, and so we might pull Lisa into the discussion as well. I think she might be a good contact.

MS. HOWINGTON: Havel?

DR. LANEY: Havel. Dr. Lisa Havel.

MS. HOWINGTON: Okay.

AP MEMBER: Do you try to connect with anybody at Florida DEP? I would recommend doing that, and I know the water management districts are connected to DEP, but I think there would also be other individuals in the main branch of the department that you could connect with.

MS. KEENER: Harbor Branch Oceanographic Institute with the -- Did we talk about that?

DR. LANEY: Well, Trish mentioned FIT, but, yes, Harbor Branch would be one as well.

MS. KEENER: Yes, and, with all of the submersible dives that they've done over the years, it would be interesting to know whether they have seen any space debris, and if they've kept a record of it, and I'm sure they did if they saw it, I would think.

MS. MURPHEY: I'm sorry, and I don't mean to be it, but here's -- I was just -- Anne also just said something about the Bahamas, having debris in the Bahamas, and I wonder if it's worth pulling the three councils together, as a bigger force in this discussion.

MS. HOWINGTON: Maybe longer term. I did, during the last EA, send the EA, and the proposal for comments, to the habitat equivalent at the Caribbean Council. I believe they submitted comment after that, but I don't -- We were communicating about it. I'm not seeing a comment letter, and so you can't quote me on that one, but the issue is that a lot of the landings are going to be taking in the Caribbean, and that is outside of my jurisdiction to comment on., and so that's why I sent that to her. They're planning on a lot of the re-entry facility is going to be over there.

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

MS. HOWINGTON: Maybe. Yes.

MS. CROWE: Paula and then, Cameron, did you have a comment? Did you have your hand up? Okay.

MS. KEENER: I think Trish's suggestion of pulling the three councils together is an excellent one. I mean, it's bigger teeth. It's not just the South Atlantic Fishery Management Council looking at this issue. It's the entire region, and I think that that would -- If I were sitting on the other side of the fence, that would be a reason that I would really pay attention, and respond.

MS. HOWINGTON: If I'm going to do that, I'm going to bring it to the CCC, most likely, because that's going to be the most efficient way to do it, and, bonus points, is the Habitat Working Group for the CCC is meeting this Thursday, and I'm supposed to give a quick verbal summary of this, and so I can mention it to them, to see if anyone would be interested. No?

AP MEMBER: Sorry, Wilson, and just a quick, silly question. Does ASMFC participate in the CCC, or no, because I think it would be important to include them here as well.

MS. HOWINGTON: The last meeting I organized, I had the ASMFC in there, and that was through the CCC, but I can't remember if that was a special invite or not, but, yes, they should be involved too. If we're involving all the councils, we need to involve them.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Well, I was just going to ask Trish and Paula for clarification, and so are the three councils you're talking about the South Atlantic, Caribbean, and Gulf, right? Okay. I just wanted to make sure I had that right, and, yes, I think it's a good idea to include the ASMFC, and, you know, specifically, the Habitat Committee, for sure.

MS. HOWINGTON: But, again, I would not just want to limit it to just the three councils. If we're going to go multi-council for this recommendation, which is an if, after I get the data, and this is all preliminary, and I would go to the CCC, because that would also include the Pacific and the Western Pacific, which I recognize -- Is it Nemo Point? Where are my notes?

That you were talking about, or Point Nemo, is in the Pacific, and it's far away from everyone, but I guarantee that those islands have an opinion about the International Space Station coming down, and so this could be something, again, once we get data, once the South Atlantic determines that, yes, we want to move forward, and get bigger, then it could be something that can be brought forth to CCC, which, for anyone who doesn't know, that's the Council Coordination Committee. That's all the councils. They get together and talk.

That could be potentially a way that we could try and, again, add teeth to this of, when you do this, you have to have mitigation. You have to contain the water. You have to maintain the water quality and flow regimes around the area that you're in, and you have to protect the EFH. You can't have a large economic impact on the fisheries, and like these are my big things, and I recognize that they're not the biggest impacts, and back to noise and vibration not being a huge impact because most of the fish I care about are underwater, but it is -- For us as a fisheries management council, these are big things, and they're being impacted, and I don't really -- Other than creating a policy, I don't see a way of stopping it, and I still don't see a way of stopping it. I see a way of slowing it.

MS. CROWE: Even though Nemo is international, there had to be some type of agreement, or document, or EA type thing that outlined concerns and mitigation or whatever. I mean, a quick search tells you why they said it was good, but I guarantee you that there was some entity that argued that, and so it might take some digging, but it's out there somewhere. Wilson.

DR. LANEY: Two questions slash thoughts. One is which group is it that has their boosters land back again? That's one of the ones we're talking about?

MS. HOWINGTON: Yes, and so, in the current EA that we are discussing, that is SpaceX specifically, and, specifically, the newest rocket that they have released, which will not be the one that takes off every single day, but the Starship Heavy is the one that I was talking about that is extremely loud, and has a much larger sound impact than the rockets before, and that's why they need the new landing zone, is the increased footage for these launches and landings.

DR. LANEY: Okay, and then a totally separate note. We talked about the fact that we liked the idea of at least polling all of the APs on this particular issue. Is there -- Do we have the thinking that some of them would be priority over others, and the reason I asked that is because we've talked about rock shrimp possibly being more affected by the closures than any of the other ones, but, I mean, is it worthwhile talking about priority, because I know the council is concerned about, you know, resources, and lack of resources in particular, these days, and so, if we had to prioritize, which APs would sort of be the ones that we envisioned most being involved in this, and are there others besides Deepwater Shrimp that we think should definitely be engaged?

MS. HOWINGTON: I would want to ask the council for their recommendations on who they think should be most engaged, but, personally, I'm getting the Coral AP up in there, but I'm also the Coral AP staff lead, and so a smidge bit biased, but I would think, again, we talk to -- We gather the data, and I bring it back to you guys, and we recommend multi-AP. We go to the council and say that we recommend we write up a policy, and we need, you know, one representative from any AP that you think is relevant.

I would recommend the shrimpers, the Coral, Snapper Grouper, because coral is EFH for snapper grouper, and I would recommend the SEP, and maybe the SSC as well, depending on what kind of data I get, and what analysis, and do I hit a wall, where it's past my expertise, or am I good to -- You know, I can figure out -- I can create a map on impacts, that kind of thing, and so I would want to get the council's recommendation. I wouldn't necessarily want to recommend it to them, but, if they ask me, that's the list I'm going to give them.

AP MEMBER: I know that there is a huge lack of resources, but, as we keep discussing this, I keep thinking that it could potentially be really huge, and I almost see, once the initial groundwork is done, some type of multi-day symposium to discuss the state of the science, if you will, and a path forward.

MS. HOWINGTON: If that's the case, I have two pathways where I could do that through the CCC. I have the Habitat Working Group. I'm also a member of the Area-Based Management Group. They haven't met in a while, but that's another potential one, and then, right now, there is a group that was built out of the climate change scenario planning that could potentially work. I used to be a member. Currently, Lara Klibansky is a member, but I'm going to become a member when she's finished with her contract, and so that's another group that we could utilize to try and create that, and two of those have ASMFC members on them, and so that would work out, I think. That is it, and that was the end of today's presentation. Wilson.

DR. LANEY: I was going to ask, Madam Chair, since it is still relatively early, if you wanted me to go ahead and briefly cover that Other Business item that I had asked about, and we could just go ahead and get that out of the way.

MS. CROWE: I think that sounds like a great idea. Go forth.

DR. LANEY: Okay, and so I will go for it, and so I think all of you should have received a copy of a message that I received from one Natalie van Hoose, on behalf of herself and Alyson Larson, who are two young women who are working to co-produce, co-direct, a documentary entitled “Reef Keepers”, that's all about three scientists, all Florida-based, who are working hard to conserve and restore corals in south Florida. If you took time to click on the links in Natalie's message, then you know everything I know.

I have continued my conversations with her. My role in this is partly professional, partly because of historical connections, because Natalie just happens to be the granddaughter of very dear friends of my parents, who were like surrogate parents for me when I was growing up in Sarasota, Florida, and her father is one Captain Rocky van Hoose, who is a recreational fishing guide working out of Merritt Island, and he was the one I was fishing with when the SpaceX went up back in June of 2022.

It was exciting to me to receive the message from Natalie, and I think what I have committed to do for her was to, one, make sure that everybody I knew that might have an interest in this particular issue, and in what they are trying to do, in terms of the publicity they hope to generate about the three scientists they're working with, one of whom is very familiar to the council, Ken Niedermeyer, and Ken has been involved in council work for many, many years.

One is to try and publicize what they're doing, and two is to provide connections to them that might lead to additional funding for their work. They need a substantial amount of money to finish the project, and so I put them in touch with folks in Florida. Matt was the recipient of one of the messages I sent out to all of my colleagues at the Florida Fish and Wildlife Conservation Commission.

Then, also, my colleague Manly Fuller, who now works for the North Carolina Wildlife Federation, was the executive director of the Florida Wildlife Federation for thirty years, in a previous incarnation, and Manly knows everybody in Florida, it seems like. Every time I ask him something, he always is way ahead of me on it, and so that's the gist of it, in a nutshell.

I think it's very exciting work. They have an excellent videographer that will be working with them to do the footage, and, if you all have any questions or anything, I would be happy to try and answer them, or refer them to Natalie and Alyson, as a matter of a fact, and I think that's all I needed to say about it. You all have the information. Again, if you have specific questions you want to pass along, that would be great.

The council, I will say, has already responded. Executive Director John Carmichael, who I also emailed about this, along with Trish and Dr. Collier, have already responded, and are going to schedule a webinar with Natalie and Alyson, and that won't take place until next year, because the schedule was already full for the rest of this year, and so, again, I think that's it, unless you all have specific questions.

I'm excited about the fact that they're doing it, and not just because of the topic, which is coral conservation and restoration, but also because, in this era, when there seems to be so much public skepticism about science, and scientists, the more we can do to promote the dedication, the passion, and the energy that these three individuals are showing for this particular problem, which is certainly climate-change related, I think, the better, and thank you for the time too, Madam Chair.

MS. KEENER: I just have one quick comment, Wilson. I agree, and I think it's wonderful. Thank you for supporting these young women in this endeavor to promote science. One of the things that I hope that this documentary would include is a discussion of, you know, what are the threats upcoming -- Present and upcoming threats to coral reefs, and possibly space debris could be part of that documentary.

DR. LANEY: That's a great point, Paula, and I think, if I remember correctly, I believe I included their email contact information, when I sent that out to everybody, and so feel free -- You know, I don't need to be an intermediary on this thing. Feel free to email and communicate directly to them.

MS. CROWE: All right. Thank you, Wilson. Go ahead, Kathleen. Five-minute break.

(Whereupon, a recess was taken.)

MS. CROWE: Okay. We are going to go ahead and hear about the habitat blueprint update from Kathleen today, and that will give us a little bit of breathing room, in case tomorrow's very full day runs over a little bit.

MS. HOWINGTON: So, like she said, this is going to be a quick update, and so, in December of 2023, the Habitat AP was actually restructured, and it was restructured underneath what we call the habitat blueprint, and so this established a new AP membership, which is why some of us have been here for forever and some of us are completely new.

It established also other to-do lists, and like the annual report was something that we have now integrated in. The Habitat AP workplan was something that we have now integrated in, that we've established, and we're not getting rid of it, and so these are things that were on the to-do list, and we only have a few more things left.

The first thing is the website update. The last time we met, one of the recommendations you made, after I had done a website update and updated the mapper and that kind of thing, is adding in partner links to the bottom of the website, and so, that way, we can easily connect with all the partners that we had, and then I started going -- I said, with great confidence, that I can do this, and I do have the ability to do this, but we have too many partners, and so this is a small sampling of what we have. This is not me going into like all of the different NOAA Fisheries offices that we lean on and communicate with on an annual basis, as Habitat AP members.

I have now asked you guys, and do we still want to add in links to the bottom? I still think it's a good idea, but how do we want to prioritize who the links are, and then how do we want it to look, and so these are two ways that we currently have on our website of adding in partner links. For example, the mackerel cobia port meetings planning team, this is all the links. It's just their pictures, but then, for partners and data resources with NOAA, then it's the links to all the different offices, and so you see how that's split out. It's less images. It's one image with all the different blue links. Two questions here. What partners do we link to the bottom of our website, and what do we want it to look like?

MS. CROWE: So let me ask you a quick question first. You cannot click on a logo and link to the partner?

MS. HOWINGTON: Oh no, and I can, and so this right here is all of these logos linked to the website.

MS. CROWE: Okay. So you can click directly.

MS. HOWINGTON: I can do that. The problem is that, when you get all of these, plus then all the subset offices, half of the webpage is going to be links, and now I'll put them under a dropdown. I can do that, and, if you want me to put every single partner link on there, with their images, I will do that as well. I will link to every single website. It just started to feel real cluttered.

MS. CROWE: Yes, and that's very cluttered right there. Paula first.

MS. KEENER: I've done a little bit of graphic stuff over the years. I would suggest, as a user, it would be very easy for me to find the partner that I wanted to if it was in alphabetical order, just with the name of the partner, and then you click on that link, and then you get the logo on your site and all that. I don't think I would mess with logos, unless you want to make the NOAA logo really huge, but, yes, and that's -- I wouldn't -- It would be difficult for me to just find out -- You

know, which one of those logos I wanted to click on. Of course, unless I knew it, you know, like --

MS. HOWINGTON: But then if you know the -- That's the reason why I put the images in there, is, because if you know the partner you're going to, why aren't you just going directly to them? That would be my question, and so I thought maybe the images were better, but maybe it is better to have like just the title, and a link, instead of having the images.

MS. KEENER: I think it's cleaner.

AP MEMBER: My question was more along the lines of why do we need to provide links? Along the same lines of what you just said, if someone knows they need to go to one of those websites, why don't they just go?

MS. CROWE: My only comment to that is to make sure that they go to the right place.

AP MEMBER: I do think there's a lot of value of having the links, partially because, if you're new to even learning around how the council works, it's good to know that there are all of these collaborative partners. I think I agree that you could keep it really simple with links, and not necessarily have the logo, but you could also break it up by category, and essentially have like a tiered list of academic, federal, state to just make it not a laundry list.

MS. KEENER: To go back to that question, I'm assuming this is the only place on the website that you see the full list of partners, correct?

MS. HOWINGTON: Yes.

MS. KEENER: So it tells you who the partners are and then -- Thanks.

MS. HOWINGTON: The only other place you could find the full list of partners would be one of my presentations where we discussed who our partners were, but okay, and so I will mock-up what that looks like, because, again, our partner list is huge. Organized in alphabetical order and split out academic, state, et cetera. I'll probably make it really similar to how we organize our panel. We have all of our states, and then we have our federal, NGOs, and then we have our academics, and, if they -- Well, I mean, they wouldn't overlap here. They overlap with the panel, and so I'll try and split it out like that. I'll try and make it alphabetical.

We'll just leave it as links to the websites, and not images, and I'll try and make that as concise as possible, where, when you hit the dropdown, it's not you're having to scroll, and so it will probably be in block form. Is that okay? Like maybe in like squares. I think I can make that work. I've done WordPress enough. Okay.

That is very helpful. I will come back to you in the winter to discuss that, and so then the last thing that we have on our blueprint list -- We had our website update, and hopefully this is the last piece of the website update, but then one of the things that the blueprint assigned us was to come up with an outreach and communication strategy.

We have discussed this before, of how do we want to do this? I had helped develop a habitat article that was released last year, through the council, of what is habitat, and what is EFH, and one of the things that we as a group recommended was developing FAQs.

I took, from that conversation, and I went to council staff, and I reached out to a few other people, of, when you think of what I do, what is your main question? Like I didn't just go to people who know habitat. I went to people who know nothing about habitat, and know me, and just asked them what do you think my job description is.

This is the series of questions that I have shrunk it down to for FAQs, and so please read through these. Do you think this hits at kind of the vibe we're going for for our FAQs, for our outreach communication strategy? Does this -- When I say Habitat and Ecosystem Advisory Panel FAQs, am I hitting on most of what you guys think confuses others? I'll give you a few seconds.

AP MEMBER: I really like this list. I also have a question. Do we currently, on the site, have a list of acronyms? Well, but I also mean like going -- If you're going into reports, and you're -- I mean, I'm constantly Googling acronyms.

MS. HOWINGTON: Right.

AP MEMBER: It would be cool to have just a little couple-page PDF.

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

AP MEMBER: It's on there?

MS. HOWINGTON: Well, we have one for the whole council. We do not have one for habitat and ecosystem stuff, but, at the end of the FAQs, we could do a page of acronyms, habitat acronyms, like any of the ones that I've used in the FAQ.

AP MEMBER: My suggestion would be to always -- In my graphic design website path, put it in one place, and link to it for many places, so you're not -- So, when something changes, or something gets added, you don't have to do it in three places, just for efficiency.

AP MEMBER: I would keep it with one list of acronyms, and link it, and if there are -- I don't know what -- What is CHAPC by the way?

MS. HOWINGTON: Coral habitat, and so, technically, they are separate. Now, the way the South Atlantic council has legally defined them, all coral habitat areas of particular concern are treated as habitat areas of particular concern. However, they are not supposed to be the same, and eventually we will tackle that, but we have enough on our plate right now, and so we're just going to leave it as is.

MS. CROWE: I think, on this page, you should write them out, and then put the acronym in parentheses, for the FAQ.

MS. HOWINGTON: I see Scott's hand, and yes, and so don't get hung up on the acronyms. I did put them in there to emphasize that people don't know what these are, and so they will be defined

in the FAQ, and so let's just focus mainly on the questions, and, with that, I'm going to call on Scott.

MR. KATHEY: Kathleen, I was just looking at the council's website the other day, and I was looking at pages that already kind of defined what EFH is, and what the jurisdiction that the council has is for EFH. For instance, who can be regulated under EFH? It's not everybody. It's mainly fishing interests, or fishers, out there, and so is this going to link to those pages, or is it just more of a, like you said, an FAQ kind of thing, that just answers them real quickly, and maybe punch them to one of these pages, if they want to dig deeper, and how is that going to be -- What's the architecture going to be on it?

MS. HOWINGTON: So, if you see here, that's then the next question, and so I've developed these frequently asked questions by going around and asking people, but then how do we want this information to be presented? Do we want this to be added to the website as copy? Do we want this just to be a PDF of printed material that you can link on, on specifically the habitat webpage? I don't control the rest of the council, but, on our webpage, we want just to be linked there, and then who else would be interested in this document that we could send it to that might be helpful? Go ahead.

MR. KATHEY: I'm just thinking that, you know, you're describing what is EFH, and why does it exist, and, I mean, it's a protective measure, and I think, somewhere in there, somewhere along the line, it needs to be just explained what the jurisdiction is, you know, what -- Basically, what the limits of the jurisdiction is for enforcing it.

MS. HOWINGTON: I can add both of those to the FAQ list.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair, and so I don't know that this needs to be part of it, but I'm hearkening back to our historical conversations on the ASMFC Habitat Committee, and the fact that, at one point in time, historically, you know, ASMFC was using the same definitions as NOAA for what they were calling HAPC and what amounted to EFH.

Then, as a result of Dr. Wilber's input, and concerns about trying to alleviate confusion, we switched to fish habitats of concern, but were still employing the same definitions, and so, again, I don't know that we need to even talk about that. It may be one of those things that, you know, if somebody -- If some stakeholder asks the question of, well, how does the council's EFH relate to the ASMFC's fish habitats of concern, you know, we could have a very short explanation in there. I'll just bring that up, just in case it might arise. I don't know that it rises to the level of significance that we need to proactively put it in there, but just to bring that to everybody's attention.

AP MEMBER: Wilson, I like that idea. I think that's -- Of the people who seek definitions of EFH, HAPC, et cetera, it's often a point of confusion how, if and how, FHOC interplays with EFH and HAPCs, and so I would -- Maybe a link to just kick it over to ASMFC. You know, if you're wondering about this other thing, that's not us.

MS. HOWINGTON: Well, then maybe it would be better -- Instead of having “define”, to say “compare” EFH, HAPC, CHAPC.

DR. LANEY: Yes, and one good place, where it's already manifesting itself, is in those wonderful letters that you keep sending to us that are coming out of the Atlantic branch of Habitat Conservation, where Pace Wilber and his staff are citing, you know, both sets of definitions. You know, they say, look, for the council-managed species, EFH applies, for the ASMFC-managed species, FHOC applies, and that's been in several of those recent letters that you have shared with us.

MS. CROWE: Paula.

MS. KEENER: So, when I look at this bulleted list, I'm not sure -- I mean, to me, it seems like it could be organized more effectively.

MS. HOWINGTON: Any suggestions you have - Again, this was me reaching out, and like what are the questions that everyone asks?

MS. KEENER: No, and, I mean, and so I'm asking. Is this in order of priority?

MS. HOWINGTON: No.

MS. KEENER: Okay, and I don't know how FAQs are organized, and so that's another -- I mean, I don't need to know that.

MS. HOWINGTON: I can take this to the Outreach and Communication AP and ask for input. That would be a group that I can reach out to. They are very good at -- They are not habitat and ecosystem scientists. Their entire thing is how do we communicate this information.

MS. KEENER: Right, and so I think one thing that should be included in this is -- I don't think, you know, Joe Smith, or Jane Smith, is going to know what the difference is between a habitat and an ecosystem, and so, right off the bat, there's going to be, you know, what's the difference, and so I think explaining that up front is really important.

MS. HOWINGTON: All right, and so does the AP feel comfortable with me trying to move forward with this and fill out questions, and maybe reorganize, and maybe take it to the OC AP, and bring you guys an actual document, or are you all hesitant? When you're looking at this, do you think this is not necessarily hitting on the questions that you wanted to be included in the FAQs, and I should try and get feedback from you now and start over? You can say start over. I didn't fill out the answers. I just went around and asked what are the questions.

MS. KEENER: I guess it's difficult. I'm sorry, and it's difficult for me to answer that question, because I don't know who these FAQs are developed for. Are they developed for just one single group of stakeholders, or, I mean, does it matter, or should it be targeted? I don't know, and so, if it should be targeted -- If the FAQs should be targeted, then who are they targeted to, and how -- They will be different, and so, to look at just this list, which I think is very good, but I don't know how to answer your question, because I don't know.

MS. HOWINGTON: Feedback from October was you all are more interested in just a general FAQ about habitat and ecosystem that could go to the general public, and so this was not -- One

of the questions I had was who is my audience, and it was very much the people who somehow make it to the habitat and ecosystem page, to try and explain what's going on, who are not going to know what EFH is, and they're going to need that defined.

MS. CROWE: Go ahead.

DR. LANEY: Thank you, Madam Chair, and so, Kathleen, it occurs to me too that other councils likely have dealt with this. Have you talked to -- I mean, this is another one of those things I would push to the CCC and say, hey guys, you know, we're talking about doing this, and have you all already done it, and, if so, what did you put up there?

MS. HOWINGTON: I can reach out to my other habitat council people. I think most FAQs are more council-related than they are habitat and ecosystem, but I'll ask around.

DR. LANEY: Because, I mean, I know people who are always trying to figure out, you know, okay, what EFH has been designated for which species, and where is it, and, you know, that's the question that people are asking me most often, is where can I go find a map of the EFH for summer flounder in North Carolina, and so, to the extent -- That gets to your very first question there of what is it, and maybe a question we should add there is where is it. After the what is it, where is it, and then why does it exist.

MS. HOWINGTON: Okay, and so it sounds like there's hesitance to move forward with this list of making this an FAQ, but it does sound like you all are still interested in developing an FAQ to go somewhere on the website, potentially with a small list of acronyms that apply just to us.

So, with the what is habitat versus ecosystem question, with the what is EFH, and where is it, and why does it exist questions, and then I'm going to argue that CHAPC and HAPC should be there, because we should at least have it defined on our webpage, and what other questions do you want, or do you want me to just take those two sets of questions and try and run and develop another list roughly around this size?

Okay, and so it seems like everyone likes the list, but it's hesitant to develop it further, and there's a little bit of back and forth, and so, with the idea of developing an FAQ for the general public, but somehow makes it to the habitat page, and just needs to have general knowledge, like what is habitat versus ecosystem, and what is, where is, and why does it exist for EFH, and go?

AP MEMBER: Yes, and maybe I'll just throw a direction at you, and you can do what you want with it.

MS. HOWINGTON: Thank you.

AP MEMBER: If you're, you know, a random individual who wants to learn more and ends up on the website, then the FAQ can essentially be a crash course that takes you from basically what is essential fish habitat, and why is it important, but then carries you through, you know, how is the South Atlantic involved, what types of habitat are considered EFH in the South Atlantic region, but, as you carry the individual through the FAQ, because they're naturally going to scroll down, provide links to information, you know, as part of an answer on the website, and take them to the places they need to go to learn more information, but the idea being, as you make your way down

the page, you get deeper and deeper into it, and learn more as you go, and so it's -- Whatever you do, make the FAQ linear. That would be my input.

AP MEMBER: Along those lines, I think -- I know I've searched EFH a lot on the internet, looking for a way to do a habitat assessment, and so, if it's going to kind of go that way, maybe lead them to do you need a habitat assessment, and then link them to where to go, and tell them how to make one of those. I think that would be helpful, because I think that may be a reason why people would be searching EFH.

AP MEMBER: Kathleen, maybe you can put on there a link to a pre-filled form to submit a FOIA request about space related activities.

MS. HOWINGTON: Look. If I wanted to play dirty, I could just use bots, okay, and I'm supposed to be following the rules. Okay, and so maybe kind of scrap this list and start with the questions that you all gave me earlier, and that is a little bit more generic. Try to start with why is EFH important, what habitats are involved with EFH, how is the council involved, with lots of links, and make it linear, and add in a little set of acronyms at the end. Then come back to you guys with a document that's along those lines. Sound good? Okay. I can do that. No guarantees I'll get it done before the next meeting. Anne, I saw your hand up. I'm sorry. Go ahead.

MS. DEATON: That's okay. Just one question I might add, and you have, what is it, and why does it exist, but what I would want to know is what does it do, and like how does EFH help fisheries, or something to get -- Or how does an EFH HAPC get designation and provide protection, or something to that effect. What it is, and why does it exist, and how can they designate it, and then, I mean, the answer is that it triggers the need for federal review and to avoid, minimize, and mitigate impacts to help sustain fisheries, and so I don't know.

AP MEMBER: That's part of the why does it exist, is it not? Wouldn't that be part of why it exists?

MS. HOWINGTON: It can be a subset.

MS. DEATON: Or what does it do, you know, what do these designations --

MS. HOWINGTON: Right.

MS. DEATON: Something like that.

MS. KEENER: I think you're speaking more towards the policy end of it, right, the regulatory end of it, and so, in addition to the three bullets that are there, I guess, what does it enable? Those aren't the right words, but I think -- Is that the direction that you're going?

MS. DEATON: Or maybe how does it help? How does it help fish and habitat? I mean, it doesn't matter, but, first, you've got to really kind of flesh out the text, and then you could change the question, to like just be more clear.

MS. HOWINGTON: But, like I said, I'll probably end up taking this to the OC AP. Once we get a draft of like the habitat people read this, and we're like, yes, those are good questions, we can take it to the OC AP, and they'll destroy it.

MS. DEATON: The outreach committee. Okay. Yes, and they probably --

MS. HOWINGTON: All right, and so, Scott, your hand is up. Is that leftover?

MR. KATHEY: Yes, it must be a leftover. I put it back down. It's showing on my menu is down.

MS. HOWINGTON: It happens. All right, and so I will take that feedback, and I will create a draft. I'll bring it to you guys. I am going to make this official announcement. Because we are now into the nitty-gritty of these tiny little blueprint details, we are officially no longer going to have a blueprint section on the AP workplan.

This is the last time, because now we have an outreach and communication section on the workplan, and that can include the website, and then the annual report is also on the workplan, and the workplan is the workplan. All of those things are part of the blueprint, and so, just officially, we will revisit this, potentially during the EFH five-year review, of is there anything that we can be doing to continue to improve outreach, and is there anything we can be doing more efficiently.

I think last time, like with the blueprint, the first time I presented, it was do we want to, you know, schedule policies, and how do we want to try and schedule who is in what seat, and it was a lot of like let's make certain that we're doing this as efficiently as possible, and so we can return to the blueprint later, but, as of right now, I think we've integrated everything it recommended, and we can move forward, and I just wanted to make that official, of you're not going to be seeing blueprint as much in all my language anymore, but it still exists, and we can return to it whenever you want. That's the last thing I had for this, and that gets us to 4:41, which I definitely can't slam anything in for fifteen minutes.

MS. CROWE: Okay, and so that concludes today, unless anyone has any last comments, questions, or concerns. Otherwise, we will adjourn for the day, and, tomorrow, we meet here at 8:30 a.m., and so it's an early start. We have a full day, until 4:30, and so I look forward to seeing everyone then. Have a good night.

(Whereupon, the meeting recessed on July 15, 2025.)

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JULY 16, 2025

WEDNESDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Doubletree by Hilton North Charleston Convention Center in North Charleston, South Carolina on July 16, 2025, and was called to order by Ms. Stacie Crowe.

MS. CROWE: Good morning, everyone. Welcome back to day two. Today, we are going to start, and probably spend most of the morning, on Habitat Conservation Division updates, and then some additional information, and so Anne Deaton is online, and she's going to get us started with a review of the HCD consultations for 2024.

MS. HOWINGTON: Anne, you should be getting a prompt to make yourself a presenter.

MS. DEATON: Just click on show?

MS. HOWINGTON: Yes, and then we'll troubleshoot our way through the rest. Okay, and so I'm seeing -- Your PowerPoint is minimized. It's the presenter view right now, and so you have two options. You can either, on the display settings on your PowerPoint, get rid of presenter view, or, on the GoToWebinar option, you can switch which screen you're showing, which should be underneath the show screen, or the sharing option, and there should be a which screen you're going to pick.

MS. DEATON: Okay, and so I'm going to try -- I'm on one, and so I'm going to try to claim to.

MS. HOWINGTON: There you go. Perfect.

MS. DEATON: You see it?

MS. HOWINGTON: Yes.

MS. DEATON: Yay. Okay. All right, and so I'll start. As Stacie said, I'm Anne Deaton, and I know many of you, because I was on the Habitat AP when I was with the North Carolina Division of Marine Fisheries, for many years, and so I've since taken a position with National Marine Fisheries Service Habitat Conservation Division in the South Atlantic, based at the Beaufort Lab in North Carolina.

I just wanted to say, unfortunately, Jordy Wolfe was the NMFS rep that was on the AP at your last meeting, and she was one of the probationary employees that was let go, for no reason of her own, and so we miss her, but I am happy to say that she's gotten a new position with South Carolina DNR, and she'll be working with red snapper, and so I'm back on for NMFS, and Kathleen asked me to go over the consultations this past year and some of the, you know, ongoing activities.

This is the region for the South Atlantic, which is only half of the SERO office. SERO includes the South Atlantic and the Gulf of Mexico, and so the staff are spread out strategically from North Carolina through Florida, and we also have staff in Puerto Rico and St. Croix.

They work on certain programs, like the fish passage, and we have coral conservation work, and then we have people that are more focused on EFH consultations, including myself, and then Pace Wilber is the branch chief. I will note that Fritz Rhode recently retired, like last month, and I know a lot of people know him, and so that position is vacant, and we have another position vacant there, and so that's understaffed, and we have a vacant position from the loss of Jordy for EFH consultation.

I'm going to go over the numbers for the fiscal year 2024, and so that would have been October through March of 2025, and so that's a full year. You can see we had 849 consultation requests received that past fiscal year, and so 2025, on that little table on the right, is lower, but it's not a complete year, 776.

Those numbers are pretty stable across the years, because it's, you know, limited by staff availability to review, as well as regulatory processes change, and so there can be a change, and then we don't receive certain applications, because something that was an IP is now a general permit, or things like that, but, from the pie chart, you can see purple is Florida, and they definitely receive the most, but they have the biggest shoreline, and that also includes through the Keys, and then that's followed by Georgia, with 187, South Carolina, with 134, and North Carolina, with 120, and even our small Puerto Rico and Virgin Islands get, for their size, a lot of projects.

This is where those projects occur, if you want to look at it spatially, and I've got this color-coded by the consultation outcomes, and so I did want to have a caveat that there is some QA/QC that's still needed on the lat and longs of these, and so we have the authority, at NMFS, to review permit applications due to the Magnuson-Stevens Act, which says the federal action agency must consult with NMFS when EFH may be adversely impacted, or affected.

We also have authority, under the Fish and Wildlife Conservation Act, that requires the federal action agencies to consult with NOAA Fisheries if the waters may be impounded or diverted, and so, basically, that would be our hydropower projects, and then, when you're looking at this, the colored dots represent the outcomes, and so, if EFH recommendations were made, it's a red dot. If they were Fish and Wildlife Coordination Act type recommendations, it's orange. If there's no objection, it's green. No staff is a light gray.

Technical assistance is when we are involved with meetings, and reviewing of materials, early on for larger projects, and so things like a port deepening project, and so that might not be officially comments, but a significant amount of time may be spent providing input, and that ends up minimizing the impacts of the project before you even get the application, hopefully.

If we do make conservation recommendations, the Corps is required to respond as to how much of that is going to be accepted, and so the applicant can fully or partially accept the recommendations, or they have to provide a reason why they can't, and so, on the map, these are the magenta dots, and so, when they respond, that's called a ten-day letter. If they don't accept all the recommendations, they usually have to offer mitigation. Some states don't have required mitigation, like mitigation banks, but I know, in Florida, they do, and so, if they don't do the entire consultation recommendations, they'll have to do a mitigation, or put money into a mitigation bank.

This is just where the projects have been in the lower part of our region, and so Florida, through the Keys, and then, on the side map there, Puerto Rico and the Virgin Islands. You see there's a lot of -- I see a lot of ten-day letters down in the Keys, which doesn't surprise me, and a lot of technical assistance.

Part of the point of this is we receive a lot of applications, and so, because of that, triage is usually necessary. You probably recognize this slide. I know I've seen it, before from presentations that Pace Wilber made, and this is sort of the thought process on when you would respond, and how you would respond, and so you consider how much habitat is available, and the ecological

importance of that habitat, and so for this example, at the bottom -- If you have a lot of habitat, and so there's a project and it might -- It's going to impact sand bottom.

We have sand bottom a lot, right, and it's only really used for foraging in that area. Then that would be near the bottom of that triangle, but, if there's less of a habitat, and it's used for a very critical function, like a nursery area or a spawning area, it's up toward the top of that triangle. Another way of looking at that is just considering the risk to the resource, the habitat resource, in combination with the value of the fish that would be impacted by that.

So, in this graph, a project with high risk to a resource, such as dredging through coral, and that is HAPC for snapper grouper, would be a high priority for review, and that would be the red box. In contrast, a project for a dock over the sandy bottom, that may not have any impacts, and so that would not be reviewed, and that's the green box, but then there are a lot of situations that are -- I should have made that gray, but they're yellow. Like, you know, you just have to evaluate, and review it, and decide if there are BMPs that could be requested, or how it could be modified to lower the risk to the resource.

Okay, and so now this is just looking at the same data, but I've removed all of the applications that we just didn't review, the no staffers, which is almost half of the applications we've received, but here you can see it's by state, at the bottom, and the outcomes, and, if we asked for conservation recommendations, that's red again. If it's non-conservation recommendations -- So sometimes we ask for -- We recommend changes, but the language is not as harsh, and so it's not required that they do it. It's more of a suggestion. That's orange.

If it's the Fish and Wildlife Coordination Act, it's yellow there, and no objections, you can see is the biggest one, and that's green, but I did want to point out that, just because it's no objection, that doesn't mean we didn't review it and spend time on it.

On this one, there were seventy projects that did have conservation recommendations, and technical assistance was on forty-five projects, but, the ones that were no comment, there could have been a scoping meeting, a pre-application meeting, where NMFS had the opportunity to provide input, and so the applicant makes changes to their design before we ever see it, and so that's good, because it just, you know, reduces the conflict, and it saves time for the applicant as well, and we've minimized the impacts early on.

I was also going to mention that I looked in -- So in this fiscal year, 2024, 73 percent of the conservation recommendations were partially or fully addressed, and so if they're not fully addressed, like they have to write that letter and say why, and sometimes that's it. They just can't, and sometimes they have to do mitigation for that part that they don't.

This is just a pie chart showing the type of projects that we received last year, and so docks and piers are, you know, the highest. They may not have been the most impactful though, and so it goes docks, we have development, shoreline stabilization, dredging, roads, bridges, marinas. Beach nourishment actually takes a lot of time, but it's not that many projects, if you look at that, and the flow would be the hydro projects. The larger-scale projects have potential for a greater amount of impacts, but the numerous small ones, like the docks and piers, they really can add up, and have a significant impact.

Another thing that our staff spent time on last year was offshore energy, and so, during the year, we were asked to participate on providing input on the Central Atlantic 2 call area for offshore wind energy. This is a very large area. It's outlined here in black, and that went from southern New Jersey, Delaware, all the way to southern North Carolina.

It went from the state federal line, the three miles, all the way out past -- To the 100-meter contour, I believe. Because it was so large, and it crossed different bights, both the South Atlantic, the SERO, Southeast Atlantic Regional Office, and the Greater Atlantic Regional Office were involved, and so it required a lot of coordination, not only with NMFS, but the Fisheries Science Centers and the National Center for Coastal Ocean Science.

They provided a lot of information that you see in this map. Our job was to work together, the NMFS offices, to provide a letter and information on the resources that would be of concern to avoid, and the main point of showing this is, although this project isn't moving forward right now, because of policy changes, but having good solid habitat data was really critical for this project. It helps direct where things should and shouldn't occur, and what the impacts could be, and so I wanted to point out that like the orange is the submarine canyons, and it's hard to see, but there's yellow dots where we have data on deep-sea corals. A lot of that was done by that work that we have had presentations on in the past from the deep-sea group.

Also, I'll just point out, on the map, with the purple, that's hardbottom. A lot of that hardbottom was confirmed by work that NCCOS did, as well as the Cape Shoals, which are HAPC. Those are both HAPC. We've got other -- The HAPCs for the coral, Big Rock, Ten-Fathom Ledge, and, you know, they're HAPC for multiple things, like coastal pelagics, snapper grouper, coral, and something else.

The Snowy Grouper Wreck MPA, and that's this right here, the pink hatched area, and that came out of some of that work by NOAA and deep-sea submersible dives. Steve Ross was involved with some of that, and Fritz Rohde. Anyhow, the point is that gathering all that data is really important for giving you a strong response on the activities.

Another activity that we're working on is developing time of year restrictions for the state ports. This is because the new SARBO doesn't specifically address windows for fish, and so Lisa Wickliffe is the lead on this effort, and the idea is you go through this process of identifying what species, important species, are in the inlet, or the port dredging area in general, and when are they there, and what life stage are they there, and you use that detail table that you see here and condense that down to the last two rows, which is the key time when work should not occur and when it can occur, and then there's always the maybes.

In the southern area, Port Everglades has taken -- It’s a big project for staff down there. This project will deepen, lengthen, and widen the dredged channel to extend through the outer reef. Let's see. It’s 2,200 feet longer, and 300 feet wider, and, because of that, seagrass and coral reefs will both be impacted.

This is going to be the largest authorized impact to coral reefs in the U.S. It will require the largest and most complex mitigation effort ever attempted. The proposed project mitigation is larger in scale than NOAA's Mission Iconic Reefs, if you've heard of that. It's not whether they'll do this, and it's when. The EIS was already completed in 2014. It's been delayed, because of some

lawsuits, a lawsuit. and then making revisions. Right now, NMFS staff is involved by providing input on the mitigation and assisting the Protected Resource Division on drafting a biological opinion.

This slide is showing you the port and the bathymetry as you go out the channel. It identifies where some of these features are. Twenty-nine acres are anticipated to be directly impacted, and 197 to 564 acres indirectly impacted, due to sedimentation. They've been doing modeling, to see how far that sediment will cover corals, and, you know, to what extent, and it also depends on the type of dredge used, and so sedimentation impacts will vary by the dredge type.

As part of this, they are required to do water quality, and collect some oceanographic data, and, in this figure -- Because they're widening it, and, I mean, they're lengthening it, and deepening it, and so, before -- You can see my arrow?

MS. HOWINGTON: Yes.

MS. DEATON: Okay, and so the dredged area stopped around here before, and so now they're extending it through that outer reef area and deepening it from forty-four to fifty-seven feet deep, and so, whenever you deepen -- If you deepen a channel, you have to actually widen it, to get the slope right, so it doesn't slump. I'm looking at other details, and there's more that's going to be done, but on the inner part.

As part of that EIS process, they've gotten to the point already that they will not rock chop, but there will be overflow restrictions on the dredge. There will be coral time of year restrictions, July through September, with no dredging, and no anchoring outside the outer channel, and this is gets to the part of the -- Well, this is avoidance. They're going to relocate 65,700 corals that are greater than ten centimeters from the impact area. That's a really large effort.

Another program, you know, we talked about that we have staff that review hydropower, and this is the Savannah River, and it has several dams. One thing that happened this year was there's been a hold-up on the third fishway prescription, because of a lawsuit, but there was a hearing, and there was a hearing that was dismissed, and so now that latest prescription can go forward, and FERC is working on the licensing.

However, because of that administrative hearing, they changed -- The recommendation was for a fishway at the Augusta Diversion Dam, and now it keeps up -- It says it's conditional on getting the Savannah Bluff lock and dam fish passage first, and so the new Savannah Bluffs lock and dam is down here. It's what's called a gateway dam, because it's the first one on the river as you go upstream. That was required as part of SHEP project, but has been held up. It was designed, and it just hasn't happened, and so it's going to be a big effort to get both of those done.

Meanwhile though, staff is working on Stevens Creek Dam, which would open up a small area just above the Diversion Dam, and they're going to be working on it requiring a fishway there as well.

Another -- Some fish passage accomplishments from this year were, one, the Pinopolis Dam on the Santee-Cooper River. At this location, they constructed a eel way that allowed eels to get 1,236 river miles further up the Santee-Cooper River in South Carolina, and, at Blewett Falls, this

is the first full year of fish passage, and they -- By having this fishway, it allowed 1,400 American shad to get 969 miles further up the Great Pee Dee River, and so this fishway is called a trap sort transport fishway, and so that's what the photos here are of.

This is the powerhouse on the river, and on this far left side is the fishway, and so what they do is they create an attractant flow, to divert the fish, and then they go up through this extensive channel system in the middle. Once they get to the end, there's a gate there, and it's open, and so this photo is with the gate closing, and so this little area is jammed full of fish, and then it goes up. It's like an elevator.

It goes up to the next story, and then it has a release, and it empties the fish into a sorting area. They sort out the American shad, release the other fish, and then the shad are put into another big container in the back of a truck, and then they truck them around the dam and put them in the river, and so it's a lot of effort. It's a lot of engineering, but it can move a lot of fish, and, because it's a hydropower situation, you can't remove the power station, and it's really the only option.

At the last meeting, Jordy Wolfe mentioned tide gates, and so there were no new projects in our database for this last fiscal year. However, as sea level rises, the interest in tide gates to reduce flooding in low property is only going to increase, and I just wanted to mention that this isn't a new concept. These photos are from North Carolina, the Swan Quarter area. It's an extreme example of tide gates and diking.

This town has an average elevation of three feet, a population of 300, but includes some of the most valuable agricultural land in North Carolina, and so, around forty-five years ago, Swan Quarter began working on a large project to dike the town. There's now seventeen miles of dike, and they added 2.9 miles of channel improvements and 0.8 miles of PVC sheet pile. There are three pumping plants, and 117 tide gates, and so it's designed to let the flood water out, to protect crops and homes, and then to stop the saltwater intrusion in.

So, in these photos, this is a picture that’s very typical of the ag land, with the ditching and the canals next to it. This is part of that dike that goes around the town at the water edge. It goes around the entire town, and then these canals drain down to something like an area here, due to the pump stations, and then this is. On the bottom-right, a tide gate with the flap down. It has helped, but they are having crops still dying now from saltwater intrusion. It's, you know, even -- It’s in the groundwater coming up as well, and so, anyhow, I thought you might be interested to know about that.

We also have a lot of seagrass impacts that we comment on, which continue, and I know that Pace has forwarded some of those comment letters to you, so you know the impacts can be from direct, from dredging, or to deepen it, or, more likely, they're the pilings and shading.

NMFS has dock guidelines that they developed for SA projects over SAV, and they'll use that in their conservation recommendations in their letter. It doesn't mean they are all adhered to, because, you know, some of them are really to elevate the dock, and people don't want the dock really high, right? I don't know why, and another is orientation, and so, if you orient it so that the sun is to north-south, then the sun -- You get more sun east and west under the dock for the SAV, but you do get pushback.

If they don't do everything, then there is a mitigation option in Florida, but less so in North Carolina. In North Carolina, it's only allowed if -- Impacts to SAV are only allowed if there is overwhelming public benefit, and so it's usually associated with DOT projects, roads, bridges, and mostly bridges.

Mitigation, you know, it's challenging if the main reason for your SAV decline is due to water quality, and so how do you mitigate for that, but, in North Carolina, when they did a new bridge over Oregon Inlet, they went with using wave attenuation devices, where the grass is really patchy, and it has been over five years now, and it did help fill in the grass, and so it increased SAV by reducing wave energy.

I know that Jordy also talked about living shorelines, and that is an activity that we're seeing a lot of increase in.

Under rising sea level rises, you know, the marshes can migrate inland, unless they're developed, with structures right in their way, homes, and bulkheads, et cetera, and so, due to that reality, in North Carolina, living shorelines were considered preferred over bulkheads for stabilization, in many cases, because they can protect the property and still protect and enhance wetlands, as well as other EFH habitats.

This is a chart I'm sure you're all familiar with, the green to gray scale, and I'm going to show you some slides, and just think about where it might fall on this chart, how green is it, or how gray is it.

According to our North Carolina permitting and NGO records, there are approximately 290 living shorelines permitted in North Carolina. In the last fifteen months in our database, there were fifteen applications for the South Atlantic region that came to NMFS for review, and there's others that get permitted, but under a GP, and we don't get that data.

All right, and so this is the definition you guys came up with at your last meeting. It took a whole slide to fit it in. It's a long one, but I bolded the key points. You know what it is, and so I don't have to read it, but the structure is supposed to actually stabilize the shoreline, and promote use of natural materials, maintain natural connections, and provide valuable wildlife habitat, and grow and expand over time.

Again, I want you to think about this, because what we're seeing is a change in the types of living shoreline structures, and so I want you to think about your definition, and that green to gray scale, and whether some of the next slides fit that or not.

This represents the most natural and lower profile type of living shoreline. In the top right, this is where oyster shell was just sprayed out in front of the NMFS lab at Beaufort, and, later, they planted some marsh grass, and it's doing great, and that's all they did. They wanted to try and go as natural as they could, and it's working.

Then the one below that is oyster shell bags and marsh, and you can see a bulkhead as contrast in the background, so that's what -- You know, the whole thing could look like the bulkhead, or it could look like this, and this -- If you look closely, and you probably can't see, but you can see the shell bags, the mesh bags. It hasn't been there too long, and then the left photo is from South

Carolina. You can see oyster shell bags, on the right side of that photo, that were just put in, and then what looks like natural oysters on the left side of that photo is actually oyster shell bags after two years, and so it did really well. South Carolina has had good luck with the oyster shell bags, I think.

All right, and so we've also had, in North Carolina, a lot of -- Okay, and so the permitting term is marsh sills. I think I say marsh sills sometimes, which we now refer to as living shorelines, but it's the same idea. A marsh sill is when you have some type of hardened material that is put out a ways from the shoreline edge, and then marsh vegetation is planted, or allowed to just grow in, and so you can see these sites are all from -- They were done, and these photos are from like around 2010, and they're pretty -- You know, the rock isn't super large, and it's not super high, and the marsh has done really well, and we had a lot of those at first.

That was probably -- Those two oyster shell bags and rock were the main type of living shorelines we were seeing until more recently, and so now we have a number of concrete-based products that are available coming out from different companies, because shell is limited. Oyster shell is very limited, at least in North Carolina, and so people are trying to make these, at the request of the review agencies, I believe, you know, as natural as they can or, well -- So this picture on the top-left, that is called oyster catcher.

It was made -- These are tables. They can make it in different designs, but it's burlap that's dipped in concrete, and then put together in different configurations, and so this one is in Surf City. It's been out a couple years, and it's starting -- It has a lot oysters in certain locations, but then it's like the elevation prevents it from getting all the way over.

Now, here, this is what I would refer to as one of the-- The middle-top photo is one of the harder, grayer structures. This is called reef maker for the estuarine environment. There is a -- I'm not even sure if that cylinder in the middle -- I don't know if that's metal, or maybe it's concrete-based, and then they have these concrete slabs, and oysters are stuck into them, and this is for a high-wave-energy environment, so we're seeing more of that.

This is the oyster castles that you've probably heard about. This is, you know, ones that have just been put down, and so you can see they're really just like square cinder blocks that are staggered together. The bottom-left is a material called matrix, and so it's computer-generated concrete mix, so that they can make them real curvy, and more natural looking.

Then, the bottom-right, this is called quick reef, and quick reef is -- It's actually like concrete slabs. They've added in crushed oyster shell, and, you know, they all have special mixes, to help enhance oyster recruitment, but it's like a teepee, and it's two concrete slabs put together to make like a V, and the advantage of that is they can -- They don't need heavy equipment, and they can float that in on a barge, or carry it in from the land, and just hand place it, as opposed to some of these other, like the reef maker and the matrix, that would require heavy equipment.

In the last few years, these are the type of large infrastructure projects we're getting in North Carolina. They're longer, and they're higher above the water, it seems, and so it's been a shift from home property owners, protecting fifty or hundred-feet-long shorelines, to parks, roads, and undeveloped islands getting these structures. Part of this is because of infrastructure money through the bipartisan infrastructure law.

The top-left is next to the NC 24 causeway in Swansboro, North Carolina, and so this is a rock sill, and then it has the gaps, ten-foot gaps, required, and this is -- We call this an offset, and so, where they have a gap, there's concern that that will let too much energy through, and still cause erosion, and so they do this gap, so the fish can still get in, water can still get in, but then this kind of is a little baffle from any high wave energy.

That project was originally supposed to go further out, and they were going to do fill, have a more extensive marsh, but, because of concern about purpose and need by some of the agencies, they had to bring it in and scale that down. The project is two years old, and, because they wanted it higher than normal, because it's protecting the road, there's been really minimal oyster recruitment. At a low tide, and that's a high tide picture, but, at low tide, the whole thing is out of the water.

The top right is Carrot Island, and that's part of the National Estuarine Research Reserve in North Carolina. There's 1,200 feet of wave attenuation devices that have been put there, and inside there -- There is like a double ring, and inside this is that oyster catcher material, and then you can't see it here, but there's marsh plantings that were put in as well, and this is because that island is really eroding. It does have a lot of wave energy, and it's in front of Beaufort, and so there was an interest in protecting Carrot Island as a natural protection from sea level rise and storms to Beaufort, and so we're seeing that now in North Carolina.

The bottom left is Brunswick Town on the Cape Fear River, and Brunswick Town is a historic site, and the erosion was not only taking marsh away, but it was resulting in exposing like the old wharf, or whatever, that was a historic structure, and so they've gone to a pretty intense thing here with reef maker.

It's over 3,000 feet long. There's also riprap and marine mattresses in the location, and then the bottom-right is the newest, and that's quick reef. Hammocks Beach State Park had been experiencing some erosion of their marsh, with the fringing marsh shoreline, so they did this quick reef. It's 3,029 feet of the park shoreline, almost all the park shoreline.

At the permit review stage, there was concern about the gaps for fish and aquatic life access, as well as water, and so ten-foot gaps were recommended. There was also SAV found during the surveys, and it was very sparsely occurring. They weren't at the peak time. They really didn't do the survey at the right time, and so they were told they had to wait and do the survey during the peak time, or move the structure in, and so the structure ended up being moved in, and so it's more of a marsh sill. I think that was a good move, because, when we went back last year, we did see a lot of -- This year I mean, and we saw a lot of SAV, so originally it was going to be --

MS. HOWINGTON: Anne, sorry to interrupt. Before you move on, the bottom-right, where was that again?

MS. DEATON: Hammocks Beach State Park, which is in Swansboro, North Carolina. You good?

MS. HOWINGTON: Yes. Thank you. Sorry.

MS. DEATON: Okay. That's all right. I have pictures of it on the next slide too, and so this is that site, and so we went there because the consultant is concerned that the gaps are causing erosion

of the marsh, and they want to close them, and so we went and did a field assessment, and this is just to give you a closer view of what they look like.

It's only been there a year, so these photos are one-year post, and so you can see it doesn't look great behind that marsh sill, but, well, marsh wetland, but it hasn't really had time, in my opinion, to do its work. That's marsh, and that's a typical gap. You can see the grass is low behind it, but, again, it hadn't been that much time.

We were concerned that, look how, you know, it's all the way out of the water, and you can see, on these slides not too well, but there's already oyster growth. It gets about a third of the way up, and there's even more on the underside, which is -- They like the underside, but then we went back in June, at a high tide, this bottom-right photo, and that's high tide, and not a full high tide, and not a spring, and so it would be higher, but, I mean, it looks like it's doing its job, in terms of breaking the wave energy, and it is getting the water in, and I think, if the gaps weren't there, there wouldn't be much water getting through there, except at the very high tides, so I think the gaps are important. Then I just -- On this bottom-left, there's just an image of some of the seagrass we found, really right next to the structure, and it was like that for like -- Sparse seagrass, but throughout the whole area.

I was just going to sum up, and so, when we get these applications, we are considering gap size. How long are the segments? If it's just a few segments, that's one thing, but, when it's 3,000 feet long, you know, should the gaps be bigger? You know, how do you deal with that, and that gets to the maximum length relative to the entire shoreline. The height, do you -- You know, you want water to get over that sill, and not just for like a few minutes of the tide cycle, and so that height is important.

We look at habitat conversion, and so how much of the bottom is getting converted from soft substrate to hard, and then the bigger issue, that we can't do on a reviewing an application, is how is this changing the fish community? Is it good or bad, because it's attracting more fish that like structure, and then what is the habitat tradeoff? You know, is there a net gain in EFH, and EFH function, and, based on all that, do we have more monitoring needs?

Then the last -- I was just going to mention the beneficial use of dredge material. I know that Jenny is going to talk about that next, and Jordy talked about it last time. We haven't -- Well, there have been a few projects. We're seeing -- I've seen a couple bird island projects in this past year, but -- There's a lot of talk, and we -- I feel like the reason there is more interest in beneficial use right now is, and we're going to see more of it, is that the Corps has a goal to increase beneficial use of dredged material by 70 percent by 2030, and so they're looking for projects and ways to better use their material, rather than an offshore disposal area.

At the same time, we've got the South Atlantic Saltmarsh Initiative. They finished their plan. It includes beneficial use as part of that, and now their plan is to clean out -- So each state in the South Atlantic is doing their own plan, and so there's probably going to be beneficial use projects within that. We've already seen a little interest from private HOAs and NGOs, and I'm not sure about why Manomet, which is a consulting company, got involved with this. I'm not sure if the Corps asked for it or what, but they did a series of workshops, this past year, to get people together and ask for ideas of where they thought a beneficial use project could occur with dredged material.

They did it in North Carolina, South Carolina, and Georgia. I don't think they did it in Florida. I put the website links here, and so anybody -- If you've got the materials, and you're interested in these states, you can go there, and it shows you where they came up with their final project ideas. I mean, they're just not ongoing, and no permits or anything, and it's just like here are some potential projects we could do, and it has like scoring of them, and so that is all I have, and I would be glad to take some questions, and I just wanted to acknowledge my coworkers that helped provide a lot of this information. That's it.

MS. CROWE: Thank you, Anne. That was a great presentation, a lot of good information, and I see we have Wilson with his hand up with a question, or a comment.

DR. LANEY: Yes, and thank you, Madam Chair. Anne, excellent presentation, as always, from Habitat Conservation. I really appreciate that, and, once again, I'll just say, on the record, to my U.S. Fish and Wildlife Service colleagues who are listening, that it would be wonderful to have a similar presentation from the Ecological Services Division of the Fish and Wildlife Service. I know Rua and Trip are both in other divisions, but perhaps they can convey that sentiment to Ecological Services, and so a couple of questions.

The first one is, given all of the retirements that have happened both in the Fish and Wildlife Service Ecological Services Division and the National Marine Fisheries Service Habitat Conservation Division, do you all foresee that affecting your collaboration and coordination with the other review agencies, and anticipate a possible increase in the number of insufficient staff to respond to projects?

MS. DEATON: Probably. At this point, we don't know if we'll be able to fill positions, you know, that are vacant, and, also, other regions in National Marine Fisheries Service lost more staff than SERO, and so Pace was saying that we may have to be, you know, helping other areas, other regions, and so, yes, I think that we are going to have to be focusing on larger projects, and maybe not going to all the scoping meetings, unless, you know -- Which I think scoping meetings are really helpful, but, yes, I do.

DR. LANEY: Okay. Thank you, and then the next question has to do with Port Everglades. For those of us who don't remember, would you please remind us what rock chopping is?

MS. DEATON: I'm not an expert in that, but I think that's -- I guess they chop the rock, Wilson. I'm sorry. I mean, in the Cape Fear, they use dynamite, right?

DR. LANEY: Yes.

MS. DEATON: So I guess it's more like a -- I don't know, because, you know, that’s solid limestone, even where there's, you know, coral on top, and then there's -- Maybe somebody from Florida would know what rock chopping is.

DR. LANEY: Matt, do you have any idea? I don't know. I mean, I have a mental image of what I think rock chopping might look like. You know, there's all these old, ancient black and white movies, when you see all these guys on the chain gang with their sledgehammers out there whacking away at rocks, just to make work, but I assume some sort of mechanical device would be employed to extract and remove rock from their proposed channel, and so maybe I’ll --

MS. SPENCER: Wilson, really quick. I just looked it up. There's a Miami Waterkeeper piece specifically around this for the Everglades. Rock chopping is the practice of using the drag head from a dredge to grind, pulverize, or pound the rock without the suction function engaged, and it creates a silty, clay, like rock flour, in quotes.

DR. LANEY: Thank you, Erin, and so okay. That does not sound like a really environmentally-friendly practice. With respect to Port Everglades, could you remind us who litigated that one?

MS. DEATON: I don't know those details, Wilson, because I wasn't involved. I got that information, those slides, from the West Palm Beach office, and Jocelyn -- I don't know if you've met Jocelyn, and probably. She's on the Coral AP. She would know.

DR. LANEY: Okay. Thank you.

MS. DEATON: I could get back to you.

DR. LANEY: Okay. Thank you, and then, turning to fish passage, which is one of my favorite topics, as everybody around this table knows pretty much, so, at Bluett Falls, I did have an opportunity, when Mr. Ellis was still with the Fish and Wildlife Service, to go and see that lift, but I didn't. I had a conflict, and so I couldn't. Do you know if they are acoustically tagging any of the shad that are being moved upstream, and if there's any sort of follow-up, to see what they actually do, and whether they do actually go up and spawn?

MS. DEATON: That was Fritz's project. I feel like he -- I don't think so, because they were -- He said they were trying to reduce the stress. I mean, at first, they were measuring the fish, and things like that, to get more data, and then they decided they just wanted to transfer them as quickly as they could. However, again, I'm not an expert on that one either. Maybe Bill Post would know.

DR. LANEY: Okay. Yes, and Bill probably would know. Is he on? Do we know if Bill Post -- No, he's not? Okay. Yes, and I can talk to Bill about that. Anyway, thank you once again for an extremely comprehensive, and very informative, presentation. I love the living shoreline green to gray illustration. I think that's a great one, and, also, the map that you provided for the offshore renewable energy section is a really great illustration as well.

I think that's it. I think those are all my -- Well, the one other comment I'll make is, and I think you would agree, that we, with these recent retirements, particularly of Fritz and my colleague John Ellis at the Fish and Wildlife Service, a lot of our FERC hydropower relicensing and fishway expertise walked out the door, and so I hope that there are some efforts underway, within both the Fish and Wildlife Service and the National Marine Fisheries Service, to try and get some staff, you know, trained up to do FERC hydropower relicensing and to continue to work on fishways.

I just got an inquiry this morning, just FYI to you, about Falls Dam on the Neuse, and then Rocky Mountain Mills Dam on the Tar River, and the question to me was have we ever done any work to negotiate flow regimes for spawning purposes on either one of those river systems, and you and I can talk about that offline. I sent a response, and I think the answer is sort of a qualified yes, but you and I can talk about it more offline. Thank you so much.

MS. DEATON: Sure, and Kevin Mack, who is based in the Charleston office, he's also a hydropower person, real knowledgeable, and so he'll be taking all the projects that Fritz was involved with. I mean, he was also -- They had them split, and now he'll be doing all of them.

MS. CROWE: Thanks, Anne. We have Scott, online, with his hand up, and then Matt, here in the room, with a question. Scott, make certain to mute yourself on your end. Also, while we're waiting for Scott, if you are not on the advisory panel, and you would like to make a comment, or a chat, you can do so on the GoToWebinar panel. On your right-hand side, there's either a chat or a questions box. Type it in. That goes into the webinar record, and I can help answer questions that way, because we have four different hands raised from advisory panel members right now. Scott.

MR. KATHEY: Hi, Anne. Thank you very much. It was a really, really great presentation. I have a question. If you could describe a little bit what the enforcement tools are for EFH, and if you could give us a little bit of an overview of any enforcement action that was taken during FY24, and what that looks like, you know, and how does that play out, and who actually conducts that enforcement activity?

MS. DEATON: Okay, and I'm going to try and answer that question, but Pace Wilber would definitely be the best person to answer that.

MR. KATHEY: Okay.

MS. DEATON: If we say it's - You know, if we write that we want these conservation recommendations, like I said, the Corps goes to the applicant. It's more of a negotiation thing of what they will and will not do. Then the Corps replies back. Now, then we have to reply back okay or not okay. If we're not okay with what they're willing to do, then -- I've not had that situation yet. I haven't, but it gets elevated. It does get elevated within NMFS, and then I'm thinking CEQ, Council of Environmental Quality, but you know what? I'm not positive, and so don't count on that. I guess Pace isn't online, is he? If anybody else knows the answer, go for it, but --

MR. HOOKER: Anne, I can -- This is Brian. I can jump in.

MS. DEATON: Thank you.

MR. HOOKER: Usually, you know, the EFH consultation is -- Well, there are different ones, but I'm talking about from, you know, federal, you know, federal EFH consultations between federal agencies for the actions. The conservation recommendations are usually baked into the permit, and so it becomes the permitting agency's responsibility to enforce whatever permit conditions that they have in their permit, and so it really depends on who the other consulting agency is, because I don't -- I'm not aware -- Unless the permitting agency is the National Marine Fisheries Service, I don't believe the NOAA Office of Law Enforcement would get into enforcement of EFH conservation measures.

Now, I'm not -- If there's like, you know, private applications for docks and so forth, I'm -- Again, I'm not sure who the -- I'm less familiar with how those work, but I imagine, you know, whoever ultimately permitted that dock would have the enforcement responsibilities for the conditions of how that doc is built. I hope that helps.

MS. DEATON: That's absolutely right, Brian. I forgot the -- Well, for what they agreed to do. What NMFS wants, it will go into the permit conditions for the permit from the permitting agency, except for the Corps' permit, or say the state's permit, and I was thinking what happens if they refuse.

MR. HOOKER: So if it's -- Yes, and so it is at the discretion of the permitting agency, as to whether to adopt or not adopt a conservation recommendation. There is -- There are elevation procedures, Anne, as you mentioned, between the agencies, that they can elevate if they feel that that's required, but, yes, it is ultimately the decision of the permitting agency as to what conservation recommendations they adopt or not adopt.

MS. DEATON: Yes, and so the Corps, basically, and the coastal management agency.

MR. KATHEY: So, if someone does not comply -- If I understand this correctly, if someone did not comply with the recommendations, and they had submitted a request to the Corps, which then consulted with NOAA Fisheries on this for EFH, then it would be the Corps' responsibility to address any non-compliance issues, or if they just completely violated the recommendations. Is that -- Is that pretty much how it would go?

MR. HOOKER: It's only if the Corps adopted that recommendation, and so, if the Corps did not adopt a recommendation --

MR. KATHEY: Then then the applicant is not responsible.

MR. HOOKER: Correct. Correct.

MR. KATHEY: Right. Right. Okay.

MS. DEATON: Actually, that has happened like with beach nourishment projects. If we required monitoring, and then we didn't get the monitoring reports, and then they come back for another beach nourishment request, then we can say no, unless we get the monitoring reports. and it's -- So there's an accountability there, and they may not get their next permit, if they didn't abide by the conditions in the first one.

MR. KATHEY: So, if there's no federal government nexus for permitting, for let's say, a dock or pier, then what authority, is there? Is there any authority under EFH to impose conditions?

MS. DEATON: Yes, and that's how we have -- Under Magnuson-Stevens, that's how we have the authority to request conservation recommendations, and the next -- There is a permitting. The permitting, from the federal standpoint, is the U.S. Corps of Engineers.

MR. KATHEY: Right, but if there were no Corps permit involved, but I guess that's kind of -- That's kind of moot, because there's just going to be, if they're going to influence a navigable waterway, and there's no way to avoid that. There's no circumstance where someone would be conducting an activity without having to get a Corps permit of some kind, right?

MS. DEATON: Correct.

MR. KATHEY: So, this applies to general permits as well, nationwide as well, right, as far as EFH review?

MS. DEATON: Yes. Correct. We don't normally review, and that's the point of nationwide and general permits, is they are activities that are permitted -- Have been permitted so much in the past that the impacts are known, and considered minimal, and so they don't get reviewed.

MR. KATHEY: Okay. Thank you.

MS. DEATON: Okay.

MR. MEDDERS: Scott, Paul Medders, from Georgia DNR. I just want to mention that I feel like you're, you're missing half the puzzle there, because of federal consistency. Like in Georgia, and other states, there's state permitting also that folds into that, and then, some of that stuff you're talking about I think is considered at the nationwide permit level, as they're issued, and so I think that other half the puzzle is pretty important too.

MR. KATHEY: Okay. Thanks, Paul.

MS. CROWE: Okay. We had Matt in the room next, and then Matt online.

DR. KENWORTHY: Thanks. Anne, I really appreciate the presentation, and all the information. I wanted to ask a question, going back to your slide 11, the time of year restrictions table, and I think you mentioned that this is something newer, that Lisa is working on to develop, but can you remind me, and sorry if I missed it, but is this specific to a certain activity? Is it dredging related? Sorry if I missed that, and, also, in the location on the bottom of that table, coastal inlet and inshore EFH, and it's got hopper listed there, and can you go back to that and kind of walk through that table a little bit, and the intended purpose?

MS. DEATON: Yes, and I'm getting there. Okay, and so you had a couple questions, and so we already have time of year restrictions. Like agencies, state and federal, have been using those for a long time. It's considered one of the best ways we can minimize impacts, to avoid doing activities that may be damaging to mostly the fish during critical parts of their life cycle, but when I brought this up, we're doing this specifically for the state ports, because they have already -- Because SARBO does not include any environmental windows being required for -- That would be for federal projects like the port deepening.

We wanted to have something in hand that we can have like the references, and how we came to those dates, and be consistent, and use those, you know, consistently. So, while it is for the port, it will provide information that we can also use for individual projects, that are smaller scale, and so we're doing this by state. I say we, and Lisa is the lead on this.

We're doing it by state, because, you know, the temperature differences, you know, the timing of when the larvae move in, or the juveniles, you know, are in this estuary differs, based on your temperature and where you are on the left, and so start out and she has, you know, just picked some of the key federally-managed species that are in that system, and then looks at the, you know, the literature and everything and decides when they're where.

You can just see there's a lot of life stages in that system between May and October. Just, if you visually look at the colored blocks, which is how you come to have that area is being restricted. and the reason it says coastal inlets is because we're talking about the ports and inlets are HAPC, and all the ports have an inlet and some like, you know, they go way up the river, and so you might even have different dates further up that river, but, at the inlet, that's that, and then, as it goes up the river, the other dates would be the inshore EFH, if that makes sense.

Then hopper, you know, they do the dredging in the ports with sometimes a hopper dredge, and sometimes pipeline, and sometimes bucket to barge, if it's a small, you know, mechanical dredging, and we've found that the hopper has the highest likelihood of impacts, that it probably produces the most impacts, because it's sucking the sand up in a sweeping motion across the floor, and so it's impacting more of the sand bottom, or the substrate, than a pipeline, and there's more turbidity impacts than a pipeline.

The pipeline, you know, is sucking it up the pipeline, and then it goes to a beach, which is why it's hard to do that in all inlets, but the hopper -- It goes up onto the barge, and there's overflow, and there's bycatch issues, because, you know, they have to do -- They have observers for the protected species, but not the fish, and they're usually crushed up a bit, and so it's hard to even ID them, and so that's why time of year -- When there's less species in the vicinity, you're going to have less impacts on the fish, and, if there's turbidity issues, you'll have less impact on things like seagrass during their growing season. Does that make sense?

DR. KENWORTHY: Yes, and I really appreciate that background and input, and helping me walk through that table a little bit better. I guess more of a kind of personal curiosity, and you were identifying a lot of the living shoreline projects that are being reviewed, and a lot of them definitely North Carolina-based, with which makes sense, and I was curious if -- Are you guys getting a lot of projects to review in Florida? Are there not as many compared to say North Carolina and some of the other states? I know you're quite familiar with North Carolina, and so maybe that's where your mind was going with a bunch of the examples and pictures, but I'm just kind of curious about that.

MS. DEATON: I know that they're increasing in Florida, too. I saw a presentation about some on the west coast, and south, and maybe the Fort Myers area. I presented information I knew because of North Carolina. One thing I've found with our database is we don't have a category for living shoreline, because it's kind of new, and so you kind of have to figure out, from these categories, whether they were a living shoreline, but, yes, Florida does. South Carolina has some really strict criteria. I think they only allow oyster shell bags. Stacie could probably speak more to that. Florida is just -- It's already pretty hardened, in some places, and so I don't know. I would have to go back and look at that database, and also talk to staff.

I was involved, and this is a concern I have on that green to gray thing, and the nationwide permit for living shorelines allows rock is considered -- Native rock material as part of the natural piece of a living shoreline, and I reviewed one project, and it was basically breakwaters to protect a causeway going over to Cape Canaveral, and they weren't planting anything.

The breakwaters were going on top of some SAV, and, you know, we had a lot of back-and-forth on that one, but, to me, that didn't fit into a nationwide permit for living shoreline, because there

was really not much living, but they did say that the mangroves recruit into the rocks behind it over time, naturally. You could have somebody -- I mean, I've been on like living shoreline conferences, and you get more of a perspective of the different states, and where they're at, but I don't think I would be the best person to speak about all the different state activities. I just don't remember seeing that in our database from Florida. I'm sorry.

MS. HOWINGTON: Thank you. So then we have Matt Johnson, Greg, Wilson, Paula, Scott. So, Matt Johnson, you're up.

DR. JOHNSON: All I was going to say is that the concern about the fine sediments occurring at Port Everglades is something that we're actually concerned with here, with my coral program down Miami, and we're initiating a series of experiments looking specifically at concrete production and the impact that that's going to have over the next coming years, and so just to let everybody know that that is something that we are concerned with at the Science Center.

MS. HOWINGTON: Thank you, Matt. Gregg.

MR. BODNAR: Hey, all. Thanks, Anne, for that. The question that I had kind of builds upon Matt's questions about living shorelines. In North Carolina specifically, we have, with the infrastructure money that's come in, as we kind of expected, that there was going to be an explosion in new materials that were going to be used previously.

Living shorelines, when we had our GP created and all, we were looking at rock, and looking at shell, and, since that has happened, we've had a lot of our larger multi-state consultants purchase companies that create prefab units for these living shorelines, and Anne gave some representatives of those, and so I was kind of curious to see, from the other states, and, you know, Anne kind of mentioned a little bit on her side with reviews, that we've kind of pretty quickly --

As we anticipated, pretty quickly kind of moved away from a lot of the greener options, the sediment, the shell plantings and things like that, and have moved kind of more, and pretty quickly, toward the gray side of it, with a lot of these prefab units. I was kind of curious to see if any of the other states, or any of the other individuals here, what their experiences are with living shorelines and some of these more grayer options that are kind of coming out.

MS. CROWE: So this is Stacie, and I can't speak real thoroughly for South Carolina, but I'll just say that we've been sticking more to leaning towards the greener areas. We're starting to see kind of stakeholder meetings asking about some gray ideas. We've had one recently talking about the wave attenuators, that are like the ones that were put in that -- I believe it's called the Florida Skyway. I think it was off of Tampa, and I may have the name wrong. It was Sky something, but that are more like concrete structures.

I believe they did a mitigation, in coordination with that, with seagrass plantings. We're just starting to see people question some of those ideas, and, so far, we've not really been buying into it, but I'm not really sure where that's going to go. I don't know

MR. MEDDERS: So, for Georgia, I will start by saying I was one of the ones that asked for the afternoon-long defining of living shoreline, and how that turned out. Those things take much longer than one would think. I do know, from looking at those photos that Anne just presented,

that, in Georgia, you can ask for living shoreline to protect an upland, and they are leaning towards greener techniques, with the permitting of what's allowed, and some of the more hardened things lower at the toe of how that structure would be.

We've had some people ask, more recently, what some of those pictures look like in North Carolina, which was a lot of rocks to protect eroding, what we would call an eroding marsh, that has nothing to do with really protecting of the upland, and our permitting does not allow that, and so that's what gets into what's weird when we talk about what is a living shoreline and what is not.

Now, we have a group, in our agency that does living shorelines, and then I have the pleasure of leading the group that does oyster restoration, and they are fine if we say we are putting out shell, or the oyster catcher tables, or any of those other things on the bank to increase the oyster population, and oftentimes the marsh does migrate out behind that, but we don't call that living shoreline, and we don't call that protection of the marsh.

There's a real fine split, that gets real weird, which is kind of what Matt was alluding to, I think, with some of the things that the pictures in North Carolina look like are different, and so there's some real fine parsing, and we may just do it weird in Georgia. I don't know, but it doesn't look like some of those pictures that we saw, if that helps kind of define -- You've really got to be losing upland. It's got to be the upland interface.

If you've got a giant marsh a couple hundred yards in front of you, and you want to keep the creek from migrating, our permitting says no, you can't do that. Creeks migrate, and so we're dealing with that now, because -- Does that help?

DR. KENWORTHY: Yes, and I think where we kind of went in the beginning, and this was before I got on with the division, was looking for alternatives to bulkheads, and I think that might have been maybe kind of where that started, and where we kind of are now, possibly, because, as an alternative to bulkheads, you're looking at putting these structures offshore, and whether it be for now a bulkhead, or for marsh protection, versus uplands protection and all, and, with the increase in the number of companies who now have these living shoreline prefab units, when an individual takes on a consultant, and that consultant has a company where they have a prefab unit, you know, it's a pretty straight line from A to B on what's going to be proposed for that living shoreline, and so I was kind of curious to see where in the kind of timeline some of the other agencies, and the other states, are with their look at -- How they've looked at living shorelines, both previously and now kind of moving forward.

MS. HOWINGTON: It's Wilson, Paula, Scott.

DR. LANEY: Okay. Thank you, Kathleen, and so, Anne, a couple of more follow-up questions. One is, on the oyster shell living shorelines, I know we had an extensive discussion, at the ASMFC Habitat Committee, about bag materials, and I know there are efforts underway to try and get away from using plastic as the bag material.

Do you know that there is -- Well, first of all, when you all are making living shoreline recommendations, are you specifying the material that can be used for the bags, and are you trying to go with biodegradable materials, as opposed to plastic, and I know that the big discussion we

had was the tradeoff between trying to maintain the integrity of the oyster shells and the configuration that you deploy them long enough for them to get colonized.

You know, plastic lasts longer, and so it's better for that, but, on the other hand, we've all heard about all the microplastics in our environment, and how problematic that is, and so it would be better if we had some material that would biodegrade, but would last long enough to maintain the integrity of the oyster shell deployment, and whatever it looks like, so that's question one, and I have one other one.

MS. DEATON: Okay. Well, I'll say that we don't ask for that, but I haven't even seen any applications that are just for shell bags right now. I think that, you know, they just don't -- They're really for a very low-energy environment, where they don't hold up, and they don't recruit and stay put as well, but I do know Coastal Fed did some experimentation with some of the biodegradable bags that were available, and they didn't hold up very long at all.

Lexie said, I mean, a few months, I think, and so that would be a great thing to invent, and I do -- I think that is kind of the concept of the oyster catcher, you know, and it's burlap, and dipped in concrete mix, which has shell mixed into it, and so it is biodegradable, pretty much.

DR. LANEY: Okay. Thank you, and then my other question sort of tags on to Scott's earlier question about enforcement, and so, aside from enforcement, when applicants just -- Well, when the applicants don't do what they -- What the permit required, when they do implement everything that was in the permit, are the permitting agencies, the Corps and/or the state coastal zone management folks, are they routinely doing any follow-up, to ensure that a project was implemented and constructed in compliance with the design?

The reason I ask that question is because, historically, there have been a lot of studies that went out and looked at mitigation projects and found out that the construction fell far short of what the design criteria were, and so the result, in terms of the amount of mitigation you get, fell far short of what was anticipated, based on the design that was provided to the review and permitting agencies, and so I was just wondering if there was routine follow-up now at some point.

You mentioned monitoring, and so I'm assuming that, if monitoring is built into the permit , that the likelihood for some sort of valid follow-up would be a lot greater under a project that's being routinely monitored, versus one that didn't have a monitoring provision built into it.

MS. DEATON: Right. If there's monitoring required, then most -- I mean, the permitting agency would get a copy of the monitoring reports, and I think Gregg needs to answer the rest of that question, because I -- From a state level, and I don't think anybody is on the call from the Corps, as far as follow-up, and does anybody follow-up , to make sure there's compliance?

MR. BODNAR: So my Georgia answer to that is -- Like when I'm parsing it out now, and oyster restoration does require monitoring, and so we are monitoring, and we are reporting, and so it kind of gets covered there. I didn't say, a minute ago, that, really the living shoreline stuff gets permitted, in our agency, along with armoring shorelines. It kind of falls into that bulkheads and bank stabilization, is what they would call it, and they do require post-construction surveys, so you can see physically where the thing is in the world after it's done.

Then we, as of recent, the last few years, and it's getting ramped up, do have a compliance and enforcement unit, that does go out and look at things, usually harder things than living shorelines, but we do look and see if they are where -- Is the bulkhead where they said it was going to be, is it as long as they said it was going to be, and I am not 100 percent sure they do that with living shorelines, but they certainly have the ability to do that with living shorelines, but nobody is really looking at them from the perspective of what does the living shoreline look like two years, three years, five years later, and is it working.

It's more did you build it where you said you were going to build it, and how you said you were going to build it, and, from our experience in Georgia, we don't see a lot of visits from NOAA, or, I mean, from the Corps after something like that is done and permitted. I know they do it, and we just don't see it consistently. I think that's a staffing issue, for them, more than anything.

MR. THEPAUT: I'll add the same in South Carolina. We have a critical area permitting section, with subsequent compliance enforcement, that go out and kind of spot-check things. I'm not aware of any as-built surveys that are required.

MS. HOWINGTON: Paula, and then Scott.

MS. KEENER: Thank you. Thanks for the excellent presentation. The discussion about the Port Everglades deepening made me think about our conversation yesterday about space debris in the ocean, and so I think, whatever information is available, and there's a lot online already, obviously, with environmental review and habitat assessments, and I think that some of that could, depending on what the council's recommendation is in moving forward on looking at impacts of space debris, some of that probably could be used as just sort of baseline information to support that. I know it's focused just on dredging, but especially mitigation, you know. Thank you.

MS. HOWINGTON: Scott.

MR. KATHEY: In looking at your location project maps there, from Hatteras down to Key West, I see there's about fifteen projects that are legitimately offshore. They're, you know, twenty to forty, and some even up to maybe eighty miles offshore, and I didn't see anything in the presentation about, you know, those offshore type projects. Could you just kind of characterize those, and what -- You know, what do they look like? What kind of projects are you reviewing EFH, or having EFH consultation, on offshore?

MS. DEATON: You know, I think that some of those are coordinate errors, and I don't know the Florida area as well, but, looking at this North Carolina map, that green dot up there, I don't know.

MR. KATHEY: Off of Hatteras?

MS. DEATON: Yes.

MR. KATHEY: Kind of southeast of Norfolk?

MS. DEATON: This one down here? I would have to look it up, but it couldn't -- It was a no objection, or didn't look at it, and so it could have been -- It couldn't have been anything major, and, if it was one of the inlet projects, it would be right there at the shoreline edge, and so central

-- I mean, that could be Central Atlantic 2, that green one up across from Kitty Hawk, but they're probably -- We just don't do a lot of -- Except for the energy, we don't do -- There's not a lot of projects on the Atlantic.

MR. KATHEY: I saw one there off of Florida, south of Miami, that EFH recommendations were actually issued for, which looks like it's about forty-five miles off the Keys.

MS. DEATON: That one?

MR. KATHEY: Yes, and I don't know if anybody knows anything about that particular project, or if it's, like you said, maybe just an errant coordinate, you know, in the database.

MS. DEATON: Yes, and I think that probably is, because --

MR. KATHEY: Because I was wondering if, you know, if these were live bottom reef areas, where someone is doing research or something out there, and just kind of curious.

MS. DEATON: Yes, and I can get back to you on that. I think we wouldn't have conservation recommendations for research on that. It doesn't sound likely, but I'll definitely check on that.

MR. KATHEY: Okay. Well, thank you.

MS. CROWE: Okay. Kathleen has a question.

MS. HOWINGTON: I know, and it's so rare. Anne, in the Port Everglades project, you said that you -- That the plan is to -- Well, not you specifically, but the plan is to relocate I think it was 65,733 corals.

MS. DEATON: Yes.

MS. HOWINGTON: How?

MS. DEATON: I guess you chip them off the bottom. I mean, they've come a long way, and they can produce corals, and they can keep them in nurseries, and so I'm very interested, and I think that would be a great talk for a future meeting here, is maybe get Jocelyn or Zamera to talk about that.

MS. HOWINGTON: Well, Matt Johnson has his hand raised, I think in response to that, and so Matt. Don't forget to unmute yourself.

DR. JOHNSON: Sorry. Too many buttons. That's certainly something that Zamera and Jocelyn could talk about. They're in charge, but it's something that they've been working with our staff on, about actually getting out and developing the plans to get all those corals removed and replanted across the reef, and so, if push comes to shove, I can have one of my staff members show up at the next meeting to discuss the process, but, again, Jocelyn and Zamera are probably the best two at this point.

MS. DEATON: That would be great.

MS. HOWINGTON: Before we move on, I do want to reiterate, for the public, we have public comment at the beginning of the meeting and at the end of the meeting. However, if you have something that you need to say, you can do it in the chat or the question box of the GoToWebinar. You can also go online, to our Habitat page for the meeting, and you can submit public comment there, and so, if you have something to say, and you're not a member of the advisory panel, please take one of those methods for commenting.

MS. DEATON: Can I stop sharing?

MS. HOWINGTON: Yes, you can stop sharing.

MS. CROWE: Okay. Thank you, Anne. We appreciate it. Great presentation. Thanks for your patience with all the questions. We are going to take a ten-minute break in the room.

MS. DEATON: Sounds good.

(Whereupon, a recess was taken.)

MS. CROWE: Our next presentation is going to be on the beneficial use of dredge material, and Jenny Davis is online, and going to give that presentation for us.

MS. DAVIS: I'm here. Can you hear me?

MS. CROWE: Yes. I do not have share permissions.

MS. HOWINGTON: Yes. One moment. I' m trying to share with you. It's saying -- You're on the web app right now?

MS. DAVIS: Correct.

MS. HOWINGTON: One moment. Okay, and so I just got feedback, from the sidelines, that, because you're on the web app, versus the desktop app, you will have to log off, and then log back on again, to be able to be a presenter. Do you want me to pull up the presentation that you guys have sent me, and use that, and then you can just say next slide, whenever you need?

MS. DAVIS: That's fine with me, if that works for you, or I can go the other route. Either way.

MS. HOWINGTON: I believe I have it already pulled up. Let me double-check. This is the one with the video?

MS. DAVIS: No, and that's not me.

MS. HOWINGTON: That is not you. That is -- Sorry. My bad. That is this afternoon's.

MS. DAVIS: That looks way cooler than mine.

MS. HOWINGTON: All right. This is yours, correct?

MS. DAVIS: That's me, yes.

MS. HOWINGTON: Okay. All right.

MS. DAVIS: Does that work for you?

MS. HOWINGTON: That works for me. Just tell me when you want me to hit and go to the next slide.

MS. DAVIS: Awesome. Okay. Well, thank you for that, and good morning, everybody. I'm Jenny Davis, and I'm a research ecologist with NOAA's National Centers for Coastal Ocean Science, and my team has been focusing on beneficial use of dredge sediments for some time now, specifically beneficial use for habitat creation in coastal ecosystems, and so that's what Kathleen asked me to talk about today.

You know, our specific emphasis is on better understanding where, how, and why to use this approach for the best outcomes, and my goal today is to kind of walk you through several of the projects that we've been involved in most recently, to kind of, you know, give you a flavor for the variety of the challenges, and the potential benefits, associated with these projects, and I'm just going to go ahead and confess that these are not going to be all from the perspective of the South Atlantic. They're kind of spread out, in terms of scale and geography.

To start with, you know, I think it's really important to think about the scale here of this opportunity. It's estimated that about 200 million cubic yards of sediment are removed annually from navigation channels across the country, and, as Anne suggested in the previous presentation, there's an emphasis on using more of that material beneficially to create habitat, but, at the current time, the majority of it is still going either offshore, for disposal in the open ocean, or being deposited on land, in confined disposal facilities, and so, you know, repurposing even a small fraction of that has the potential to have some significant habitat benefits.

You know, I'm sure I don't have to tell this crowd this, but the reason that this matters is that our coastal marshes need sediment in order to gain elevation, to keep up with sea level rise. The more -- The higher the sea level rise rate is, the more sediment that is needed for these marshes to build elevation, to remain in place over the long-term, and so, you know, they're challenged with already with sea level rise, and taking sediment out of the system and depositing it in other places, is just further exacerbating the challenges of these marshes to remain in place for the long-term.

There's some really compelling evidence that marshes are already facing struggles, due to rising sea levels, and so what I'm showing here is an example from an effort we were involved in recently to look at whether marshes in North Carolina are keeping pace with sea level rise or not, and, if you're not familiar with it, this graphic on the left is showing you a surface elevation table.

This is a mechanical device installed into a marsh permanently. It gives a fixed reference point for measuring changes in marsh surface elevation, with millimeter-scale resolution, and so, you know, we went back, through this effort, to identify all the marshes that, or all the sets, excuse me, that had ever been installed in marshes in North Carolina, and to, you know, get a hold of all those

people that had installed them, for their various reasons, and try to do a synthesis to understand what these devices cumulatively could tell us.

What we found were 132 different devices. That graphic that you're seeing in the bottom-right is kind of showing you the distribution of those devices. The numbers in the middle of the circles tell you how many sets are installed at each location, and so we got people to submit the data, full data records, from those devices, and that's what you see in this slide here.

Each one of those dots represents one of those 132 devices. The Y-axis is elevation change rate, measured over the full life of that particular device, and then what you see in those -- In the blue band and the gray band are average rates of sea level rise over the last ten years and the last thirty years, and so these are using the NOAA, you know, long-term tide gauge stations. There's four of them in North Carolina, and so the distribution in those bands represents the average across all four sites.

What you should notice from this is that there's a whole lot of those dots that represent negative change rates, and so those sites are actively losing elevation, and then there's a whole lot of those sites that are above , where the sets are recording elevation gain, but they're falling beneath those rates of sea level rise, and so, even though the marshes are building, they're not building fast enough to keep ahead. In fact, only a few of them are keeping ahead of sea level rise, and so this is, as I said, a North-Carolina-specific analysis, but this is not a North Carolina specific problem. We see this in syntheses, you know, across other geographies as well. South Carolina DNR just put out a very similar story, based on their set network.

We've got that -- You know, we've got that empirical field-based data, showing that marshes aren't keeping up, and then, you know, we've also got the long-term projection. There have been more and more of these efforts recently to kind of understand what's going to happen to the distribution of these habitats over time.

This particular example comes from a study that was recently done by Katie Warnell at Duke, and some of her colleagues, and so, essentially, what she's doing is looking at distribution of intertidal habitat. I believe her full geography was New York to North Carolina, and so, on the left, you see, you know, how much coastal marsh there is originally, represented by that purple band, and then, with one meter of sea level rise, about, by 2104, how much of that is likely to still exist in its current location, and so, you know, you can see the prediction is pretty significant losses.

Now, if you look at the green band on the bottom, you'll see some of what is currently considered transitional habitat, and so it's sitting at an elevation just above the marsh. Some of that will likely convert to migrated or to coastal marsh. That's what's represented by the migrated coastal marsh band there, but, still, you know, the projection is for a pretty significant loss of this habitat, and so the -- You know, we've got these marshes that are sediment starved.

They're falling behind sea level rise, and yet we've got this sediment that is being carried out of the system, and, basically, you know, representing a further stressor to these marshes, and so that's one of the reasons that there's been such a major interest in using beneficial use in recent years.

So, you know, repurposing some of that sediment to habitat creation is not -- It's not going to completely solve our problem. There's not enough sediment out there to restore all of these

marshes, but it could be used strategically to offset some of those losses, and so what I have kind of carved out here are four categories of the ways that sediments are frequently used, or at least proposed to be used, for these kinds of habitat creation projects, and I want to stress here that there's nothing official about these categories. These are just kind of the way that I tend to lump things.

So the first one, I think, and most common approach that you'll hear talked about, is thin layer placement, and so, you know, this is the idea of just adding sediment on top of an existing marsh that needs a boost, that we know is not keeping up with sea level rise, and so thin layer placement is taking an existing marsh, raising it up in the elevation, in the tidal frame, to buy it some time.

Then you'll see projects dealing with creation of new habitat. A lot of times, you see the -- I think we heard bird islands talked about previously, or marsh islands, you know, kind of rebuilding a new habitat, or a very eroding island feature. The third kind of category I've defined here, you often see an interest, at least, if not -- I don't see a lot of these in practice yet, but I hear it talked about a lot, this interest in, you know, using dredged sediments to rebuild a shoreline that has been eroded. You could, you know, take a marsh that has lost thirty meters and build that habitat back out.

Then the fourth category is strategic placement, and the idea behind this is that you take dredge sediments, place them in usually, you know, kind of an open estuarine system, with the intention that they don't necessarily stay where you place them, but that they get moved by tides and currents to where you want them to go, and so, you know, we don't see a lot of examples of this being used yet, but you will hear a lot of talk about it.

Again, there's nothing official about those categories. I just wanted to emphasize that the examples that I'm going to show you only come from these top two categories, and that is because, one, you know, these are the most commonly discussed, or applied for, types of applications, and, two, it's the best examples that we've been working with most recently.

This first example is from the Freeman Creek system in North Carolina, and so this is on Marine Corps Base Camp Lejeune. It's an area where we, at the NCCOS lab here, had a long-term research project. We had a number of those surface elevation tables installed, and so we knew the rate of change of that marsh over the previous decade. We had done a lot of work on understanding, you know, the vegetation and how it was distributed across the existing elevation gradient.

We had a deep dive. and a lot of instrumentation in this site, to understand the water level dynamics, and so we could prove, pretty conclusively, that, you know, this marsh was not keeping up with sea level rise, and so there haven't been a ton of projects in the Southeast using beneficial use, and so this was our attempt to kind of demonstrate, on a very experimental scale, you know, what the challenges and benefits are of this approach.

To do this, we set up a replicated experiment, and so, on the left there, you're seeing our treatment cells, and so those are outlined by coconut fiber logs. We had three treatments, and so those were the cells that we applied the sediment to, and then we had three controls, and so you'll see treatments cells there, numbered from left to right, and 1, 2, and 5 are the treatments. This imagery is a drone imagery, and it was collected about halfway through the application, and you can see, already, that those three cells are, you know, higher in elevation. They're a bit sandier.

We did this dredging ourselves, with the kind of setup you see on the right there, and so we were dredging directly out of the intercoastal into these cells. On average, we got about five centimeters of elevation change, and so close to two inches, across these sites. Even at the small scale, it was very hard to get a very consistent elevation addition, and so the range was actually more like two centimeters in some areas, and fifteen centimeters in others, but so we got that sediment applied.

Then, on each of these cells, we kind of set up a grid system, which is what you see in Cell 6 there in the bottom-right of that left picture. In each of those cells, we identified five locations, and we went back to those locations, time and time and time again, to look at the vegetation and the elevation in those plots.

The data, you know, I think were pretty interesting. If you look at this graphic on the top-left, and this is where I'm really regretting, Kathleen, that I'm having you run these, because I can't use my pointer, but, if you look at the graphic on the top-left, so this is average biomass, in control and treatment cells, and so every observation across all the control and all the treatment cells averaged together, over the 2017 to 2022 time period, and so we applied the sediment in -- I think the final application was in April of 2017.

These data are collected in July, in the middle of the growing season, and so you can see, in 2017 already -- You know, there's no difference in the total amount of biomass in these plots, and this is plant biomass, between the control and the treatment plots. Essentially, you know, our application didn't harm anything, is what that's telling us. One thing I will point out is that this was a very low marsh, and so it was 100 percent Spartina alterniflora. There were no other species out there.

So, you know, by year-two, 2018, we've got double the amount of biomass in the treatment plots as in the control, and that signal was maintained, you know, for at least another full growing season. We don't have data from 2020, because it was COVID, and we weren't allowed to go out, but then, you know, the response, the differential, in terms of just standing biomass, kind of fades out.

One thing I will point out is that these sediments were really sandy, and so there wasn't -- You don't tend to get a lot of nutrients associated with sandy sediment, and so we don't think that this had anything to do with a nutrient response. Essentially, you know, we gave the plants better conditions to grow in, slightly less inundation, better drainage, and they responded by growing very vigorously, and so that's the plant response.

This graphic on the right I think is even more interesting, and so this is the elevation response. If you look at the top three bars, those are the treatment cells. The bottom three are the control cells, and so this dataset starts at time-zero after we finished adding sediment. That's why the three treatment cells start off so much higher, but what's really interesting about this is that you continue to gain elevation in those treatment plots over time.

This is not adding additional sediments. This is the plants themselves trapping those sediments, and building elevation, and so, essentially, by giving them a bump-up in the tidal frame, we've made them more resilient over the long-term, beyond just that initial amount of sediment that we

added, which I think, you know, is a really nice demonstration of the goal of doing this type of thin layer addition.

Okay, and so this though is a very demonstration-scale project, right? These are twenty-four-square-meter plots. The next example that I'm going to show you is also a thin layer placement project. This is an operational-scale thin layer placement project, and so this is Deal Island, Maryland. If you look in that gray box with the map, the red outline kind of shows you where we're at.

We're on the peninsula there on the south side of the Wicomico River, and so the river is dredged pretty frequently. They needed new places to put material. They had some marsh on the south side of that peninsula that there was an interest in raising up, and so what you're seeing, in the numbered parcels, were the potential placement areas identified for this project, and so Number 1 is about a twelve-acre parcel. Number 2, that's about sixty-five acres, and Number 3 -- I don't even remember the scale of that one.

They ultimately ended up placing, on this last go-round, in Parcel Number 1 and Number 2, and so the area surrounding this marsh is really shallow. It was just not going to be possible to dredge -- You know, to barge the material from the north side of the peninsula to the south side, and then pump it into the marsh, and so what they ultimately ended up doing was pumping it over land, for fourteen miles, to place it in the marsh. Part of the reason that that was doable is that the material was very fine, and so, you know, it's easier to pump fine material farther. That also makes it a little bit more challenging to work with.

A couple things to know is that this was a juncus-dominated marsh, and that there was a lot of background work to identify the target elevation. The stated goal of this project was to, you know, raise that marsh for the purposes of creating better nesting habitat for saltmarsh sparrow, and so this was an Audubon-sponsored project.

If the birds don't get, I guess, twenty-five days of flood-free nesting, then, you know, the nests fail, and so there was an effort, for a year or two previous, to instrument this marsh, and to really understand how frequently it was flooding, and just how low it was. It's not anywhere near a long-term tide gauge, and so, you know, so that work had to be done to identify the right elevation.

One of the unique things about this site is that -- So now I'm, you know, zoomed-in, and so you mainly see just the two parcels where the sediment was placed. The north side of this whole project area is fringed by a levee road. There's a waterfowl impoundment on the north side, and so that levee road, you know, is pretty strategic, in that it provides some containment for the material. There was no containment on the south side, and so they placed a berm of straw bales, and that's what you see in the picture on the right.

It's basically a pyramid, and so there's two straw bales on the bottom, and one on top, and they're all staked down, and they placed it the entire outer edge of that parcel, that runs along the entire road, and so that ended up being thirty-thousand-some straw bales. It was a significant feature.

One of the things to talk about is that, you know, that structure was very good at containing the bulk of the sediment, but you still get a plume, and you can see that in this picture over there on the left. They're placing in the top-left corner of the area, and you can see, you know, the plume

of silty material coming out. It's really hard to avoid having something come out, you know, particularly when you're using very fine sediments.

Now I'm just zooming-in on that twelve-acre parcel, just because it's hard to show the entire thing, and the impacts. On the left, you see overhead imagery of that in 2022, and so that's pre-placement. You can see there's a lot of open water, a lot of ponded area, a lot of subtidal area, within that marsh platform. That band of vegetation on the shoreward edge, that's kind of a light greenish-yellow, that's the distichlis-patens mix habitat that they were targeting. You know, that's the ultimate goal, is that's what the site will be dominated by, because that's where the birds like to nest.

Then, on the very outer fringe on the south side, you see a brighter green band. That's the low marsh, the Spartina alterniflora, and so the middle picture shows near the end of placement, and so this was just done in winter of 2023-2024. This is a February picture. You can see -- You know, going into this, the thought was that probably the entire marsh would be buried, and they would have to replant, and so they budgeted to put 900,000 plants, by hand, across this entire project area, after the project was done.

What happened is a lot of that juncus was still standing, and seeming to be just fine, after the placement, and so these fine sediments just kind of ran around a lot of the existing plant structure, and it was left in place, and so you can see -- Like all that brown vegetation in the middle is a lot of that juncus.

The other thing to point out here is that, you know, some of that perimeter, that straw bale perimeter, was really beaten up by a winter storm, and it got washed into the marsh, and so a lot of it had to be replaced. Containment is a consistent challenge with these projects, it seems like across the board, but, if you look at that graphic on the right, and so this is -- You know, that's four months after the middle graphic, and the marsh greens up quickly.

The majority of that bright green vegetation, that you see coming in there in the center of the area, is volunteer, and so that's not even planted. It's just, you know, again, you create the right conditions for growth, and those plants come in like crazy. It's not the target vegetation. However, as you'll see in some other examples, these projects -- You know, it takes some time to equilibrate, and so I think there's still a sense that we might be moving towards getting more of the target species, but, you know, regardless, the elevation that was planned for has been hit on that project, and it seems to be on the right track towards really getting the desired outcome.

Then the last thing that I wanted to point out about this specific project is that -- So here we're dealing with pretty fine sediments, which, you know, have their own challenges, and which can tend to have a significant nutrient load with them, which is probably why we got so much volunteer vegetation in this site, and so these little green dots, that you see on the map, are places where we went pre-placement, and where we go back annually post-placement, to measure the vegetation, you know, document what's at that point, and then also the elevation, because we're very interested in, you know, how much of a change was made, and the how long is that change maintained for.

Then the orange dots that you see are where we collect porewater, so that we can look at the nutrient loads and the chemistry and the salinity in those sites, to try to understand, you know, some of those implications.

What we find, in looking at these before and after, and then also both inside and outside of that straw bale berm, is that, you know, the vegetation -- The elevations inside the placement area increased from fifteen to forty centimeters. The plan was always to place the material closer to the levee road, and then let it flow across the marsh, so that, you know, it would kind of have a little bit of a gravity, I guess, fed distribution, and so the goal was to have a lower elevation on the outer edge than on the inner edge. That definitely happened, and the -- You know, that forty centimeters, that's about fifteen inches, and so that's a pretty significant lift of that marsh.

The thing that I think is maybe more interesting about this is that, when you look at the porewater nutrients, just right inside that straw bale berm and right outside of it, it's an order of magnitude difference, and so, yes, that material that's being placed is bringing nutrients with it, but that signature is really, really well isolated just, you know, by having that straw bale berm. The nutrients are not seeming to seep outside into, you know, the adjacent marsh.

Okay, and so I'm going to switch gears here and show you something that's not thin layer, but that's a really different and, I think, a really interesting use of dredge material. This is in the Galveston Bay system. The graphic on the left, you see all that -- You know, that dark area is distribution of wetland habitat in this particular cove, and you can see, if you compare that to the middle panel, that, you know, within forty years, the majority of that wetland was lost, presumably to very high rates of relative sea level rise in this area.

This project involves trying to recreate some of that complex, you know, intertidal habitat that has open water areas, and has, you know, a few little high mounds, and has marsh, using dredge material. That's what you see on the right, is the kind of big-scale-picture look at what that ends up looking like over time, and so, the goal here, or the in practice here, what they did was use dredge material to create individual mounds of sediment, that would ultimately become marsh.

I linked, down here at the bottom, and Texas Parks and Wildlife put together a really beautiful story map on this process. They've done tons of projects like this in this system. You know, also, essentially, they're just pumping material at one spot until it builds this semicircular mound, breaks the surface, and then they come in and plant it with the appropriate level, or the appropriate vegetation, and then, you know, that's pretty much all that's involved in this process, and so the goal here is creating, as I said, that, you know, that full habitat complex, so you get the kind of intertidal areas in between the mounds, and you get a lot of edge habitat.

You know, there were a huge number of these types of projects done with American Restoration and Recovery Act money, back in the early 2000s, and we got interested in going back to look at, you know, some of these historical projects, because, you know, having a twenty-year perspective can really -- It can really kind of influence how you think about, you know, long-term benefits of such things, and so the project that we're looking at is outlined on the left, in these red circles, and so it was phase two of this particular project. That was completed in 2004.

We went back in 2023, with some support and help from folks at the Galveston Fisheries Lab, and just to ask the question of, you know, do they still look like they were intended to look, and how have they held up over time, and are the intended benefits being provided, and so it's a little bit --

I think this comparison might be a little bit hard to see, just because the graphic, or the picture, on the left was taken at much higher altitude, from an airplane. On the right, we're using a drone, and so, you know, we're limited to much lower altitude, but if you start, you know, kind of comparing, in that bottom-most red circle, individual mounds back and forth, you'll see that almost all of them are still there. Some of the outer ones are misshapen. You know, they've taken a little bit of erosion over time, but pretty much everything is still in place and doing what it was intended to do.

One of the really cool things about this particular project is there was some significant amount of monitoring that went on in the early first few years, and so we were able to, you know, kind of go back and very quantitatively look at change over this particular site, and so this kind of inset graphic picture, that you see on the left, those orange squares are elevation survey points that were collected in 2009, and then the kind of teal circles are our attempt to more or less follow that same transect and, you know, compare.

On the graph on the right, you see those overlaid over each other, and, I mean, it's kind of shocking to me, honestly, how incredibly stable those sites have been over time. Interior mounds tend to seem to hold up really well, and not lose a lot of elevation. The picture that you see, kind of in the background behind these two graphics, is standing out there on, you know, in the middle of one of these complexes, and, you know, what you can see is, after twenty years, and I can't say anything about the time period in between, obviously, because, you know, we went back twenty years after they were created, and that was our first time looking at them, but they are incredibly hard to distinguish from a natural marsh that's nearby, just visually.

The other thing that I think is pretty interesting about these particular sites is, if you look in that picture on the left, you can see there's shadows. I don't know why I'm using my mouse here to point. Thank you. There's shadows of subtidal vegetation around those mounds. That is Halodule seagrass, that came in voluntarily, because those mounds are there, right, and so it created the right conditions, that stable, shallow, you know, low turbidity kind of habitat, and so, you know, that's just kind of an added benefit of creating the marsh mound habitat, is that you see the seagrass coming back in as well.

So, you know, just an example of that kind of second category of using dredge material to create habitat where it maybe once was, but isn't anymore, and I think there's a lot of kind of cool examples of these types of projects out there.

The last project that I'm going to show you is back in Maryland again, and so this is Swan Island, Maryland. Swan Island sits at the very northwest corner of the Smith Island complex, and, importantly, it sits just to the northwest of the town of Ewell, Maryland, and the one thing that I want to point out, in that bottom-left panel, is the area between Swan Island and Ewell, Maryland is a massive seagrass bed.

There's a couple hundred acres in there, and both that seagrass bed and the town shoreline are protected, from a huge stretch across Chesapeake Bay, by the fact that Swan Island is sitting there. If you look at the graphics on the kind of right panel there, you see degradation of that island over time, certainly as a result of basically, you know, taking all that wave energy.

You can see that the very northern shoreline of the island was pretty highly eroded in the rightmost lobe of the island. You can see, in 1998, it was all intertidal marsh, and, by 2013, it had converted to subtidal habitat, and the shoreline behind it was being over-washed, and so, you know, continued losses of this magnitude threaten the long-term existence of this island and its ability to protect all the area behind it.

To kind of shore this up, the Baltimore District of the Army Corps came up with a plan to use sediments generated during a navigation dredging action to lift that island up and create some, you know, additional habitat complexity to it, and basically buy it some time against sea level rise, and so, you know, this involved creating a huge area of low marsh, in that kind of eastern lobe of the island, that would grade gently up into high marsh, and then to kind of rebuild some of those dunes on the northern side.

Then one of the other things I really want to point out here is that there's the kind of dark line around the southern edge of the island, that's essentially a V-shape, and this was -- The area to the south of that V-shape, there was a lot of rupia, a big rupia meadow, and they really wanted to protect that, and so they put in a basically a coir log perimeter, in an effort to keep all the sediments on the northern side of that.

Because of -- You know, because, in some areas, they were going from subtidal to high marsh, the placement thickness got up to as much as three feet in some areas, but it was, for the most part, pretty sandy sediment. They were able to just, you know, dredge it onto the island and then use excavators to grade everything into the appropriate elevation bins.

We did some -- At this site as well, we did some pre-placement collections, and then we monitored progress of the whole project for five years after placement, and one thing that we, you know, saw -- If you kind of look at the top two pictures, that's representing the high marsh area that was created there towards the western side of the island. That was planted with Spartina patens in 2019, and, by 2020 -- I mean, it grew in so vigorously. It was everything that you could hope for in a restoration project outcome. It continues to look like that to this day.

The two pictures on the bottom, however, represent, you know, what happened in the low marsh, which was that the vegetation didn't come in as vigorously. You know, we can discuss this, but I think that's partly due to not targeting the right vegetation in all of these places, and so it is slowly, still to this day, you know, growing in from lateral spread of the few sprigs that really did take hold down there, and so part, you know, absolutely amazing, and part, well, we kind of wish that area had gone better.

One of the big discussed outcomes of this project was that that coir log structure was not effective at containing the sediments, and keeping them off of that SAV bed, and so, you know, ultimately, that was buried, and remains buried, under about thirty centimeters of sediment, and so I don't know what to say about that, except that that was a, you know, regrettable outcome.

Obviously, there's a lot to learn about effective containment of these materials, but I think there's also, you know, kind of a discussion to be had about tradeoffs associated with these types of projects, and so, you know, to me, and I'm admittedly not in charge of, you know, regulating anything, but if -- Keeping that island in place for the long-term, and protecting that massive area of seagrass behind it, is probably worth the tradeoff, even though, you know, ideally, this two acres

would have been protected as well, but I think, you know, it's important to think about these projects, specifically when thinking about, you know, where are we going to do them, and what are the benefits, in terms of that much broader context than just the footprint of the project itself.

Then the last thing I want to say about these is that they're often just so dynamic, in the early stages, that I think it can be hard to see, you know, what the long-term outcome is going to look like sometimes, and so this is at Swan Island. The graphic on the left is Ryan standing in front of an area of low marsh, some of the low marsh that did take right away and start growing in, and that's Spartina alterniflora behind him. It's about six feet tall.

If you look at the picture on the right, that is also Ryan, standing in about the same exact location two years later, and so those plants came in, and they went wild, and then they died back, and now they're slowly, you know, marching across the island, and so it can be really hard to maybe understand what the full impacts and benefits of these projects are in the short-term.

Okay, and so, you know, I think kind of part of the take-home message here is there's already some pretty good guidance available for planning projects, and trying to optimize their outcomes. There's a lot of projects out there to point to. Essentially, if you have a really solid understanding of the site history, you also need to be able to, you know, justify your target elevation, and understand what ecological impacts of that will be.

You need to know something about the character of the available sediment. That's a big one, and have a monitoring plan, and, if we do that, I think, you know, there's a lot of opportunity out here, and we can be reasonably confident in the outcomes.

You know, just as kind of closing thoughts here, I think there's -- You know, there's still a lot of discussion around these type of projects, and a lot of reasonable hesitancy about, you know, going gangbusters on these type of projects, but, given the challenges to our marshes, in terms of sediment starvation and sea level rise, you know, not trying to build in and promote some more beneficial use is a big missed opportunity.

There's always going to be habitat tradeoffs, and I think, you know, that has to be part of that larger conversation about that broader ecological context for each project, and, you know, certainly no two projects are the same. There's a lot of guidance though out there, in terms of projects that are already existing in the ground that can help guide development of these types of approaches, and I will stop with that, and be happy to discuss further.

MS. CROWE: Okay. Thank you very much, Jenny. That was super informative. I really appreciated it. We have one question in the room, and you have a question, too? Okay. Kathleen, go ahead and go first. We're going to trump Wilson.

MS. HOWINGTON: All right, and then we have Scott online, actually, who has a question as well, and so I have a couple of questions in relation to the Deal Island presentation. What was the depth of sediment placed, and then, that straw berm, does that need to be permanent? Is that going to be something that just stays there, or is that something that slowly goes away with water current, and then, finally, what is porewater? I recognize that might just be me, but I have no idea.

MS. DAVIS: Sorry. Okay, and so let me make sure I get all these. Depth of placement there ranged from about eighteen inches, at the highest point, to, you know, maybe an inch at the lowest point, and, you know, that's often the case, that your depth of placement is hugely variable, because the underlying surface is usually variable, and you're, you know, essentially trying to hit an almost smooth elevation on top.

The straw berm, and so this is -- It's treated differently in different projects that I've seen. In this case, the straw berm is not -- They're not planning to take that out ever. The thought is that it will just -- You know, it's organic material, and it will slowly decay in place, and, by that time, hopefully the vegetation will have come in successfully, and densely enough, that, you know, there's no containment needed at that point, and so, you know, it was meant to be a temporary structure.

Then, third, porewater. Sorry about that, and so porewater is the water that is in the sediments, and so, you know, it can have a very different chemistry than the water that's coming in and out on every tide, but it's the water that's, you know, that's down there in the sediments, where all of that, you know, turnover, and decay of organic matter and whatnot is going on, but it's what the roots are touching, and taking up, essentially, and so it's the -- It's a good indicator of, you know, how much nutrient is available, or, you know, how many -- How much sulfide, how many potential contaminants, and, you know, it's what the plants are experiencing, essentially, the pore water.

MS. CROWE: Thank you, Jenny. This is Stacie, and I'm actually going to -- I'm going to jump in front of Wilson too, with a quick question, and so I was fascinated with those marsh mounds in Galveston Bay. I think that's really neat, that, almost twenty years later, that they are still there, and thriving, and are you aware if those -- If that concept has been used anywhere else?

MS. DAVIS: So I will tell you there's a ton of those in the Galveston Bay system. There have recently, more recently, and I would say maybe in the last five or six years, been a number in the Panhandle in Florida, and like near Project Green Shores I believe they recently put in some, and there were also some more recent ones, although I'm not sure that they were necessarily intended to be, you know, marsh islands in quite the same way, but there were some recently put on the Alabama coast. I'm trying to remember the islands off the north side, and so yes.

Not as -- You don't see it as much as you might expect, given, you know, how well these ones have held up. You don't see it as much as you might expect outside of Texas, but more in -- You know, I've seen some creeping in recently.

MS. CROWE: Okay. Thanks. It seems like they might do a lot better in a really low energy, like I guess a bay-type situation, but I'm just curious if that is something that might be able to be used on the east coast as well.

MS. DAVIS: Yes, and I think that's right, that they, you know, do better in a low energy situation. A couple of the other iterations that we looked at in the Galveston Bay system, you know, of that same project type, they had kind of intentionally build some sacrificial-type mounds on the outer edge of the project area, you know, with the goal that it would -- They knew they would take a beating over time, but they would, you know, give the vegetation on the mounds behind them some time to mature, and really be able to hold those other features together, and then, also, you know, essentially provide kind of a feeder, as they eroded, to add more sediment to those sites.

I don't know that we have a good understanding of just how high wave energy those, you know, can take, but I -- So there's the mounds, and there's also -- I've seen proposals for, and I don't know that I've seen anything like this go in on the east coast yet, but you know, things like marsh terraces, which are, you know, essentially the same concept, although I think maybe the -- You know, so that would be more like a ribbon, like individual rows of just small ribbons of marsh. It seems, and, you know, this is not my specialty, but it seems like the mounds are just -- With that shape, they are going to hold together better over time than the terrace-type approaches.

MS. CROWE: Right. It sure seems so, from the pictures you showed, and so thank you for that. I am now going to pass it to Wilson and then Scott online, after Wilson.

DR. LANEY: Thank you, Madam Chair. I'm going to refrain from making any Rodney Dangerfield comments here, but mama taught me that ladies always go first, and so I'm totally compliant here. The first thing is a comment, Jenny, and, first of all, thank you so much for the presentation. I think it's a great, and it's really good to educate us about these beneficial uses.

The first thing was a comment. I wondered whether or not -- Because I was trying to think of an example of sort of a natural thin layer placement, and it occurs to me that these over-wash fans, that we see on the Outer Banks in North Carolina, might be a good example of sort of a natural thin layer placement event.

You know, they're usually hurricane-generated, or Nor'easter-generated-type over-wash fans, and I wondered if anybody has looked into those from the perspective of the next question I'm going to ask you, which is, relative to the thin layer projects that have been done, has anybody looked at the impact, or response, of the infauna that would be there, and I'm specifically thinking of fiddler crabs and ribbed mussels, for example, are the two that came most readily to mind.

Then, sort of part B of that is have you or other researchers done any evaluations, and so you talked about seaside sparrows, but what about other birds that would be using the marsh for foraging, like clapper rails, or any of the wading birds, American egrets, great blue herons, and so forth and so on? Ibis, I guess, would be another one.

MS. DAVIS: Yes, and so, first off, the over wash fans. Yes, and absolutely those are a, you know, natural kind of TLP project, right? There has been some work on understanding those. Matt Kerwin's group, out of Virginia Institute of Marine Science, has done some work on that, as have others. I guess I'm kind of blanking on names right now.

You know, in those in a lot of those situations, those placements tend to be pretty deep, and on dune grass, and so, you know, it's a little bit of a different story, but essentially, yes, and, I mean, the over-wash fans are, you know, how those islands roll back, and the placement of material is how marshes grow, you know, and so you're just kind of simulating their natural process. It's more a question of how well can we simulate that.

As far as infauna, yes, there's been a lot of work on infauna, and particularly some groups in California that I'm thinking of, although not necessarily fiddler crabs, or bivalves, but more like, you know, kind of smaller polychaetes, and things like that in the sediments.

I will say, you know, we always, as part of our monitoring, and so, you know, what I'm showing you are some of the large-scale drone imagery that we collect, but we always do some transect-based monitoring across these sites, and, in addition to looking at vegetation, we always document, you know, bivalves and fiddler crab burrows, at least as they come in, and I can tell you that -- You know, it depends -- It's completely elevation dependent. The crabs come in pretty quickly.

Whatever is there, you know, whatever organisms are there, are certainly buried, and lost probably, as a result of this placement, but you do see the colonization of these, in most of these sites, very rapidly, and, as far as the bird usage, that is not something that my group focuses on. I know, you know, at several of these, several of the bigger sites that have been done on the east coast at least, have been on Fish and Wildlife property, and they've had a big interest in understanding that, and so that kind of work is going on. I'm not, you know, I'm not the person to talk about it, unfortunately.

DR. LANEY: Okay. Thank you.

MS. HOWINGTON: Scott.

MR. KATHEY: Hi, Jenny. One slide back, on that blue slide, where you have the considerations for beneficial use, I was kind of surprised by that statement, under sediment characteristics, that sediment matching with underlying substrate doesn't seem to be necessary in marshes, and it seems a little counterintuitive to me, because I would think, if you're not matching that substrate, then you could be changing the conditions that native infauna and vegetation are going to need to propagate there.

Let's say you have heavy sediments in place, native sediments, and you come in and put fines on top of that, and you may create turbidity that's not normally in that environment, also altering it, and so could you speak a little bit more to that finding that sediment matching doesn't seem to be necessary in marshes?

MS. DAVIS: Yes. Absolutely, and I will say, you know, I think all of the points that you raise are certainly valid concerns. You know, I think several of those are concerns, regardless of, you know, whether your sediment is matching what's underneath or not. I think, you know, I put that in there, as a consideration, from the perspective of I've often heard, in discussions surrounding these type of projects, that, well, we --

You know, we can't put sand in there, because it's a marsh. You can't -- You know, we need to only use the superfine sediments to build these marshes, but, in reality, you know, the plants -- If you put sand on top of a marsh, one of your big considerations is is it going to be so heavy that it compresses that substrate below, and so, you know, is it going to be hard to meet your elevation target, but what we see is that, you know, if you are building an intertidal marsh, plants tend to really like sand, because it drains well, and so, you know, they don't get as challenged with porewaters that don't exchange.

They tend to go gangbusters in sand, and so, you know, I put that in there from the perspective of I don't think that we need to think about, you know, we have to be limited to using superfine material, that looks just like what's in that marsh, and, a lot of times, you know, what you'll see is -- I mean, you're usually going to be using material from pretty close by, right, because it's

expensive to transport it very far, and so you're going to be having a natural sediment from your system.

If it's a little bit sandier, that's because, you know, when whatever shoreline eroded to deposit that material in the channel, the fine stuff got carried away, but, you put that sand back up on the marsh, and, in pretty short time, you know, those plants convert it back to kind of an icky marsh soil, and maybe just a little, you know, a little sandier than it was, and s not downplaying your concerns. I just think that having a strict criteria of, you know, you have to match those, in the same way you might think of it for beaches, is probably a little too limiting.

MR. KATHEY: So, in your post-assessments, you know, when you're going back after these have been in place for a little while, I'm assuming you prepared a baseline for vegetation, infaunal species, that type of thing, before the treatment, and have you seen appreciable shifts, or do you see it coming back to that same equilibrium over time? What's that look like? Do you have some kind of a bell curve there of change, or has that kind of assessment been made at all?

MS. DAVIS: So, yes, and I will say, in some cases, we have pre-data, you know, pre-placement data. It's often not as comprehensive as our post-placement data, because -- Well, for example, for the Galveston sites, you know, we had what was available in, you know, published reports, and so we weren't able to collect it. In sites where we can collect it, you know, in a number of these sites, they're almost impassable beforehand, and they're massive, and so we tend to have much more high-resolution data afterwards.

As far as things coming back, you know, the challenge is what you're creating is usually something that looks a bit different than what was there before, because you're usually adding elevation, and so you are selecting for a different set of species and, you know, conditions than what was previously there, and so, normally, you know, we're going to set those expectations of what that should look like based on maybe what another area in -- You know, what an existing habitat at that same elevation nearby looks like.

I would say, in most cases, aside from the example I showed you at Swan Island, where it was really -- You know, it took a long time for that low marsh to establish, we see it -- You know, it bounces -- I can't say it bounces back, you know, because it's not going back to where it was, but it moves towards what we're expecting, usually pretty quickly. I don't know if that answers your question, really.

MR. KATHEY: Actually, it does. You made some very good points there, that, if you're making that kind of a dramatic change from the degradation that's taken place in that habitat, then, yes, it's -- You're not going to see the exact same thing, because, if you're raising the elevation -- If you really wanted to compare to something, it would be like marsh at that elevation in the vicinity, and so that makes perfect sense. All right. Thank you.

MS. DAVIS: Sure.

MS. CROWE: Jenny, Paula, in the room, has a question for you.

MS. DAVIS: Okay.

MS. KEENER: Thank you for this great presentation. I guess it's for all of us, and, having heard all of these presentations this morning, it makes me circle back around to Anne's question, Anne Deaton's question, regarding living shorelines, and our AP definition of that, and so I'm wondering if -- I mean, in a way, this is -- It's not a shoreline, but it's habitat restoration, and so should our definition of living shorelines also be modified to include beneficial uses of dredge material? I don't know. I'm just throwing that out there.

MS. HOWINGTON: So I don't know if this is necessarily a definition of living shoreline, because that is -- Well, Jenny, can you go back? No, and that was on Anne's presentation. Give me one moment, Jenny. I think I'm going to make myself the presenter.

MS. DAVIS: No worries.

MS. HOWINGTON: I am the presenter. That's right. I'm glad that worked. All right. Let's look at our living shoreline, and so here's the question for the group. Looking at this living shoreline definition, does beneficial use of dredge materials, in the context of those two presentations that Jenny mentioned, because remember she mentioned the four different types of projects, and then talked mainly about these, but I guess this would also work. That may also work. Are these living shorelines, or would discussing beneficial use projects in our dredging policy be more of a realistic --

MS. CROWE: I'm going to jump in and say I don't think that these types of projects should be lumped in with a living shoreline. I think they're nature-based solutions, but they are different types of nature-based solutions, but I would be happy to hear what others have to say. Ben.

MR. THEPAUT: Stacie, well said. I'll definitely echo that. The living shorelines are not supposed to create upland.

MS. CROWE: Anyone else have thoughts on that in the room? Wilson.

DR. LANEY: Not exactly on that, Madam Chair, but I was still continuing to think about natural examples of thin layer placement, and I'm not sure this one is particularly useful, but the other place where it happens, on a routine basis, is in floodplains, you know, in river systems, because thin layer placement is very evident from all the photographs of the recent flooding in Texas, and also western North Carolina, after Hurricane Helene.

You know, that's one of the big things you have to deal with, if you have any sort of infrastructure or structure in a floodplain, is all the sediment that gets deposited there when the flood recedes, and so I don't know whether there would be anything to be learned from looking at, you know, studies of thin layer, natural thin layer, placement in floodplains or not. I just thought I would just mention it.

MS. CROWE: Thanks, Wilson. Scott, online, you can go ahead.

MR. KATHEY: It seems, to me, that the beneficial use of dredge material is a technique for habitat manipulation, rather than, you know, something that should be included in the definition for shorelines, because presumably you could use these techniques whether you're on a linear shoreline or whether you're putting in mounds.

It's just a technique to accomplish your goal, right, and so I don't know that -- Just like we don't spell out all these different techniques in the definition, you know, verbatim for all the different things you can do to adjust the shoreline, or treat the shoreline, we wouldn't include this either, specifically, but it's just another treatment option that's out there, or method.

MS. CROWE: Thanks, Scott. Jenny, go ahead.

MS. DAVIS: I was just going to say, I mean, I do think that's a really interesting question, and it's come up a lot, in the sense that -- Like we've got a couple of living shorelines here, one on the island here in Beaufort, where they had to, you know, place a bunch of material, and grade it, and then put a sill in front of it, and so is it a living shoreline project, or is it a beneficial use?

I mean, you know, a lot of times they go hand in hand, and I've seen, you know, for example, at our project in Swan Island, there's a small section of that northern shoreline where they put in some low structure, some, you know, concrete units to try to, whatever, help with the wave energy, you know, beating that material away that they had just placed, and so that often gets -- You know, people refer to that whole project as a living shoreline, the Swan Island one, which I don't think makes sense, but there's always that gray area overlap. It is a challenge.

MS. CROWE: Thank you, Jenny. Wilson has another comment.

DR. LANEY: Well, a question more than a comment. First of all, I agree with everybody else. I think, you know, beneficial use projects ought to be treated separately from, and not lumped in with living shorelines. The question for you, Jenny, is I know a lot of this work has been based on trying to re-establish, or maintain, historical habitats, and I was wondering if anybody has looked into whether or not there is like an optimal ratio of open water to mud flats, to things like the Galveston marsh mounds, that could be, or maybe has been, measured, or could be measured, in terms of enhancing nursery area use.

Again, I realize that would probably differ, depending on whether you're talking about an aquatic organism, like penaeid shrimp and juvenile fishes, spot, croaker, et cetera, versus wading birds, again, because they have -- They're going to be using the habitat differently, but it just occurred to me to ask that question, of whether or not anybody has looked into that, and maybe Erin might know the answer, from a standpoint of some of the folks at the Galveston lab.

You know, I know they've done a lot of work looking at nursery area use, and a lot of times that seems to focus on edges, you know, when you have a tidal creek distributary system within a tidal marsh, and I'm coming at this from the perspective of, historically, most of us are well aware that, you know, open water disposal was something that was frowned upon.

Well, is there a case where that could be beneficial, you know, if you, it you -- It would require somebody comparing the value of shallow water habitat without the marsh mounds, for example, versus shallow water with the marsh mounds, which creates edge effect, which might be beneficial to the wading birds and penaeid shrimp, for example. I don't know, just a question.

MS. SPENCER: I mostly only work on the stuff that's in the sanctuary, but I'm wondering if the folks there have some connections, maybe at like A&M Galveston or something, that they might be looking at that, and so I'll look into that.

MS. CROWE: Charlie, go ahead, and then Matt.

MR. DEATON: Charlie Deaton, NC DMF. Jenny, thanks for this presentation. We are looking at doing, in a broad sense, something with thin layer in the next iteration of the coastal habitat protection plan, and one of the questions that I've had, you know, looking at this and other presentations, is kind of this idea of, you know, you go to place the sediment on the marsh, and there's a wide range, or maybe I shouldn't say wide, but there's a range of elevations that you get at the end of the project, right?

You spray it out there, and you can't put it all at a perfect six-centimeter height, and so, with a couple of these, you said -- I think that, at the Freeman Creek, you were in the like two to fifteen-centimeter range for applications, and Deal Island might have been similar, and so I guess my question is, is that kind of a standard range to expect when you're doing these projects, in terms of elevation outcomes, or are we at a place where we, on the regulatory side, can ask an applicant, what do you think your total range is going to be, you know, if they come and say six centimeters is our target, do you have any thoughts on something like that?

MS. DAVIS: Yes, and you can ask. I think it's hard for them to know. It partly is definitely controlled by the type of sediment, and so it can be much easier -- You know, if you've got pretty fine sediment, that will distribute on its own, you know, it can run out there, and you'll get more of a level surface.

If you've got sandy sediment, and you're putting it out, you know, at the edge of a pump, or the edge of the pipe, the sandy stuff tends to fall out right where the pipe ends, you know, and then the finer stuff runs farther away, and so, you know -- But I think that the -- You know, the approach might be to say you can't go over X elevation, right, because there's some upper threshold where you're going to create a habitat type that, you know, is not what is targeted, and so, as long as your applicant has a really good understanding of -- I mean, they need it, really, to design a good project, right, and they need to really understand the tidal regime, and the way the vegetation is distributed across that elevation gradient, to make sure that they're hitting the right target.

I guess that's the way I've seen it kind of done in other states is, you know, here's the range, here's the range that we're going to target, because we know we're going to get this species, and then, you know, the regulatory community says do not go over X. It's just so hard to get a constant, a constant level, across an entire site.

MR. DEATON: Gotcha. Thanks. That makes sense to me, and I appreciate the thought about the sediment type influencing how level that's going to be, and, yes, that's kind of been the thought that I think has occurred to me, when looking at the first couple of projects we're working with, in terms of, well, maybe just don't go over this height, and I think some of the pushback is maybe, well, if we go over, that's future marsh elevation, and so, you know, just a question that I'm chewing through in my head of how to weigh that, because, sure, that -- You know, that's not necessarily a bad thing, but weighing that, and how we should push our applicants, and maybe that's not a question for you, but more a thought for the room, or whoever else.

MS. DAVIS: I mean, I do think it's a conversation that comes up a lot when you're designing these type of projects, is should you be designing for future sea level rise or for current conditions, and that -- You know, I guess that's more of a regulatory issue, of what's going to be permissible, but it -- Yes, and it's a challenge.

MR. DEATON: Gotcha. Thanks.

MS. CROWE: Matt, did you still have a comment? Okay.

DR. KENWORTHY: Hi, Jenny. Matt Kenworthy. I'll preface this question knowing that there's still a lot to learn. We're still in the very beginning stages of learning a lot of the dynamics of beneficial use, but do you think there's a realistic scenario of, or value in creating, like a beneficial use suitability index of some sorts, like we do in the oyster restoration world, you know, to help managers, regulators, whoever, kind of identify suitable areas for beneficial use applications? I know proximity to dredge action is a very big, important one here, but, long-term, do you think we can get to that point? Do you think there's a need, or value, of getting to that point?

MS. DAVIS: Hi, Matt. Yes, I do think, and I think there's been some interest, and some efforts, in that direction. That Manomet effort, that Anne mentioned in her talk, you know, was an Army Corps cooperated effort to figure out, you know, where are good candidate sites, and so there's always a challenge with these type of projects, in that, you know, sediments need to be moved out of a channel yesterday, and yet it's going to take us three years to figure out, you know, how to design the perfect project to use it, and so I think there's a lot of effort across all scales, you know, from SASMI to the Army Corps, to just individual researchers and trying to figure out how to put out that, you know, that kind of spatially-comprehensive map of these are areas that could really benefit from some additional sediment.

I mean, that's part of what our, you know, our kind of set data efforts were also targeted at, trying to understand where are marshes struggling the most. I think there's huge interest in having a product like that, and hopefully some preliminary steps are already kind of going on to get to that point.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Jenny. Wilson Laney. This sort of tags on to Charlie and Matt's comments, again, about the depth criterion, and so, going back to the infauna thing again, and I noted your point that, most of the time, the regulatory review agencies are saying, well, don't go over X height, whatever that happens to be.

Again, do you know if anyone has looked at -- In those cases where the receiving marsh does have an infauna component, is there a certain depth that would be contraindicated if a certain infauna is present? For example, the, you know, fiddler crabs are mobile, and excellent burrowers, and I would think that, if you're looking at impacts to fiddler crabs, versus ribbed mussels, for example, the crabs would have less of an issue with deeper sediment deposition layer than the ribbed mussels would, for example, and I didn't know whether anybody has looked at that or not, from an infaunal perspective.

MS. DAVIS: You know, that's a good question. There's definitely been some work on, you know, how much placement depth is too much, you know, for those existing infaunal communities to continue, you know, to survive there. I'm not super well versed in that literature, and so I'm, you know, going to kind of talk based on my own experiences here, and what we've seen, and that is that, you know, I suspect that infauna -- They tend to recover pretty quickly.

I mean, we've seen that in, you know, the sites that we've worked at. We see fiddler crabs come back very rapidly. It's probably not -- My guess is it's probably not the same fiddler crabs that were there before. They just come back and recolonize that site, and, you know, the placement -- In that scenario, the placement depth matters much less than the elevation that is created, right, because the fiddler crabs tend to -- You know, you see the most of them kind of towards the upper edge of the intertidal, and so that's where we see them, in the -- You know, in the newly-placed sediments as well.

They start to come in and colonize that created elevation band, and so my sense is that, yes, you're not having a lot of persistent infauna, but they do recolonize very quickly, and that recolonization is very dependent on the elevation profile that you create.

MS. CROWE: Go ahead.

DR. KENWORTHY: Jenny, it's Matt Kenworthy again. Sticking with kind of the ecological side of this, through your knowledge of beneficial use projects so far, do you know if anybody has been looking at kind of the transfer of energy nutrients off of created marsh platforms, and, you know, the dynamics between the newly-created habitat and then, you know, the surrounding, you know, fauna?

Thinking about in Texas, there's a lot of work done, you know, looking at stable isotopes, and contribution of different sources to the nekton community, and a lot of that is focused around marsh and mangrove resources, and also similar work done in other places, but I've been curious how that's been looked at, if it's been looked at, in any of these beneficial use -- I'm thinking more like the large-scale ones.

I know a small-scale project is probably not going to have that much impact on the larger nekton community, but, with some of these other bigger projects, are you aware of anybody that's been looking at that? Is there any insight into that, and how it might be impacting other resources?

MS. DAVIS: You know, Matt, that's a great question. I am not aware of anybody that has been doing that, which, you know, certainly doesn't mean it's not happening. I have seen, at at least one of the sites we're working out, there were some folks that were, you know, very interested in doing eDNA work, to just try to understand who is there, but nothing -- No isotope type work to understand energy transfers. I think that's kind of a fascinating topical area, though. Your question makes me want to kind of dig into the literature and see if I can find anything like that, but, unfortunately, I don't have a good answer for you on it.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair. Jenny, some of that work, and, Matt, some of that work was done at North Carolina State University, by Ernie Seneca, Udo Bloom, Leon Kamen, one of

my grad student classmates back in the early 1970s, and so there is some historical literature on it looking at salt marshes in the Cape Fear River estuary. Trish may remember some of that work. I think Sea Grant may have funded some of it, and I'm not sure.

Anyway, I've got -- I don't know that I have any digital copies of it. I've got hard copies of some of that, some of that work, and Leon's PhD dissertation, I think in particular looked into that. He was looking at that sort of question, and so, again, historical work, but I'm not aware of anybody that's looked into it recently, but it's exciting to hear that there's some eDNA work going on. I know that's a new tool, relatively new tool, that's being applied all over the place, and so it's exciting. I look forward to hearing some of those results.

MS. HOWINGTON: All right. I think -- Thank you so much, Jenny, for coming on and giving this presentation, and I wish Molly the best. I know she's on maternity leave, and I know -- I hope she's getting lots of sleep, hopefully, and relaxation. We are now going to move on to this presentation, try and get finished, and break for lunch a little bit late. We are, for the first time since I've taken over the Habitat AP, running late. I'm so proud of you guys.

We've already kind of figured out a reorganization plan for the afternoon. Brian Hooker is online right now. Brian, are you okay giving your presentation after lunch? You should be unmuted. You're not. Sorry. Brian.

MR. HOOKER: Sorry. It took a minute there to get the muted, authorized, and unmuted. Yes, and I can -- Let me just -- I did have some things come up, but, so, assuming we have an hour for lunch, roughly 12:00 to 1:00, yes, I should be available from that like 1:00 to 2:00 time period, or is that what you're thinking, that 1:00 to 2:00 time period, or --

MS. HOWINGTON: We were thinking more 1:30 to 2:30. Would that be okay?

MR HOOKER: Yes, and I can make that work. Okay.

MS. HOWINGTON: All right. Awesome.

MR. HOOKER: Thank you.

MS. HOWINGTON: Okay, because this should be relatively short, since we have covered a lot of beneficial use of dredging materials. I'm going to remind you guys why we're talking about this. It's not just for our information, because these consults are going to be coming up more often, and, you know, potentially, do we need to add this into a policy, and do we need to write something up for the council, but it's also because, in October of 2024, when Jordy gave her presentation, she emphasized that, back to what Jenny said, the site selection of where are these good sites, where do they come from, there was not a huge grouping of information on that.

She actually came to us with a request of would the HE AP be willing to receive some of these presentations, to be able to kind of create a supportive knowledge base for these projects, impacts for future consults, and now, unfortunately, Jordy has now left, but we do still have Anne Deaton, and we do still work with HCD, and so I felt like it was important to continue to work on that, creating that supportive knowledge base, and see if, you know, we can't make certain that they feel like they know what they can consult on, and what they can comment on.

There were a few things that you guys led me to during that conversation, of go look into this, and one of them was Jekyll Island thin layer placement project. Again, we've already kind of been over the details, and so I'm just going to give you the more generalization. In April 2019, a contractor from dredging in Jekyll Island Creek, took that sediment and put it into the Donning Musgrove Causeway here in St. Simon Sound.

As you can see, there were actually two locations north of Jekyll Island, and then a five-acre area of marsh off of Jekyll Creek. I believe this is actually the Jekyll Creek location, and, by 2024, nearly 80 percent of the marsh grass had regrown at a higher elevation, expected to be fully restored in the next five years, which is pretty -- You know, a fantastic project. This was as of 2023.

While I was reading that, I then got to go down a fun little rabbit hole, and so the other place that you guys sent me was South Carolina Sea Grant. Now they are actually developing a framework for assessing benefits and feasibility on thin layer placements. This started in 2023. They're hoping to end in 2024, and, basically, what they're hoping to do is create a model framework that you can go in and determine economic and regulatory feasibility on certain locations, and create this framework where you can say, hey, this is an area that marsh has been lost, and is this a feasible location.

I don't know, now that I've seen the presentation from, you know, Jenny -- I'm assuming they would also come up with recommendations of you need to put hay bales out, and you need to do this type of sediment, but, since it has not been finalized, this is all very -- It's here are our goals, and here's our timeline, and so I'm looking forward to seeing what that project does.

While I was reading that project, I discovered this one, and so this is the U.S. Army Engineer Research and Development Center, which I had never heard of before, but now I have, and they actually created guidelines for how to approach thin layer projects, which is very cool. This was done in 2023. They create, or they provide, tons of very specific recommendations, specifically on how to do steps on how to create these projects. It's a very interesting read. If you're interested, it's linked there.

Then, while I was discovering all of this, I got an email from one of our AP members. It turns out North Carolina is also doing a literature review on thin layer placement. Currently, that literature review contains twelve documents, that have all been forwarded to Anne Deaton and HCD to be able to try and help build that knowledge base on thin layer placement. This is not a beneficial use umbrella. This is specifically thin layer placement, and they're actually going to come up with potentially some language to put into their coastal habitat protection plan.

With all of that research in mind, I could have kept going down the rabbit hole. I chose to stop myself, because that's very easy to continue going. What specifically, and I wish Anne Deaton were on, but, unfortunately, she is not, because I really do feel like I would love to get her input on this, or Pace.

MS. DEATON: I'm here. This is Anne. I'm here.

MS. HOWINGTON: I'm sorry. I moved you to organizer, because you had to present. That's my bad. All right. Anne, you are here.

MS. DEATON: But I wondered -- Were you talking about Charlie Deaton, and not me?

MS. HOWINGTON: No, and I was talking about you. You're good. Since you are our Habitat Conservation Division representative, and since this was pioneered initially by Habitat Conservation Division, to try and gather information on beneficial use projects, with the projects that I just highlighted, that are going to be creating frameworks that have to-do lists on how to create these thin layer placements, with the knowledge of what Jenny Davis has presented, do you feel like HCD has that knowledge base to be able to reference, and highlight, if they are creating comment letters, or do you feel like the Habitat AP -- Do you want to request the Habitat AP continue to gather information and get presentations on stuff like this?

MS. DEATON: I think totally it would be great if the Habitat AP gathered more information on this. We have information, just from, you know -- But not -- We haven't had time to like synthesize the literature, and do some type of a summary document, and right now is kind of a bad time for that, because we're understaffed, but we could.

I was also going to say that you should look at the links to the Manomet, because they do like -- As somebody was talking, it includes like rating, and how they rated like high, low, medium feasibility of different aspects, and so it does have a lot of information there. Your question is can HCD do a synthesis, or do we need more information for reviews?

MS. HOWINGTON: So, like I said, the initial request was just try to stockpile information to give to HCD, which I recognize that you all do not have the manpower to do a synthesis anymore. This is the problem of, you know, this was requested last October, but the initial request was to try and create just a supportive knowledge base, and that's the language that we used, where you guys felt like, if a beneficial use project comes across your desk, you have, between the knowledge of what Jenny Davis has, between the knowledge of this South Carolina Sea Grant model, which you'll have access to in 2026, this 2023 study as well, and then this 2026 literature review -- If you guys have access to all of those things, do you feel like you're going to be able to produce a knowledgeable comment letter on beneficial use?

Specifically, I'm going thin layer placement, because that seems to be where most of the dredged material goes, or I think my question is we have now stockpiled, and what do we do with this information? Does HCD feel like they're good, and they can just reference back to it, or do we need that synthesis paper, because, if so, then we need to determine who's in charge of it, and I think that was supposed to be HCD. I don't think it can be anymore.

MS. DEATON: Well. Okay. It depends on the due date.

MS. HOWINGTON: There's no due date on this. This is a request from your office to us. We've given you the information. Now what do we do with it?

MS. DEATON: Okay. Also, I was just going to say that Charlie mentioned that the update on the CHIP is going to have something about thin layer placement, and so that might -- Charlie, would that be like an issue paper?

MR. DEATON: In terms of what's in the CHIP, we envision this being some sort of an issue paper. I don't know exactly what will be contained in that yet, other than literature, and hopefully some next steps, but that is the direction we're moving.

MS. DEATON: So that would be a great source, and then we could work together, and take whatever you guys put together, and then maybe just put it into a format to help with consultations, and so maybe together we can do it.

MR. DEATON: You'll start getting more emails from me about it.

MS. DEATON: Okay.

MS. CROWE: Paul, go ahead.

MR. MEDDERS: I'm just going to say, just to go on record, it seems, to me, because we keep parsing out beneficial use and thin layer placement, that it needs to be beneficial use level, and not just thin layer placement. That Jekyll project was in our backyard, but they also are -- We're talking about another beneficial use project, that's just sort of sand energy, sand engine, whatever they call it, where they're going to put it there, but they expect it to disappear, much like the other project, where they put it in the hole, which concerned me, because nobody knows what those holes are, and how important they are, but I've been saying that every meeting where that happened.

Then, just to say it, since I'm talking right now, we're working with -- I didn't know this, but, in Georgia, and it may be different other states, DOT owns these dredge sites, where the dredge spoil goes. The Corps is responsible for it, but the DOT owns it, and we're working with DOT and Georgia Tech right now, and they're trying to come up with some beneficial use projects that would make oyster restoration, or offshore modules, turning sand into concrete making, and so we're working on that right now, with the idea that you could do some oyster restoration-type work and make something like pallet balls for offshore. I just -- I want to just say let's keep it at the benefit -- If something gets developed by this group, that it be at the beneficial use level, and not just thin layer level.

MS. CROWE: Anyone else have a comment, or question? Wilson.

DR. LANEY: Well, it just occurs to me that there might be a possible collaboration between the HE AP and the ASMFC Habitat Committee, since they're in the business of producing all of those habitat management series documents, and so, from your review, Kathleen, and from Jenny's review, it looks like there's a fair amount of information beginning to be generated about criteria, and certainly studies of the vegetation have -- It sounds to me, Jenny, have been much more predominant than the infaunal work, and/or the wading bird use and things like that, which I think are going to be a very great interest to ASMFC's Habitat Committee, as well as this advisory panel.

I'll just take that as an action item, on my part, to touch base with Simen Kaalstad and say, hey, do you think this might be something that -- Because we're always looking for future habitat management documents to produce at some point, and so this one might fit, you know, that model, and might be beneficial at some point, especially if the implementation of these sorts of projects keeps increasing.

MS. HOWINGTON: All right, and so it sounds like, Charlie, you'll reach out to Anne, to try and help her with that. If you need assistance, please reach out to me, and I will also help. Wilson, it sounds like ASMFC might be a place where maybe we could try and synthesize this in the future, when some of these studies do finish coming out.

My last question is for the group, and Manomet keeps being brought up as an interesting kind of topic of conversation. Do you want me to reach out and see if we can get a talk from them? I'm already getting the thumbs-up. Okay.

I've just been informed that their website is not the most intuitive, and so maybe getting someone in-person, or via webinar, might be a good idea. All right, and I will try to reach out to them and see if we can't get something for either winter or summer, and we can add that to the workplan at the end of the AP meeting, and so, with that, it is 12:01. I cranked that out. All right.

Now, because we have to walk, and, unfortunately, the hotel -- Unless you want to go to Chili's, which does have some pretty solid quesadillas, and they're fine, you do have to walk, and so we are going to be taking an hour-and-a-half lunch break, and so come back at 1:30. We will start with Brian Hooker, and then we will move on to AECOM and discuss subsea cables.

If we are running late this afternoon, we will postpone our resilient fisheries project until tomorrow morning, and we will allow the loss of CEFI conversation with Matt McPearson to occur this afternoon, and then, in the morning, we will start with resilient fisheries, but that's only if we're running late, which technically we are, but that's okay, and so with that, everyone, we are on break until 1:30.

(Whereupon, a recess was taken.)

MS. HOWINGTON: Good afternoon, everyone. We are going to be starting off with Brian, who is -- One second, Brian. The thing keeps hopping around. You are unmuted on my end. Are you there? You have to unmute.

MR. HOOKER: Sorry. There was a pop-up that was like do you want the computer to allow your access to your microphone, and I keep having to press that, and so I was like -- Yes, I am here.

MS. HOWINGTON: Awesome, and you want to present from your computer, right?

MR. HOOKER: Yes. and, if it fails -- I think I haven't made any real changes to the presentation, and so, if for some reason there's an issue, we can, you know --

MS. HOWINGTON: So there is an issue. You've signed in on the web browser. Do you have the desktop browser?

MR. HOOKER: No. I do not have that installed, I don't think.

MS. HOWINGTON: So you have a choice. You can sign off and try to download that, real fast, and move to the desktop, or I can present, and you can just tell me next slide.

MR. HOOKER: How about you present, because I don't believe I can install much of anything on my computer without IT's help.

MS. HOWINGTON: One moment. I just realized one of our -- That is the wrong thing. First off, I have presentation slides, and so I'm sharing the wrong thing, and, second off, I need to turn on the other projector. Okay. No, I don't want to resume the slideshow, because you picked the wrong -- All right. Does anyone know how to do this without presenter settings? Stand by, everyone.

MR. HOOKER: This is where we just play the Jeopardy theme music at this point.

MS. HOWINGTON: A little bit. It's refusing to switch screens, but I can just switch screens myself, but then people here can't see. You see where the problem is. Slideshow. There you go. There we go. All right.

MR. HOOKER: There we go. Okay. All right. Let me make sure now I've got everything right on my end, so I can see my notes. Okay. Hello, everyone. My name is Brian Hooker. I'm the biology section supervisor in the Office of Renewable Energy Programs with the Bureau of Ocean Energy Management, but I've been a member of this advisory panel for several years now, and sorry I can't be there in person with you. It sounds very lovely down there. It may be a little hot, as it is through the entire east coast, but, anyway, so, without further ado, let's proceed to the next slide. There it goes.

Kathleen asked, you know, to get an update on the Coastal Virginia Offshore Wind Project, which is offshore Virginia, kind of the Norfolk, Virginia beach area there, as you can see on that map, and, last summer, we experienced, for the first time with any offshore wind construction project, an occurrence of -- You know, a mass fish mortality event with Atlantic croaker around the construction activities associated with the project.

As you can see on the slide, wind turbine generation, and that's WTG, wind turbine generator foundation installation, and we have lots of acronyms here, began in May of 2024. There's a total of 176 wind turbine generator foundations, and the first observation of deceased croaker occurred back on May 25, and so, you know, pretty early in the spring, after the construction season opened.

There's generally a prohibition on the winter, and very early spring, on the construction season, due to the, you know, potential presence of ESA-listed species, primarily large whales, and so May is the earliest they can get started down there. The 2024 construction season ended in November, and the 2025 season began in this May.

For the purposes of this presentation, we're defining what we mean by, you know, an observation pursuant to the biological opinion, and, in our biological assessment, there's a requirement for protected species observers, and, as you can see in that box above the image of the turbine, we already have -- We recognized early on that there is always the potential, when you're introducing -- When you have a lot of construction going on that, you could have injury, or mortality, to fish species, and so we have a lot of reporting of, you know, any interactions with protected species, but we have a special -- From the beginning, we've always included a requirement for the reporting of non-ESA listed fish.

Again, it's just a notification process, where it's like we get notified if there's more than ten dead non-listed ESA fish within the shutdown or monitoring zones. The monitoring zone is quite large. You can see the circle and protected species observer vessels that are greater than three nautical miles from the turbine location, and another one on the turbine installation vessel itself.

The number of fish is just based on the protected species observer estimates, and the -- Sometimes you could have an event, a single event, that's reported by multiple vessels because, as you see, there's two support vessels and one installation vessel, each with PSOs onboard, and so you could have a situation where multiple PSOs are reporting the same event. Then, lastly, it wasn't 100 percent croaker. There was also some spot that were mixed in, but it was predominantly croaker.

Looking at my notes here, I guess one thing I did want to say, regarding how the protected species observer works, is they begin monitoring sixty minutes immediately prior to commencing vibratory pile driving foundation installation.

This is a little different with the CVOW project, where they do a little bit of vibratory piling, to get the pile set, and then, they switch off the vibratory hammer and put an impact hammer on, and that's called the hammer switch, and that's when they, you know, begin the pile driving in earnest, and so, if you hear me mention something about a hammer switch, or vibratory versus impact, that's because, with this project, they have two different installation methodologies, the vibratory and the impact, and then there's even a pause when they, you know, switch from the vibratory hammer to the impact hammer. Vibratory piling is less than a half an hour, and the impact piling is, you know, less than two hours, generally. I would think that was the last thing I wanted to add on, how those observations occur, and so the monitoring of the zone begins sixty minutes prior to that vibratory piling. All right.

In 2024, there were thirty-nine observations, at twenty-four different foundation locations, and so they were kind of spread throughout that red box there, that we have as a subset of the lease area. Observations occurred at approximately 30 percent of the installed foundations, and there were no observations in July or September.

We did try to take a look at, you know, when these observations were occurring, to try to understand what the cause of these observations were, and so we have in here, you know, what I was referring to with the pre-installation, and so that's the graphic there that one of our former employees generated, showing the bubble curtain, because there -- I have a slide showing you the bubble curtains shortly, but there's a bubble curtain, and that's a noise attenuation device system, that's required under the Endangered Species Act consultations and the Marine Maritime Protection Act permit that's issued by the National Marine Fisheries Service.

Anyway, and so that's showing you the pre-installation. It's just ensuring that the bubble curtain is working properly, and there's a clearance period. Then there's the vibratory hammer period. Then they switch hammers, and there's an observation period during that switch, and then the impact hammer occurs, and so we tried to look at, all right, when were these observations recorded, and, as you can see here, a lot of the activity was in that pre-installation.

Percent of observations in pre-installation was 38 percent of the observations, and the number, total number, of fish also had the largest number in that pre-installation period, but there was also observations during the just no construction, like during transit, or movement from one position to

another, that were observed by PSOs, and then some also during the vibratory piling, and then some during the hammer switch, and then also some during impact piling.

This right away was curious to us, because I think our assumptions would be that we would see the most observations during impact piling, because that's the loudest, and the most amount of energy that is being introduced into the environment is during that impact piling period. Okay. I think that's all I wanted to say there.

What we're trying to do is, again, show the proximity of these observations to different activities, and so, during pre-installation, you could see that, you know, observations were occurring inside the bubble curtain rings. This one has -- It deploys a double bubble curtain, a DBBC, and so a lot of those observations are within, or immediately adjacent to, the bubble curtain, and you can see also, you know, with the different activity, where they occurred.

As you can see with the impact piling, there's not showing any -- I think the next slide will show where some of the observations were occurring and the impact. There might have been one very close to the -- Yes, and so there's impact. During impact, that far right, you can see that they were much -- At a much greater distance, like over two kilometers away, and so being observed by the PSOs that were in that three-kilometer area. That, again, leads us to believe that we're looking at likely drift from areas closer to the pile driving activity.

Okay. I think we can -- All right. I did want to say that the first bubble curtain ring is about eighty-five meters from the pile, and the second bubble curtain ring is about 125 meters from the pile. I think those are just other points of reference there.

Here is an actual aerial view of the installation vessel. I don't think this picture was -- I think I actually --No, and I take that back. I think this might have actually been taken at the CVOW project location, but I'm not 100 percent sure of that, but it is this -- t was provided by DEME. That's the contractor, and that is the same vessel, the Orion vessel, with the double bubble curtain deployed, and so you can see the total diameter of the different bubble curtains.

So, we did -- Dominion has been a wonderful partner to work with. You know, as we learned to investigate that, they were able to really record, you know, transmit to some -- To their protected species observers different data fields. Once, you know, we started from the very initial, you know, question, we started -- From the initial report, we started, you know, then having questions about additional data fields that they could be reporting with future events, and they, you know, began reporting, you know, pretty detailed information about what activity was occurring, and the exact location and all that, which has been immensely helpful in understanding some of these occurrences.

They even were willing and able to collect some samples, and so, we coordinated. They did collect samples. We coordinated that data view with both Dominion Energy, DEME, BESE, and we worked with experts at the Virginia Institute of Marine Science and NC State and NOAA Fisheries to identify probable causes, looking at -- We did necropsies, looked at the pathology, looked at the acoustic data.

All of these piles require abbreviated or thorough sound field verification, and so we're -- We have information acoustically, from the acoustic recorders that are deployed during construction, as part

of the monitoring, and, in addition, the National Marine Fisheries Service, coincidentally, had a project, that was also kind of in the far field, collecting acoustic data as well, just as part of a separate study.

We have continued to coordinate with NMFS on the analysis, but the necropsy, you know, reports indicate, you know, acute trauma, and signs of barotrauma, and a definitive cause for the skeletal trauma is not grossly or histologically evident, and so, ultimately, what this information has brought us to believe, you know, given what we've seen so far, I can get into this more during the question and answer, but it seems to be that the issue is more with the bubble curtain itself, and, you know, perhaps interaction between the animals, the croaker getting caught in the bubble curtain, rising rapidly to the surface, or the capitation and the explosion, the popping, I should say, of the bubbles themselves, as they rise to the surface, causing, potentially causing, some of that trauma as well, but, anyway, we'll hold off on more of that until during the discussion. Okay, and we did -- You know, we have -- Well, I think I'll stop there and, you know, talk about this slide.

We did try to look at some of the, you know, other types of, you know, factors that might be contributing to this occurring, and so we tried to look at the time of year, the water temperature, the sediment type, the construction and activity, duration, sound levels, distance, water turbulence, all of the above, and we really couldn't see any clear, you know, clear trends, other than what was already evident in some of those previous slides as to when the activity was occurring, and, because there was such a preponderance of observations during the vibratory and pre-construction period, it really did, you know, point a finger at something being other than, you know, impact piling.

The one slide that didn't get in this deck, that I did add, is that I did have an update from 2025. As of last week, when I sent this presentation, we had not had any observations of deceased croaker at the CVOW project at all for 2025. However, on July 8, we did have another sighting of approximately forty croaker within about 100 meters of the pile, and, again, that occurred during the pre-clearance, and so there was no pile going, no pile driving going.

Then, immediately, the next day, on July 9, we had another observation within fifty meters of the pile, during that vibratory piling period, an estimated number of animals of approximately 200, and they were able to actually send some neat photos of that, and showing a lot of shark predation on the croaker, you know, as well during the event. Okay, and so that was the latest and greatest as of July 8 and 9, and actually even through today. There hasn't been any since then, and so, right now, as of 2025, there's just the two additional observations.

The slide that Kathleen had on there before is just, you know, showing some of the research that we have ongoing, and a link to some of the information showing at the CVOW research project, which is a project that was completed a few years earlier, and those are just -- It's a two-turbine project located directly adjacent to the CVOW commercial project, and, in there, we have a lot of, you know, information on, you know, some of the, you know, observations on the benthic habitat, or the use of the habitat that's created by those two foundations, showing some of the epifaunal growth, enumerating that, as well as documenting some of the species observed during those field operations.

There's a link there in the slide to that report, if you are interested in learning more about the types of things found there. I think, very briefly the -- So there was a -- I think some take-homes from that is that the vertical zonation of the biofouling communities was most apparent during the final

survey visit. This was back in September 2022, corresponding to after twenty-seven months after the installation of the foundation, and so there was really a lot of growth in that twenty-seven-month period.

On that occasion, there was, you know, sparse and patchy growth of biofouling on the uppermost twenty-one feet of the foundation, and much thicker growth of biofouling at depths below twenty-one feet, and so, at twenty-one feet too, I think you're starting -- You're in an area that's likely agitated more by wave action, and, when you're getting below twenty-one feet, you're getting to more, I think, stable depths, and so for the biofouling communities to proliferate and be greater.

Black sea bass was the most conspicuous species throughout the monitoring campaign, and it appeared quickly at the sites of the foundation, five months post-construction. Sea bass were observed on occasion in very close proximity to the foundations, where they may have been feeding on the fouling that was present, but it was not confirmed.

They were observed in every ROV deployment at the foundations, and over the surrounding rock scour protection, suggesting that there is a resident population at the CVOW research project. There's also spadefish and sheepshead, commonly recorded in June and November, but were absent in February and April, reflecting a likely seasonal distribution and movement of usage seasonally of the site. The species appear to be using the foundations for orientation, rather than feeding, but that's not confirmed either.

There was dense shoals of juvenile pelagic species, mostly scad, mackerel, and jacks, recorded in the fall, circling the foundations, or within the surface waters within ten meters, and it wasn't certain if there was any relationship between the schooling behavior and the foundations. It could have been used for orientation, or foraging, but they, nevertheless, demonstrated some usage by pelagic fish, as well as some of those more demersal structure-oriented fish. Okay, and so that's the summary, quick and dirty, from the RODEO Project for the CVOW research project.

Next is a short, or well, a somewhat short video . This is actually from, I believe, the CVOW commercial project, kind of really showing a lot of what I was just discussing. This must be CVOW research, because I think it says 2020 up there. Is that what that says? There is -- As this goes on, they do a good job, I think, of showing the extent of the -- Yes, and so 2020, and so that must be the CVOW research project.

I think, as the video progresses, you'll see the camera pan, and really go out over the scour protection, and so it will give you a good sense of the rock scour protection that is deployed at these facilities.

MS. HOWINGTON: We just jumped to 2022, for the people online.

MR. HOOKER: Okay, and so it’s a -- It’s a greatest hits. I think I do remember -- Dominion provided this to me, and I think I do remember him saying it's a kind of a greatest hits here, and so you can see some of the difference, even between 2020 and 2022, with the mussel growth, the blue mussel growth, on there.

MS. HOWINGTON: The people online can't hear us, but we're all muttering about what fish are on there, and the fact that we want some music in the background.

MR. HOOKER: It was kind of on my list. I think I gave Dominion a bit of a hard time, that, yes, there wasn't a nice soundtrack associated with it, and so now we've jumped back to 2020, and it must be on the other foundation, and so that's why you're seeing less epifaunal growth, because we just jumped back in time. If you want to go a little more quickly, I'm pretty sure, near the end, they do kind of really pan out over the scour protection, if I recall correctly, so you can kind of see how that looks.

AP MEMBER: I'm curious, and how wide are the laser points in the image? What's the space?

MR. HOOKER: I don't know, and I would have to ask.

AP MEMBER: I'm just trying to size up fish in here.

MR. HOOKER: Yes. Now we jump back to 2022, or forward, back forward to 2022, or back to the future, and is that what it is? Back to the future?

MS. HOWINGTON: We're on 2022 right now, but there is a little laser, right here, that's meant for measuring, and then here's the scour area outside.

MR. HOOKER: Here we go. Here's the scour, and so, anyway, I thought -- There's a lot of questions, oftentimes, about, you know, the size of the rock used, and the extent of the scour protection. The scour protection does go out, you know, I think close to twenty meters from the base, and, as you can see, there is plenty of like interstitial spaces, and, you know, areas that fish can hide in, and that animals can attach to as well, and so, anyway, as we're -- I can take any questions now, while this is playing its way through, and we don't need to --

MS. HOWINGTON: I mean, you're playing a video of fish and habitat to the Habitat and Ecosystem AP. We're kind of happy.

MS. CROWE: Wilson has a question for you.

MR. HOOKER: Great.

DR. LANEY: Hi, Brian. It's Wilson, and so the hypothesis, if I heard you correctly, is that the croakers are getting caught in the bubble curtain, and transited from some depth up to the surface, which is possibly causing that barotrauma. What's the -- What's the delta depth change there?

MR. HOOKER: Oh gosh, and I have that in one of the -- Let's see what the -- I know that was one of the things we looked at. I think it's around twenty meters, Brandon is chatting me and saying it's sixty. I don't think it's -- Sixty feet. Sorry. I think it's -- Let me -- I think it was on that one where we had the different -- We did look at it. I know we looked at depth. Let's see here. Yes, and I think it's somewhere in that range, Wilson.

MS. CROWE: Matt, go ahead.

DR. KENWORTHY: This is Matt. Great presentation. I know this was focused on croakers being the species identified, but, in the hypothesis behind it, with the bubble curtain, what about

everything else down there? I guess, at this point, it was barren substrate, and so maybe it wasn't a high abundance of other species, but, theoretically, there's other stuff out there in the same area as the croaker, and so any hypothesis on that front?

MR. HOOKER: Yes, and, I mean, it is something that we've thought about. There could be, you know, some fish without swim bladders, that don't float to the surface, right, that -- You know, that somehow could get caught and just stay below a thermocline, or stay on the bottom, and we don't have a way of really knowing what other species might be there, if they're not floating to the surface to be observed, and so that is, it's-- That is a possibility, but, again, the kind of the unique thing in this is that that vessel -- I don't know if you want to shift to go back to that picture of the overhead of the vessel and the bubble curtain, but there's a lot of activity going on, right?

You know, so what we're struggling with, and some of the assumptions we have in our assessments, is that, you know, that vessel isn't anchored, or jacked up, and it's on a, you know, DT, directional thrusters, and so it's got all these thrusters going to keep it in place. There's another barge with the generators to run the bubble curtains, and so that's what that vessel is in the foreground, and then you have the activity of the deployment and the rising of the bubble curtains themselves.

You would think that most animals would say, hey, I'm getting out of here, and this seems to be something going on that I, you know, want to potentially move away from, and, you know, we do have some general assumptions that that is the case for most species, and, with the croaker, what we're trying to figure out is, you know, the bubble curtain, the hoses, are often deployed the night before, and that bottom disturbance, the disturbance of the sediment with the deployment of those hoses, we're thinking could be an attractant, in some way.

We did try to do a stomach analysis, although I think, of the croaker that were collected, that didn't reveal much. It wasn't like, you know, really full stomachs, but it was a little inconclusive, because of, you know, the number of days that it took for the samples to make it back to the labs, and they weren't frozen immediately, and they were just put on ice.

There's, you know, a little unknown about how well to take those, that analysis of the stomach samples, but that is -- It's a curious thing, is like why would these animals, you know, choose to be in a very active construction area, and like I said, it's not like an immediate, all of a sudden, type of thing. There's a lot of activity occurring while they get that foundation -- Move that foundation into place on the sea floor, and get the piling done as well, and so, one, I can't discount that there could have been other species there that did not-- That were not observed, and, two, what the attraction was for them that did not want them to move out of the area when all activity was occurring.

DR. KENWORTHY: So, as a follow-up to that, and I'm trying to recall it back to our previous presentations that we received here at the HE AP, and, before all this construction and development and the engineering and design phases, there was monitoring going on, I think. I can't recall what all the monitoring was, but I guess my question would be is there fish monitoring data from like this general region, just to get an understanding of what, at this time of year, when we saw this impact to croaker, is there data to suggest what the remainder of the fish community is, to get an understanding of what was not impacted by this? It's not really a question, and it's kind of a just thought, to, you know, paint more of the picture of this story.

MR. HOOKER: Yes, and that's a great question, and so the primary work that we supported, that BOEM supported, was some fish telemetry work, and so the telemetered fish were mostly, you know, larger animals, like sturgeon and sharks, and so we do have some really good information, and we actually just finally published that report, and I will drop that link into the chat, that we just published, and that was all pre-construction. It was like over five years of pre-construction monitoring for the entire lease area, through animal telemetry, but the developer too is doing monitoring of black sea and conch in the area, in the lease area.

MS. CROWE: Thanks, Brian. Paula has a question.

MS. KEENER: So croakers croak, and I don't know of any of the other species that we observed here that croak, and so I'm wondering if this adaptation in the croaker has something to do with the selected mortality, and not the effect on -- Not a similar effect on other species. I don't know.

MR. HOOKER: I think the physiology of being able to produce noise, and the swim bladder, the presence of the swim bladder, I think does, you know, potentially lend itself to that, and so I think there is something about the physiology of the animal, whether it's the -- I think it's a very related thing, the ability to generate noise and, you know, having a swim bladder.

MS. KEENER Do snapper not have a swim bladder? I don't know.

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

MS. KEENER: What?

AP MEMBER: There's other soniferous fish, like red drum and black drum.

DR. LANEY: What Paul just said was there are other soniferous fish down there. All of the sciaenids, the whole sciaenid family, and so that would include red drum, weakfish, spotted seatrout, star drum, right, or silver perch, and so there's a bunch of them. Now, how do their auditory emissions compare to Atlantic croakers? I don't know. I mean, Atlantic croakers are loud. You can hear them. I've been on the dock at Duke Marine Lab before, and you can -- Also toadfish. Toadfish have significant auditory emissions as well, but, you know, they're benthic dwellers, and I don't know whether they would be attracted to a bubble curtain or not.

The other question I was going to ask, Brian, is have you all looked around? I mean, I know bubble curtains have been employed as barriers in other instances, and, if Anne is still on there, and Trish might know too, it seems to me that, when the Corps has done some explosives work in the Cape Fear, didn't they deploy bubble curtains down there too, to try and keep fish away from the areas where they were doing blasting?

It seems to me I have some recollection that that might have been the case, but I wondered if -- Have you all looked around in the literature for other examples where bubble curtains were used, where the same thing might have happened with other species?

MR. HOOKER: We certainly did when this occurred, and we were trying to figure that out. Yes, and we definitely scoured -- Trying to look for more, and you're absolutely correct. This is a very

common, you know, noise attenuation approach. It's used -- You know, it's very common in bridge construction, and some explosive work as well, as you mentioned, and it's kind of why it is kind of this go-to system, because it is just a known, you know, available, commercially available, system that can be deployed to, you know, attenuate noise.

No, and we couldn't find any documented evidence that was reported, and I think we have tried to do little feelers out to different people that might have been involved in some projects, you know, because it could be that some observations like that maybe don't get reported in like an easily, you know, searchable, you know, format on the internet. It may be just in a reporting file somewhere for a construction project, and so it's not to say that it hasn't happened, but we haven't been able to find like a, you know, report or something that documents in another species, or in other applications.

There was -- Recently, the National Marine Fisheries Service had done, you know, just a study looking at animals' reaction to the deployment of a bubble curtain, and so that was really interesting. We did -- You know, we were able to see, you know, animals quickly moving away from a bubble curtain, and so it's clear that animals do react to bubble curtains being deployed. It was, I think, and Brandon Jensen, who is my lifeline right now on my chat, can correct me if I'm wrong, but I believe that was around an aquaculture facility. They were testing different bubble curtain deployments around aquaculture sites, to see how successful they would be at keeping animals away from a bubble curtain.

We do know that animals do react to the presence of the bubble curtain, by quickly moving away from it, and, again, that, to me, lends itself to maybe they tried to move quickly away, but just then got trapped in the bubble curtain itself, but this is a type of -- That's my hypothesis, my working hypothesis. We did have a study idea that we were hoping to move forward with, but, due to some budgeting constraints in the federal government, we're not able to proceed with any new studies on that topic area.

MS. HOWINGTON: Thank you, Brian. I don't -- We do have one other question. Laura.

MS. BUSCH: Brian, this is Laura, with the U.S. Navy. I don't really have a question. Just I wanted to remind you that we finally were able to finish that Atlantic sturgeon project, where we tagged them and did playbacks of vessel noise, sonar, and pile driving, and so we should have that, and we also got ABRs on some as well, and so we should have that report back in and out in March, and I'll send it to you, but, if you don't hear from me, bug me, and I'll get that to you.

MR. HOOKER: Thanks, Laura. That's a great update. Thanks. Hopefully I'll remember to ask you about that. When you think -- You said in the next couple of months you might have that done?

MS. BUSCH: It's due to me March of 2026.

MR. HOOKER: Okay. So springtime. All right. I'll ask you in the spring.

MS. KEENER: I just have a follow-up point. I know that these -- There are other fish down there that produce sounds, but they -- I don't know if they actually produce the sounds by specialized muscles that are attached to the swim bladder. Some of them grind their teeth, et cetera, and so

I'm just wondering, because croakers croak, and make very loud croaks, and that's why they're named croakers, if there's something not uniquely tied to their swim bladder morphology that is causing this event. I'm going to stop there. I can keep going.

MR. HOOKER: Whoever the moderator is, I just put in the question -- I don't think I have access to the comments, but I put the links to those two -- We did a -- We did two. We just finally published two reports. These were actually done with the Navy, and that was back with -- You guys, I think, that have been on the committee a long time, remember Carter Watterson, before Laura, and so we started this project back -- Gosh, and I'm going to get the date wrong, but many years ago, with extending the Navy's acoustic telemetry array off of Norfolk, and, anyway, we finally got the results published there, and I don't know if it can be shared with everyone on the call, but I put the links in my version of the question chat.

I thank the Navy for that. That was a lot of work with NAVFAC Atlantic to make that, to do that multi-year overview of fish telemetry off of, and in the sand borrow area in Sandbridge, and there's two links in there. One of the study areas was focused on the Sandbridge Shoal borrow area, and the second one was focused on the lease area.

MS. MURPHEY: Brian, this is Trish Murphey. Just kind of following up on Paula's thought on croaker, you probably could just get a hold of Joe Luckovich, and just run it by him, that idea, you know, that maybe there's something morphologically different, because he's done a lot of work on sciaenids and sound, and so I don't know if that might be worth just checking in with him, and see if he has any thoughts.

MR. HOOKER: Yes, and we did -- In that same circle of experts, we did reach out to Art Popper as well. I think Art -- I think probably several of you are familiar with him, and I think, you know, he's in that same world, and kind of picked his brain a little bit after we did this, a very similar presentation to the National Academies of Science, you know, last winter. We did have a discussion with him, to try to think through some things as well. I don't have my notes from that meeting, but, yes, we have kind of reached out to that specialist community, to get their thoughts on it.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Brian already said Art Popper's name, and so that was one that I thought would be worthwhile checking with, and I think Paula's question is a very good one, you know, about the morphology, the internal morphology, the musculature and the skeletal arrangement, and what enables croakers to be perhaps -- I don't know that anybody has actually measured the decibel level of croaker auditory emissions compared to red drum, compared to spotted seatrout, and so forth and so on, but I think it's a question worth exploring, and maybe some of the veterinary folks might also be good people to consult with on that, along with the guys who study sound.

MR. HOOKER: Thanks, Wilson.

MS. HOWINGTON: Anyone else? Okay, and so, for our action items for this, it was discussed, which we have done very well, and good job, but then is there anything that we could potentially add in, revision-wise, to the energy policy based on this? I don't foresee that, just because bubble curtains are a good tool to try and, you know, keep fish away from this construction, try and limit

the amount of sound damage, but I wanted to leave it open to the group, of this is not just informational.

This is, you know, if you want to take action, and try and do something, go for it. I do think that it is specific to this area, and I think that it is probably specific to croaker, and so I would want to kind of look into the morphology of croaker, or at least get somebody else to look into it. I feel like I'm looking into a lot of stuff after this meeting, but to be able to answer that question, and so I leave it up to the group. What do you want to do with this information? Try and add something to an energy policy, follow up in a year or two, after CVOW's further developments, and what are your thoughts?

MS. CROWE: Wilson.

DR. LANEY: Well, it's a rather puzzling sort of thing, and a couple of thoughts occurred to me. One is it seemed to be highly seasonal. I mean, you said it happened in May, Brian, but then it didn't happen in subsequent months, like in July and September, if I was paying attention closely enough.

MR. HOOKER: Yes, and last year was in the spring, but this year was in July, and so, interestingly enough, it did seem to pop up right after we had the remnants of that hurricane back in July 8, 7 and 8, and I don't know if you remember that hurricane that went up, the tropical storm that went up, the coast, and so it did -- To me, it seemed unique that, oh yeah, we just had that tropical storm come through, and then, the next day there was, and two days following -- There was the next day, and the day after, there was the incident, and so I really have no idea if that brought in some warmer water, and, you know, perhaps the croaker at that point, or it just happened to be that location. I have no idea.

DR. LANEY: Well, I would just say that, from the standpoint of -- I think, you know, as an advisory panel, we should think about what level of significance would be of concern to us, and I would think, if this was routinely happening every time you deployed a bubble curtain, certainly it would be of higher concern, and then, you know, I guess the total numbers for this event were somewhere in the neighborhood of 18,000, which is not very high, if you compared, for example, to shrimp trawl by catch, and just saying. That's a pretty -- 18,000 is a pretty low number, and so, you know, I don't know. What's everybody else think? I mean, again, it would be more concerning if it was a routine, regular, ongoing type of phenomenon, to me, anyway.

MS. CROWE: Anne had her hand up online. Anne, go ahead, and then Paul.

MS. DEATON: Thank you. I was going to just mention, or ask Brian, and I know I've heard of doing a slow start on the driving, and so they'll do it slowly, and it gives animals a chance to leave the area. Could they do that for the double bubble curtain?

MR. HOOKER: Yes, and that's one thing we're trying to look at, is that can they slowly release the bubbles, and then like turn it off, and then turn it back on again, and that is one thing that we have been thinking about, but I -- You know, there is some operational -- You know, we get into some real technical sides of the operation, right, and so, you know, for that to ensure proper flow, you are flushing the system, you know, after the deployment.

You deploy the night before, and you come back the next morning, prior to the installation, and you need to make sure that any sediment is flushed out, thoroughly flushed out, of the system, and so you kind of have to turn it on, you know, pretty high to flush those systems, and make sure all the holes are getting that proper flow, so you can reach your modeled noise attenuation distances.

It is challenging, from an engineering perspective, and we have been talking with the folks on the vessels and trying to, you know, think about is there anything that we could do, other than like, as you said, like somehow, you know, do something with how the bubble curtains are turned on and off.

I think -- Personally, I think there is showing some promise on newer types of noise attenuation systems. I think Orsted is a company that, just within the past year, had a press release that they were developing one that is using like a jetting. It attaches water jet to the base, and it basically kind of uses high-pressure water valves to, you know, kind of clear the area, and really minimize the amount of impact hammer energy that is introduced, and so that is, you know, one innovation.

There is also these newer blue piling techniques, and so forth, and so I am more hoping for, you know, some alternative technologies that become commercially available, but that is the challenge, is finding ones that are, you know, available and commercially deployable, you know, for a project, and, again, it is hard to experiment with an active construction project.

You want certainty, and there is nothing really much more certain than hoses and air compressors, right? There are things that still could break, but they are likely things that can be easily replaceable, and fixed. If you have your entire project is dependent upon some type of new technology, and that breaks, there is a lot of risk to that project reaching its installation timeline.

Usually, they try to get these in in a single season. CVOW is a larger project, and so it is going to be at least over two full seasons, but that is a little bit of an exception, and so that is what we are challenged by right now, is reliable alternative technologies being available.

MS. DEATON: Okay. Thank you.

MR. MEDDERS: This is Paul, with Georgia DNR. I am kind of going back in the wayback machine in my brain, when I was studying red drum and other sound-producing fish, and so this doesn't solve the problem, but hopefully it tickles the sciencey part of everybody's brain in the room.

If my memory -- Is not correct that the males produce sound, and the females do not, and that would be an easy check, right? If it was related to the sound-producing thing, if it was all males that were dead, that would be interesting, and then might help say is it close to feeding behavior, and not related to the sound-producing thing, and so that just was a thought. I know it doesn't really solve the problem, but it sure does take me back a few years.

MS. CROWE: Anyone else have questions, or comments. for Brian? David.

MR. WHITAKER: Hi. This is David Whitaker. I agree with what he said previously about this being a relatively minor impact, given the high natural mortality, and high fishing mortality, of the species, and so it's not that big a deal in the big picture, but I was wondering if you could use

something like one of those sonic guns before you turn on your bubbles, and, you know, sort of the thing that you test for sea bottoms for, oil and gas, and maybe not that big, but just, you know, shoot a couple rounds of that, and chase everything away from there before you turn the bubble screen on. Just a thought.

MR. HOOKER: You know, if we ever get -- You know, we haven't -- There haven't been any really new project approvals since last summer. I think there were some that were very, very late stage in the game when some of this was going on, but I think those are things that we do have to bake in early on in the environmental review.

It is a challenge to try things out, you know, during construction, because there is usually a -- If you are introducing any new energy or sound into the environment, there is usually going to be a need to be an associated, you know, consultation, or assessment, associated with that, and so that is another part of the challenge of being able to adapt on the fly.

You can really only kind of try to bake some of that in in future approvals, and, you know, I'm not sure when the next approval will be, but these are all things that are -- I know we are thinking about, that we want to, you know, potentially bake into the environmental review, and consultation process, so that we do have some flexibility on trying out something like what you are describing, to clear out an area prior to, you know, the bubble curtains being turned on, if that is still the attenuation device being deployed, but, yes, definitely a good point. I wish we could be just more dynamic and like -- Have vessels, you know, on the standby, and go out there and try something on the fly. That would be great. Unfortunately, we do not have that ability.

MS. KEENER: So, just a little further down that rabbit hole, I have just discovered that only fish, fishes, that have these specialized sonic, these muscles, sonic muscles, attached to the swim bladder, and enable them to make that noise, are drums and croakers, and you are right that is in some -- In many sciaenid species, the males are the only ones that are able to produce a sound, and so I think there is something there.

MS. CROWE: Wilson.

DR. LANEY: So, Brian, one other question I will ask you is that, since you had the -- I guess that was an x-ray that you showed us of an impacted croaker there, and are you able to use, in a case like this, where you have a mortality event -- Were you all able to collect any of those animals and, you know, make use of them for other purposes?

Where I am coming from here was what was the length frequency of the mortality event, and so were all of these adult fish, and, in view of Paul and Paula's investigations over there, were they all male fish? I mean, if you did a bunch of, you know, gender determinations, that would answer that question, possibly, but I always hate to see animals that die as a result of some sort of anthropogenic event like this get, quote, wasted, unquote, in the sense that there is other biological data that would be very useful for management purposes that could be collected from them, if that is possible, and I suppose somebody, obviously, has to do the work, but it might be a good project for a grad student, especially if it keeps happening.

MR. HOOKER: Yes, I have to go back and check the two reports that we have. I'm sure they did document, you know, all the lengths of the ones collected. Obviously, you know, the protected

species observers, you know, their primary role is, you know, keeping an eye out for, you know, ESA-listed species and so I don't -- You know, they weren't -- With the exception of ones that were collected, there's not really any information on the ones that weren't collected, other than, you know, a rough observation of, you know, how many fish, and what the general disposition of those fish were, and so that isn't known, except for the ones that were collected, which we do have. I would have to pull that report up and look at it, though but that's something I could follow up with the committee on some of that.

MS. HOWINGTON: We were just double checking, and so our action items, again, are discuss, and then do we need to add anything to the energy policy? I think what we're hearing is that this is not constant enough of an issue. Bubble curtains are a useful tool. If it does affect croakers, that's a very good point.

I'm sure that Brian will be willing to look into that, if maybe it's male croakers specifically. and then we know, if you're in a croaker-heavy area, try not to use bubble curtains, but, otherwise, I don't think we're going to be integrating anything into our policy, and so, unless somebody has another question, I think we're ready to move on to the next group. Also, I apologize for standing up and pacing. My daughters woke me up at 3:00 a.m. this morning, and so I'm functioning on like five hours of sleep. It's great. So, with that, Brian, are you all good?

MR. HOOKER: I'm good. I hope I'm not throwing your agenda totally off schedule.

MS. HOWINGTON: You aren't. That's us. We're actually having really good conversations today, which is great. We're throwing ourselves off. The next people that we're going to talk to is the telecommunication subsea fiber cables talk. This is with Rita Melo, Morgan Paris, and Laura Cherney. I would recommend we do like a five-minute, or ten-minute, quick bathroom break, while I also do some tech support on them, to make certain that everything works. Sound good? All right. So then we will come back at 2:40. Sound good? All right. 2:40.

(Whereupon, a recess was taken.)

MS. HOWINGTON: So, to give everyone some context before I hand this off to Rita, Morgan, and Laura, this was a request by you guys, the Habitat AP, because, when we were having conversations about windfarms, and their impacts and talking about the energy policy, we realized that we didn't really have a lot of information on cabling, specifically the concrete mattresses that they put on top of the cables, what the impacts are on those surrounding habitat, that kind of thing, and so we requested, or you guys requested from me, to go try and find a subsea fiber cable, because they've been around for way longer than windfarm cables are, and I ended up at a group called AECOM, which I'm having to look at my overview for exactly what that stands for. Give me a second.

Actually, you know what? I'm just going to hand it over to AECOM, and here's Rita, Morgan, and Laura from there, who are going to give us a talk on infrastructure development in the marine environment for subsea fiber cables.

MS. MELO: For sure. Hello, everyone. Good afternoon. Kathleen, thank you so much for the opportunity to be here and talk a little bit about the development of telecommunications subsea

fiber cables and its impacts. Let me see if I can just make this work. Here we go. Hello, everyone. Good afternoon.

AECOM is here today with three people. There's three of us. I am the U.S. East Subsea Permitting Lead for AECOM, and I work out of our New York City office. My name is Rita Melo. I'll be making part of this presentation today, and then I have help from Morgan and Laura. Please go ahead, Morgan, and introduce yourself.

MS. PARIS: Hi, everyone. I'm Morgan Paris. I'm a marine biologist here at AECOM, and I'm based out of our Raleigh, North Carolina office. I believe Laura is also online, and so I'll let her introduce herself.

MS. CHERNEY: Thank you, Morgan. Good afternoon. This is Laura Cherney. I sit at an AECOM in Florida, here in Miami. AECOM doesn't stand, really, for anything. It's a large engineering consulting firm. Those of us on the line today have been working as biologists. My background is NEPA, environmental permitting, and so you'll hear from those perspectives from us today, and so thank you.

MS. MELO: Thank you, Morgan. Thank you, Laura, and now we can start with our presentation, and, as Kathleen requested of us, we'll try to give you an overview of the components of telecommunications subsea fiber cables, and then potential impacts from the installation of this infrastructure, and some ideas around policy considerations. We also have some time for a Q&A in the end, so we can have a discussion, in case you have any questions for us, and let's start here.

So, as Kathleen was mentioning, telecommunication subsea fiber cables have been around for a long time. For your reference, the first cable ever installed was a telegraph cable installed between the U.S. and Britain back in 1858, I think, and, nowadays, we have a very populated global map, with over 600 telecommunications subsea fiber systems currently in use.

This map here is a map available online, on this website indicated here on the screen, and, if you access this map, you can have information on the multiple landing locations shown on the map, or the subsea fiber systems themselves, and so it's a very interesting map if you want to know more about like the current systems around the world.

To give a brief overview of what these projects look like, these cables are installed in the marine environment, and the connection these cables have between beach manholes, which are literally manholes existing in beaches, where these cables connect, are called the marine component of a project, and basically, this is composed by the subsea cable itself.

The subsea cable may have repeaters too, to increase the signal strength, and it may have branching units, when the system lands in multiple different locations, and so, here on the right, you can see that subsea fiber cables can be as small as a dime. They are normally the size of a fire hose. They may be slightly bigger, if they need more protection, and they are mainly composed by optic fiber pairs, in the center of the cable, and then they're surrounded by multiple layers of protection, made from inert materials like steel wires, copper, polyurethane, and galvanized wire armoring.

The innovation cables have been having, throughout the decades, have been focused on the increase of the speed of the data transmitted, and this means like higher fiber pairs, a higher count

of fiber pairs, and let's say the materials for protection for these pairs are mostly the same as we've been using for many, many decades now.

The first step on the execution of these cables, these cable projects, is a cable route survey, and how this normally goes is that there is commonly a study done, prior to a cable route survey, to determine any constraints around a specific route connecting two points, and, whenever it is determined that a route avoids any marine protected areas, any areas protected for other seabed uses, or any marine uses, and, whenever it's determined that the route avoids other infrastructure, and it's optimal, a cable route survey is done to collect geotechnical and geophysical data.

After this first step is done, we do the cable installation itself, and, in between these two steps, there is a lot of work done by the marine teams to define the type of cable that is going to be installed, and the logistics around planning for when the boats are available to perform the installation works, and there's also a lot of permitting work done with the agencies to obtain all necessary approvals.

The installation of the cable itself happens kind of in two moments, being one of those installation at the beach and then the moment when the main lay vessel continues to install cable in the high seas. The installation at the beach may happen with two different types of installation techniques, but they basically result in the same approach, which is to remove cable from the main lay vessel, located as close to the beach as possible. This is done with a smaller vessel. The cable is connected to a beach manhole, and the main lay vessel proceeds to the high seas, while performing the installation of the cable, via burial with a sea plow, or by just laying the cable on the surface of the seabed. I have a small video trying to explain all of this, to be more visual, and you'll be able to see it in a second.

The last step on the execution of these projects is the post-installation burial and inspection, and this step may mean very different things. It may mean that the jet sled may be used to further bury the cable at a depth that is ideal, optimal, whether due to engineering reasons, for protection, or for regulation purposes.

This may also mean the protection of the cable with a further stronger armor, which is placed around the cable, and then the cable is buried, via trenching on a beach, or in areas where it's too exposed to any damages. It may mean that an ROV just passes by where the cable is laid, to collect the data where it's located, specifically to cover sediments, or there may be concrete mattresses placed on top of the cables, for their protection and to avoid their movement with time and currents.

I do have to mention that concrete mattresses are normally structures that we don't use that much, but we understood this was of interest for you today, and so here is the video. Let's see. Okay, and so we have the main lay vessel positioned close to the beach here. The support boat brings the cable to the beach. A winch pulls the cable, makes a haul-in operation, to connect the cable to a beach manhole, that is then -- It's buried, and so it's a structure that we can't see.

The vessel continues installation of the cable further to high seas. Here is a repeater. We're seeing the sea plow here burying the cable. The cable passes in the middle of the sea plow. The vessel continues its way through the route, and here we can see how a cable is installed over a crossing of another cable, and this is done by basically having the sea plow being pulled up from the main

lay vessel, and being placed back on the sea bottom again, and when the burial ends, we just pull the sea plow up, and we have the post-burial ROV.

This part of the video illustrates how the ROV can locate to the location for the cable, and bury the cable, if needed, and here is the crossing again, and so, the way it's done, it's very similar, and the vessel just continues to the high seas, deploying cable, and basically surface laying the cable, accounting for the necessary slack, so the cable doesn't have any issues during its lifetime. That's mainly it, and so it's very easy.

I understand there are also power cables being installed nowadays, especially for offshore wind, and I'm just going to highlight small differences between subsea fiber cables and power cables, and, basically, in an offshore wind structure, they have different names.

We can have inter-array cables connecting the turbines to an offshore substation, or export cables connecting the substation to land, and the cable itself is going to be bigger than a telecom subsea cable, of course, and this can be between seven to twenty centimeters, and so it may be a lot bigger, but its configuration is basically the same, where we have copper or aluminum conductors in the middle of the cable, and maybe some fiber optic cables, or pairs of fibers for communication and monitoring, and the remaining is just protection.

The way of installing these cables is pretty much the same, where there are cable route surveys, and then there are cabling vessels with plows and ROVs to assist the works, just like for subsea fiber.

This is a picture I wanted to share for reference, where this power cable is coiled, and we can see it's bigger than a telecommunication cable, but the way they are installed and worked is very, very similar, and here is a video to illustrate how these cables are installed, and, of course, I do have to say the presentation is missing a lot of details about these structures, due to time, but, if you have any questions, we're available to give you more details, if needed.

Once the team and the equipment are deployed, we have a messenger line and the mini ROV that are used to be clamped to a location where a hook is placed to be ready to be pulled from the outside of these structures, as we're going to see now. Then we have an ROV that is deployed to basically get a messenger line, and then make the connection to the power cable on the boat, and we're talking about similar main lay vessels.

Now the cable is being pulled from the boat to the structure. The cable is secured inside of the structure, and then the boat itself travels to a second location, while laying the cable, and also collecting and transferring personnel from one location to the other, of course, and the connection to the second location is done exactly the same way.

There are messenger lines and mini ROVs deploying the line to then pull the cable from the vessel to make the connection between the two structures, and so on, and then the cable, once connected, is just dropped on the seafloor, and, after being dropped, it may have concrete mattresses for protection, too.

Let's see here, and so then we wanted to give you an overview on the potential impacts of these works, and what we know nowadays about monitoring and decommissioning of these cables, and

so we know that subsea cables largely remain untouched during their entire lifespan, and the lifespan of these projects is around twenty-five years old, and this is an ideal situation for a telecommunication cable, and there are no planned monitoring works or activities for these kind of projects. The cables are just installed, and they are left untouched in the seabed, if possible.

So, if we talk about cable damages, then we have data that confirms that these damages rarely occur on high seas, and these are very, very rare, and the biggest percentage of damages occur due to fishing and trawling activities closer to the nearshore, where these happen, and, of course, I couldn't help to say that one of the biggest myths in this industry is that sharks are known to bite these telecommunications subsea cables, and that fish bites have accounted for zero faults on these type of cables since 2007 and 2014.

If you are interested in reading more about this infrastructure, you can consult the ICPC for additional materials. The International Cable Protection Committee publishes a lot of information about these structures.

So now, talking about the decommissioning of these projects, ICPC also recently published a new white paper on this, and, basically, the conclusion is that most cables are left on the seafloor even after they are out of service. This is because, to date, there wasn't a big interest in recovering these cables, but the market is changing, and there have been companies, and more efforts, putting their attention on a recovering cable, although, from what we know, there isn't an international guideline on how to do this yet.

However, there are studies that show that recovered cables, laid on the seabed up to around forty years, were recovered in an almost pristine condition, and the plastic outer protection was intact. No degradation of the inner conductors was observed, and the laboratory confirmed that the cables were still chemically inert.

Then, regarding the interaction of these cables with habitats, what we know is that the cable itself has no statistical significance or interaction with the seafloor fauna, and this is observed both in hybrid systems of fiberoptic cables and power cables, and this is an overarching conclusion that we're getting to, but, of course, studies are still being made in this sense. However, it is the broad assumption, in the industry, that most cables with fauna in them are not to the norm, but rather the exception. This is what we've been finding. So now, Morgan, I pass it on to you.

MS. PARIS: So, as Rita mentioned a little bit earlier in the presentation, before routing subsea cables, the first step is that cable route study. Some of the environmental considerations that go into routing the cables are shown here on the screen, and so you have geology, which includes bathymetry and sediments. There's human use considerations, like ocean disposal sites, looking for military uses, archaeological sites, sand borrow areas, or existing infrastructure.

You also take a look at the general oceanographic conditions, such as extreme storm events that have occurred in the area, general offshore conditions, currents, impacts that could be anticipated from climate change, that kind of thing, and then you take a look at the commercial and recreational fisheries, looking for focused fishing areas of interest, as well as gear type usage, and then the other consideration are protected resources, and so benthic habitat, marine protected areas, management zones, species, as well as essential fish habitat and habitat areas of particular concern.

On my next slide, I'm going to take a look at the commercial and recreational fishing considerations, and so, specifically, when you're looking at fisheries and subsea cables, you're looking more at those bottom interacting gears, for obvious reasons, in that they're penetrating the seafloor, and so, on the screen, you have a bottom trawl gear type shown here, and, in that right-hand figure, it's just an example of, after that gear type has passed, and in heavily fished areas, you can see the actual marks of trawl scars in the seafloor sediment.

When routing subsea cables, while it's fundamentally impossible to avoid fishing grounds, it's best to minimize known fishing hotspots, and, in that way, you're able to minimize impacts to fisheries themselves, when you're installing the cable, as well as reducing impacts to the cables themselves. You know, as Rita mentioned, while subsea cables aren't faulty often, they can be, and one of the main faults are from fishing gears, like these bottom-interacting gears.

On the next slide, I touch on another bottom-interacting gear, which is the dredge. The hydraulic dredge is known to be the most abrasive, when it comes to the seafloor. It can penetrate up to twenty-five centimeters, and, again, on that right-hand side, you see some of those dredge marks, from where a dredge has passed on the seafloor, and scallop dredges are another consideration.

They have effects of the seafloor that can last up to six months, depending on local currents and geomorphology, and so the point being made here is that it's important to consider how deeply you're burying cables, when you're talking about fishing gear, and knowing where the fishing is occurring could warrant, you know, extra protections, or extra burial depths sometimes, to avoid interacting the cables with the fishing gear.

In the next slide, looking more at the actual construction, operation, and decommissioning of subsea cables, you consider what are called impact-producing factors, and these are stressors created by anthropogenic forces, which result in specific changes to the environment, and so, when it comes to subsea cables, installation, and operation, these impact-producing factors commonly include disturbance, in the form of turbidity or suspended sediments, sound from installation of the cables, and this is more minimal than it is for the offshore wind structures themselves.

Specific to power cables, you want to consider electromagnetic field, and then the presence of the structures and cables themselves, as you all have mentioned, and, you know, the placement of concrete mattresses adds hard-bottom habitat.

Some of the potential impacts that could result from these impact-producing factors are shown in this table on the right-hand side. They include behavioral disturbances, the potential for barotrauma, and there's also the conversion of sand-gravel habitat to a hardbottom habitat, which can create an artificial reef effect, and just impacts to the fisheries themselves. Often, you know, the placement of a concrete mattress could yield an area where a fishery is excluded, especially those bottom-interacting gears, or, on the flip side, in creating an artificial reef habitat, it could create a fishing hotspot, in that, you know, recreational fishermen may seek something like that out.

Going forward a slide, I have a case study from the South Fork Wind Benthic Monitoring Program, and this one is, for context, nineteen miles southeast of the Block Island Wind Farm, and it was constructed in 2022 and 2024, and it includes twelve wind turbines, and it also looks at the submarine cables in this study.

On the screen, you're looking at a snapshot. They did benthic surveys pre-construction, construction, and post-construction, and that 2017 period is of the soft sediments where the cables were put down, and, in that 2024 period, it shows the same picture after installation was complete, and so the point they're making is that they didn't see any demonstratable changes to the biological communities in those soft sediments of the export cable. The same was true for the soft sediments around the offshore wind structures.

On the next slide, they documented the concrete mattresses that were put down over these cables. They found that the concrete mattresses did increase the local taxa in the area, and so they saw anemones, sea stars, and they saw some invertebrates, and American lobster, Jonah crab, hake, flounder, and the sort, and so you can see, in the picture, some of the species they're pointing out there utilizing this new structure.

Again, concrete mattresses, as Rita alliterated, are used to provide stability. They're common in power cables, but, when you look at the length of the cable overall, the surface area where concrete mattresses are placed is usually very minimal.

On the next slide, I just pulled a study from Draeger, in 2020, to provide a little bit of context on when you might see colonization of some of this hardbottom habitat that's added. The study suggests that, the first two years after the structure goes in, you start to see just this pioneer set of species, which then moves on to this intermediate stage, around three to five years, of suspension feeding invertebrates, and it concluded with what they call the climax stage, usually around six-plus years, with mussels, mixed hydrozoans, and anemones, and then, on my last slide here for the impacts section, I just proposed this interesting viewpoint on siting, you know, offshore wind and subsea cables.

The subsea cables, in the form of concrete mattresses and, you know, the offshore wind structures themselves, as you all saw in the last presentation, create hard substrate and environment, that used to be largely soft substrate, and so this can lead to impacts on the spatial distribution and connectivity of species, by creating new dispersal pathways and facilitating species migrations, and so what's being shown here is just, if ecological criteria is incorporated when siting these structures, you have the potential to heighten the ecological benefits from the artificial reefs.

On A of the figure shown here, it's just siting based on the variables I brought up earlier, you know, navigational channels, protected resources, the standard way to route, and then, in Column B, this study is proposing, you know, strategically siting structures so that they can enhance ecological benefits in the region, and so providing the opportunity for increased connectivity and dispersal pathways for species, and so just an interesting tidbit from a study that came out, and, with that, it moves into some of these policy considerations.

So these last couple slides are just kind of putting everything Rita and I talked about in the context of policy and permitting and what that kind of looks like when you're talking about subsea cables. As Rita mentioned, one of the bigger benefits, or I'm sorry, the bigger considerations from subsea cables is impacts to essential fish habitat.

When you're looking at routing, you try to avoid sensitive areas as much as possible, but it's not always feasible to avoid everything, and so, if you are interacting with essential fish habitat, it's

found that the actual area disturbed in this habitat is pretty minimal for cables. For surface-lay cables, it's just the area of the cable itself, the length times the width of the cable. For cable burial, the disturbance depends on a kind of installation method used, but, for burial, or trenching, the disturbance is usually pretty minimal, and it's found that the baseline conditions will return. The timeline for that varies just based on local conditions, but that study I presented earlier does prove that point, that the soft sediments do return back to their normal state.

On the next slide is just, again, kind of putting this into perspective of some of the protected resources, when doing cable route studies, and the next steps and planning out cables and what kind of cables to use and protection measures. You work closely in collaboration with BOEM, the United States Army Corps of Engineers, and NOAA to make sure that you're not going to negatively impact protected resources, avoid areas as much as possible, and then mitigate any damage when you're in those areas.

Then the next slide is just, again, kind of touching on that ecological benefit of the structures, and so the hardbottom habitat created by concrete mattresses and offshore wind provides an opportunity for species to exist in a habitat that wasn't there before, and so, when you consider decommissioning these structures, it's been pointed out that it's really important to consider that you could negatively impact protected resources, if they've started to congregate and use the habitat.

It's just bringing up the point that the very end of all this process, after the installation and decommissioning, concerns come up, in that there's a few different routes, and because this is also new on the east coast, it's still in development of what the methodology will be here, but it's important to consider that you could be negatively impacting these protected resources.

Then, on the last slide, just flipping back again to that fisheries perspective, as I mentioned at the top of my portion, the subsea cables can interact with fisheries, in the form of the bottom-interacting gears, and so, when you're siting, it's important to consider fishing hotspots, and specifically work directly with the stakeholders here. They know where they fish better than anyone else, and so bringing them in early on the decision-making process has proved to be really beneficial, and just pulling as much data as you have available, to understand where you're working, has shown to be really helpful as well. With that, we have a conclusion slide at the end, and I'll let Rita take back over here.

MS. MELO: Thank you, Morgan. With this slide, we just wanted to leave you with the main takeaways from our presentation, by highlighting that telecommunication and power cables are very different in size, but they're both made of inert materials, and they have very little interaction with the marine environment, according to studies done to-date, and no monitoring of cables is expected during the cable lifetime, and the main faults known to-date on cables are due to trawling and other fishing activities.

The primary environmental routing considerations include optimal laying and burial conditions, but also protected resources and habitats, existing ocean conditions, and commercial and recreational fisheries. The impact-producing factors from installation and maintenance of subsea cables can be temporarily disruptive, and, when assessing these impacts, we normally take in the worst-case scenario, being the sea plow size, and the conditions to recovery prior to installation are very quick.

The lasting impacts from subsea cables are primarily attributed to, when necessary, placement of concrete mattresses and resulting hardbottom habitats, and these are the main takeaways for today, and so thank you so much, and we're open to questions.

MS. CROWE: Thank you so much for that presentation. Does anyone have a question, or a comment? I've got nothing in the room. Is there anything -- Wait. Never mind. Paula.

MS. KEENER: Thank you. That was a wonderful presentation. On one of the slides, you mentioned that the platforms could be used for permanent monitoring at the decommissioning phase. One of the things that we have discussed here, in the development of our energy policy, is that they also can be used, and should be encouraged to be used, for exploration platforms, and so not just monitoring, but platforms for instituting scientific exploration and research. Thank you.

MS. HOWINGTON: All right. Like Paula said, thank you so very much for that talk. I have a couple of questions regarding -- You had, on one slide, pictures of cables going through what looked like coral reefs, which we consider essential fish habitat, and then said that this has minimal impact on the surrounding habitat. Don't these cables move? So, for instance, if a storm hits, wouldn't this cable have immense detrimental impacts on habitat like that?

MS. MELO: Right, and so what happens when cables are located in hardbottom habitats is that, for us to have the minimal impact possible when installing these cables, we do just leave them surface laid in the sea bottom, but, if the cable is in an area prone to move, we normally may consider clamping the cable, so the cable doesn't move. I don't know which image you were referring to. I'm trying to find it. Is it one of these images?

MS. HOWINGTON: This one right here. You say here there's no statistically significant difference between detectable flora and fauna, and, yes, I understand that the cable itself would not remove a flora or fauna from that area, but it would definitely be a colonizing factor, and, if then the cable moves, because it's not connected to the ground, that can cause problems.

MS. MELO: Definitely, and, you know, it is the interest of the cable manufacturers and installers to not have the cables move as well, if possible, because that may cause damages to the cable, and so the cable installation techniques may vary depending on the seabed where they're laid, but they are normally dimensioned to have the least minimal movement possible, not only for environmental purposes, but also for technical reasons. So, of course, when a cable is laid in an area with coral reef, there's no trenching, there's no burial, of course, nothing like that, but the cable may be like fixed to the hardbottom with pins, so it doesn't move with time.

MS. HOWINGTON: Scott, you have a question?

MR. KATHEY: Yes, and so, as you had described, most of the impacts to cable are closer to shore, rather than mid-ocean, and so at what point typically -- Is there a typical depth, or distance from shore , where the cable is simply laid on top of the seafloor, rather than trenched in?

MS. MELO: Well, that's a very good question. I believe the quick answer to that one would be around 1,500 meters water depth, after which it's considered that the interactions with these cables are minimal, but this also depends very much on the location where the cable is being laid and

whether it's a location prone to trawling, or other types of fishing, depending on other activities and all of that.

MR. KATHEY: For those areas where the cable is there on the surface, can you describe the strumming, and how that occurs, and what lateral impacts you can have from strumming of the cable?

MS. MELO: So strumming in subsea fiber cables doesn't occur, to my knowledge, and so that's something that we normally don't consider.

MR. KATHEY: But if you're in a high-relief area, maybe a vertical drop, or a steep slope, and I know the routing study is trying to avoid those places, but, from time to time, you'll hit pinnacles, or you'll hit a rock outcrop on the seafloor, and so, in those places, the cable may be suspended off the seafloor, as it traverses one of these pinnacles, or something like that, and so what are the potential impacts from those suspensions for wildlife and for habitat?

MS. MELO: Okay. Now I understand the question. So, from my knowledge, the marine teams that install these cables normally do their work in the sense to leave the cable with minimal movement, and interaction with wildlife, and so there are ways of trying to avoid the situation as much as possible, by leaving some slack on the cable when it's installed, for example, and so there aren't many cases where the cable is suspended, because that's a suboptimal scenario. However, in cases where that has to happen, I would have to consult internally and ask how this is processed, but I can definitely do that and come back with some answers there.

MR. KATHEY: Okay. Thank you. Appreciate it.

MS. MELO: Of course.

MS. HOWINGTON: All right, and so I have another question. I recognize that you said that you don't normally use the concrete mattresses, unless you absolutely have to, and you can't bury the wire, and it's somewhere that it's going to be interacting. One of the things I mentioned, when we were talking, was about monitoring and bioaccumulation. Was Laura able to kind of look at any of that? I know that she had a study going on in Florida that looked at that. I recognize it would only apply to Florida, but still, I think the Habitat Committee would be interested, if she would be willing to talk to that.

MS. CHERNEY: Hi, Kathleen. This is Laura. Sure, and I'll be happy to talk about what we're doing down here in Florida. The study that we're working on, with some university partners down here off the coast of Miami, isn't really with articulated concrete blocks. It's more with designed concrete structures, that act more of as a hybrid reef, and not necessarily artificial reef. When we talk about artificial reefs, sometimes you think of ships and other things being sunk. This is fit for purpose. It's designed specifically to be a hybrid reef, with a specific marine-grade type of concrete mix that is biophilic, that is, you know, designed to have corals and other marine life grow on these structures.

This study is in relation to wave attenuation for coastal resources here down in Miami, and so it's a little bit different than what we're talking about, but I think there may be some lessons learned

and shared across these studies. For our studies with the University of Miami, we are seeing that corals are growing on these types of concrete structures.

These are corals that have been raised in land-based nurseries and out-planted when water temperatures are within appropriate ranges. We had a very, very hot summer here about two years ago. A lot of coral bleached, and so that is something that is very top of mind for a lot of these researchers as they begin to analyze some of the impacts of these concrete structures that are being placed offshore and how the coral is doing on that, but those corals that have been out-planted, and they're small,

They're little plugs that have been raised in land-based facilities, but they tend to be doing very well on these concrete structures, and so that's very promising for the type of work that we're doing related to wave attenuation and protecting coastal areas from storm surge and erosion and flooding and things like that. Does that answer your question, Kathleen?

MS. HOWINGTON: It does. Thank you. I just thought that would be a project that the group would be interested in, and, speaking of, we've got a question from Scott.

MR. KATHEY: Sorry. I left my hand up by mistake.

MS. HOWINGTON: All right, and so then last question for me, and sorry I have all these questions. This is something of interest to me. When you decommission these cables, you said you just leave them at the bottom of the ocean, and that every study is showing that there is absolutely no degradation of any of the plastics, any of the internal wiring.

It just stays in there, and kind of floats and lobs along, and just exists. Has there been any follow up for the decommissioning of these cables when you stop? Like, I mean, I recognize that you don't have a monitoring plan, but have you all ever tried to go back and find some of these old cables, see where they are, see what they look like?

MS. MELO: Yes, and so that's a great question. There are multiple things happening in this market related to decommissioning of cables, and this has been happening for multiple reasons. Either it's because some companies are interested in recovering the materials from these cables, or they are interested in repurposing these cables directly somewhere else, for monitoring purposes, or, due to constraint of the seabed, where people want to lay their new cables, and there's no space, there have been recent considerations in decommissioning and recovering cables.

What happens, or what has been happening recently, is that there are multiple efforts being developed in this sense. What some companies are doing is to recover portions of these cables when these portions are in locations that are very interesting to route new cables, and so, in that sense, the answer to your question is, yes, there has been more cable recovery nowadays than before, and, therefore, we also have recent studies around decommissioning and innovative solutions to recover cables and treat and repurpose and reuse these cables, and so, in general, that is being done in specific locations around the world, by some cable installers, yes, and so I don't know if this answers your question, Kathleen.

MS. HOWINGTON: Thank you for that answer. Scott, do I need to put your hand down, or is that what we just talked about?

MR. KATHEY: No, and I do have a follow-up question, and so, given that transoceanic cables have been laid since the 1800s, whenever you're trying to perform one of these route surveys, what is the archive that you go to that, you know, has the path, or at least the known path, of previous cables, all the way back to the first ones that were laid? Is there an international database that you use, because, you know, if you're going to lift your cable over the top, when you're dredging in or whatever, as your video showed, you've got to know those cables are there, and so where do you get that information?

MS. MELO: Exactly. That's a great question, and that's actually one of the interesting struggles the routing teams have when they're doing this desktop survey work, but there are ways of knowing where these cables are located, roughly. One of those ways is to buy admiralty charts in areas of the world where these charts have up-to-date information. Another way of knowing where these cables are located is by reaching out to the company who provides the submarine cable interaction map online.

This company is called Telegraphy, and they have some information on the exact location of cables around the world, and, lastly, the ICPC can be contacted, and they themselves either have the exact coordinates for the location of some cables around the world, or they can do something, which is to send an overall email to all the companies that subscribe to their committee, and they disseminate the information about a new cable being laid, requesting that other cable owners, where they feel there are interactions with this new cable being laid can connect with the new cable owner. These are multiple ways of de-conflicting the laying of new cables with other crossings.

MR. KATHEY: Then, pipelines as well, same type of procedure? You have a different avenue you probably go through to confirm the location of pipelines, right?

MS. MELO: Exactly. If I understand correctly for the location of pipelines, the work being done is directly with the owners, and, normally, crossing agreements are obtained, or negotiated, prior to the installation of these cables, and pipelines are identified in preliminary desktop route studies.

MR. KATHEY: Undoubtedly, I would assume though that some of these cables and pipelines, particularly the older ones, do not have precise routes that have been plotted, and so how often do you encounter a cable, or a pipe, that you just simply didn't know was there, where there's damage done to that existing line, which may or may not even be an active line?

MS. MELO: Yes. Exactly. Well, I do have to say that never happened to me, and I hope it never will, because that means I would be in trouble, but it has happened that, for example, during our studies, we identified old cables, and we had to do preliminary in-water surveys to try and detect the exact location of those cables prior to installing a new cable.

MR. KATHEY: So, when you have your dredge, or whatever the device is that's on the bottom helping to lay out the cable, do those typically have camera systems on them facing forward, where someone can kind of monitor anything that's coming up that was not expected?

MS. MELO: So the sea plow itself doesn't have cameras, to my knowledge. Again, I'm not a marine, you know, installer, but, to my knowledge, I don't think sea plows have those cameras.

However, ROVs, and divers doing post-installation work, normally have continuous video on them, and so we can collect that information, definitely.

MR. KATHEY: Then, as far as military cables that may not be plotted, because they don't want anyone to know where they are, is that a problem that you're running into, I mean, worldwide, where these are not publicly announced that these cables are there?

MS. MELO: Yes, and so there's a lot of work that needs to be done in the desktop survey, even prior to the cable route survey, to identify possible structures in these areas, in old or new military areas, and we make a big effort to identify as much as possible, but then I think it's when there's an outreach to the install community for these kind of cables that is done towards saying like, hey, this is what I'm doing. If anyone is aware of existing infrastructure that is, you know, not publicly disclosed, please reach out to us.

MR. KATHEY: Okay. Well, that makes sense.

MS. MELO: There's a lot of confidentiality issues in this industry, for sure. Not issues, but considerations.

MR. KATHEY: Right, and so you just make sure you broadcast your intentions, and, if anyone is paying attention out there, they'll let you know if there's a potential conflict.

MS. MELO: Yes. Yes. After desktop studies, I believe that's the way to go, and, normally, these desktop studies tend to identify and deconflict most of the interactions between these cables and other infrastructure, and we also have international best practices for distances to other cables and infrastructures we follow, and so we try to do all that work up front to avoid any surprises in water.

MR. KATHEY: Okay. Well, thank you very much. I appreciate it.

MS. MELO: Of course.

MS. HOWINGTON: Thank you very much, Rita, Morgan, Laura, and Kate. We appreciate you all being here. We didn't really have any action items here. As I said at the beginning, the entire reason why we requested this is to try and increase our knowledge base on kind of this cabling and the impacts on habitat could be, and so I think we have improved our knowledge. Paula.

MS. KEENER: Thanks again for the presentation. I'm wondering, Kathleen, if we might not want to -- I hate to say this, but go back and take a look at our policy, to see if we have the policy recommendations that were presented here, all of them included, and I'm not -- I think we have most of them, but I'm not sure we have all of them.

MS. HOWINGTON: Yes, and I think we have most of them, but that couldn't hurt. I will put that on my to-do list, a staff re-review.

MS. KEENER: Especially the incorporation of ecological principles. I'm not remembering that, but there may be something that crosses over to that that's in there already.

MS. HOWINGTON: Yes, and I can add that to my to-do list. It's not a problem. Do we think we have any other action items or follow-up for this? Seeing none, again, thank you, Rita, Morgan, Laura, and Kate. We are going to move on. We're actually going to move on now -- Wait. I would like to reiterate, for the people who are not members of the advisory panel, that, if they want to make a comment, they can do so via the chat or questions box on the right-hand side of GoToWebinar. You can also go online, to the South Atlantic website, and I'll show everyone. I'm going to make myself the presenter now. One moment, please.

All right. If you go to safmc.net, and you go to Meetings, we are this meeting right here, and you can actually submit your public comment here, and then, at the end of the meeting, there will be a public comment period, that is verbal and written, and so I actually read these out loud, and so, if you are interested in making a public comment, or on just looking at that, go for it. Otherwise, you can also send me -- Sarah, I see your chats. You can always send me a chat, just like Sarah just did, and so I am receiving those. Don't worry.

So with that, we now have -- We're going to do -- Matt McPherson is going to be next. He has a relatively small verbal, or short verbal, update, and so give me one moment to pull that up, because I messed up my screen when I moved my Chrome. Okay. Everyone, give us five minutes, for technical reasons. The cookies just got delivered, and so we're getting a quick cookie break, and then we're going to move on to Matthew McPherson.

(Whereupon, a recess was taken.)

MS. HOWINGTON: Matthew, I'm going to hand it off to you to give us a loss of CEFI, Changing Ecosystem and Fisheries Initiative, discussion. This is just a verbal update. There is no presentation associated with it.

DR. MCPHERSON: Okay. Great. Well, good afternoon, everyone. My name is Matt McPherson. I lead the Social Science Research Group at the Southeast Fisheries Science Center, and I'm going to be briefly talking about the impacts of the loss of the Changing Ecosystem and Fisheries Initiative, which we call CEFI, on the South Atlantic region. I'm making this presentation really on behalf of Dr. Mandy Karnauskas, who's the coordinator of the CEFI project. I've worked fairly closely with her, but, if you have any questions, I may be able to answer some of them, and there may be some that I'm not able to address.

Overall, we lost all of our CEFI staff. There were three permanent FTEs, a biophysical modeler, an ecosystem modeler, and a social scientist. We also lost almost $2 million in funding to support the various demonstration projects that had been identified. While the downscaled climate models are still being developed by OAR, we now have limited ability to validate the models or do the work integrating the models into the various biological models.

The biophysical, ecosystem, and social modelers all had niche areas of expertise that are not easily replicated within the Science Center, and so we've lost some critical skill sets, that we definitely cannot replace in the short term.

The losses will impact council activities and coordination with Inflation Reduction Act projects, with SEDAR working groups, participatory research and modeling projects, offshore energy

research, and protected resources recovery work, not only in the South Atlantic, but in all three of the regions in which we work.

More specific project-level impacts, many of the CEFI demo projects were in existence prior to CEFI, but we are enhancing the projects with CEFI resources, and also supporting them through the additional funding. To provide the specific examples, there's research on wholesale snapper grouper recruitment declines in the region, and this research was heavily dependent on the expertise of Ana Vaz, and it will be very challenging to continue the project without her. Much of this work is completely lost, although we're going to try to recover some elements and carry forward with some limited remaining staff.

We have the dolphinfish management strategy evaluation. This project was underway prior to CEFI, and it's ongoing, but we had planned to enhance the operating models with CEFI, which would allow us to create realistic potential scenarios for future dolphin distributions. Now these kinds of uncertainties can only be included qualitatively.

We had also planned on some additional investments to advance management strategy evaluation capacity in the Southeast region, and this has also been undermined by the lack of funding. Ecosystem status reports, we still plan to do updates of ecosystem status reports in all three regions, but the CEFI staff were going to take on, you know, much of this burden, and so progress is now going to be much slower. The ETA for the next South Atlantic update is no earlier than 2027.

Our Shrimp Futures project, this project remains a priority, but the loss of one of our project leads and funding has slowed the progress of the project. Stakeholder engagement interviews and analysis of qualitative data has been particularly impacted. We won't have as much capacity to do quantitative future biological scenarios, and, in the absence of additional funding, we will have to significantly scale down the number of in-person scenario planning workshops that we had hoped to do for this project.

We had also been looking to pursue some habitat-related work using biophysical models to predict areas that might be resilient to coral bleaching, in order to guide restoration efforts. This work is also being discontinued.

We also lost much of our capacity to coordinate with councils on their IRA-funded projects. A couple of staff, including Mandy and Kevin Craig, are still involved, and there are connection points, for example, with the East Coast Coordination Group, but the Science Center does not have the capacity to loan expertise to these projects. Also, we lost expertise to assist with the ecosystem modeling efforts in the region, for example in collaboration with the ongoing Ecopath with Ecosim work at FWRI.

We're doing our best to mitigate the impact of CEFI staff and funding losses on critical projects. For example, we've redirected some of our integrated ecosystem assessment affiliates to support these efforts, and we've scraped together limited contractor funding. However, these are only stopgap measures, and we do not anticipate being able to fully replace the capacity loss with the departure of our CEFI staff and funds anytime in the near future. That's the brief verbal presentation that I have, and I'm happy to try to answer any questions.

MS. CROWE: Anyone have any questions? Wilson.

DR. LANEY: Thank you, Matthew, for that report. I know we will eventually get a transcript of this meeting, but do you, by any chance, have that written down, so it could be distributed to the AP?

DR. MCPHERSON: Yes. I do have it written down, and I could distribute it.

DR. LANEY: Thank you, sir. That would be most appreciated.

DR. MCPHERSON: Sure.

MS. CROWE: Paula, go ahead.

MS. KEENER: Hi, Matthew. It's Paula Keener, retired NOAA, eighteen years of service to the nation. Thank you for that brief. I want to thank you and your team for your service. I heard recently, or read recently, that the total amount of expertise that has been lost agency-wide is the equivalent of 27,000 years, or maybe it was 24,000 years, of expertise that's been lost within the agency, and, having been a part of NOAA, and I still feel like I'm part of NOAA, I just -- I want to thank you, and I want to let you know that this is -- It's difficult for us on the outside as well, and so thank you.

DR. MCPHERSON: Thank you for that.

MS. HOWINGTON: Okay. So, seeing no more questions, we do have an action item on here. He listed off a list of all the projects that are either ongoing, but slower, or have been discontinued. The action item here is what do we add to our research and monitoring documents?

So, for everyone online, and in here, a friendly reminder that, in May, you all received multiple emails, with a research and monitoring document, that was very, very long, and that was an accumulation of every recommendation we have in our policies, in our FEP I and FEP II, that was not completed. I went through and gathered any recommendation we've ever made, sorted them out as best I could, and, any of the ones that had been completed, removed from our recommendations of the previous research and monitoring document.

There are recommendations for researching snapper grouper recruitment already in there, underneath the Snapper Grouper FMP. We're good on that. The dolphin MSE I don't believe is specifically recommended. I can recommend that to the staff contact for dolphin wahoo, of maybe we do our research and monitoring document. It's in there? Good. Okay. This is going to be a lot of me double-checking with Chip. The ecosystem status reports are in our research and monitoring document. I'll be requesting those. Are Shrimp Futures in there? All right. We're good on that one.

Habitat-related work to coral bleaching is in there. Supporting ecosystem modeling is in there, and then the integrated ecosystem affiliates, and I believe we also have the integrated ecosystem assessment is in there as well, and so we've recommended all of these, and hopefully, recognizing that we can't necessarily work on them at full capacity now, in the future -- We've already written them down, and we're going to be able to try and tackle them later, and prioritize them later, and so that made me feel a little bit better, that we have them on our list of we want to try and work on

these in the future, and I recognize, again, to repeat what Paula said, Matthew, that it has to be difficult. The talk you just gave was probably very difficult to do, because I'm sure you were working with Ana and Holden and all of the CEFI team.

DR. MCPHERSON: Yes.

MS. HOWINGTON: So we appreciate you coming here and giving us the highlights.

DR. MCPHERSON: Sure. Great. Yes, and it's been a little bit difficult, no doubt, but I'm happy to come and, you know, provide the update. I appreciate the opportunity.

MS. HOWINGTON: All right. That's the only action item we had, is to double check that all those were added to the plan. Since they already had them, we don't have anything additional to add. Wilson.

DR. LANEY: I was just going to ask you, Kathleen, in view of the discussion that we had yesterday about trying to expand the diet information to cover life stages that are not currently covered -- It's already in there? Okay. Thank you.

MS. HOWINGTON: I'm telling you that I made a really long document.

MS. KEENER: So, based on what we've just heard from Matthew, and I'm sure the council is doing this at the council level, I guess. I mean, I know that they are, but I am just wondering if there is -- If we should be documenting direct impacts to the council as a result of what is going on within NOAA as an agency.

MS. HOWINGTON: Come join. Chip is talking now.

DR. COLLIER: This is Chip, council staff, and we have asked for briefings from NOAA in regard to how things will be changing. Given how quickly they were changing at the March and June meetings, they still weren't certain exactly how everything was going to resolve, and so we continue to ask for updates, and they provide all the information that they can, but it's just nothing set in stone right now on the direction, and so we'll keep you updated on what NOAA tells us, but, yes, there's a lot of uncertainty on what people can do, and who is going to be available to do it.

MS. HOWINGTON: To that note, I am a member of the CCC habitat working group and the CCC wind group. The wind group meets once a month. Habitat working group meets once every couple of months, and they are -- The members of the group have verbally informed everyone else that they are working on trying to tally up who has been lost, what expertise has been lost, what cannot be filled, what can be filled.

At the last wind meeting, we did get -- There was a first email saying, hey, this position needs to be filled by people that are still here, and please fill this up, and so there is movement towards trying to fill in the gaps that have been left empty, and there's movement towards trying to correlate exactly how much expertise has been lost, and who is gone. Unfortunately, I can't give you any more in stone than that, because, like Chip said, it's moving really, really fast, and it's kind of settling down now, we think, and so now is where we can kind of assess where we are and come up with a game plan for the future. Trish.

MS. MURPHEY: I was just going to add, you know, the council is also trying to reprioritize, you know, all our projects, and the workplan that the council has as well, trying to work around and, you know, deal with the changes that's going through with the agency, and I think we're actually going to be discussing priorities, right? We're going to be discussing priorities with NMFS, to make sure that we can -- So that we mesh better, so that at least we're getting work done that we can get done, and so just to add to that.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chairman, and so Trish's comment reminds me, along with Paula's comment, it's not, you know, just NOAA and NMFS. It's all of the other federal partners that have been such a vital part of this process, and so I think, you know, to the extent we can, we might want to just gather some information.

One of my colleagues at the North Carolina Wildlife Federation just sent me a piece today on the National Park Service, and what they have lost, and it's, you know, it's National Parks Service, it's U.S. Forest Service. At USGS, the cooperative fish and wildlife research units, which have done a tremendous amount of work on especially diadromous species, but also marine, some marine, work, as well.

I mean, I think that it is not an unfair statement to make that, as Paula noted-- Well, 24,000 years' worth of expertise walking out the door, and it's far greater than that, I'm sure, if you add in all the other federal partners that we've been dealing with, and I don't know whether anybody has tried to look at it, but it seems, to me, that it certainly slows things down, if not taking a backwards move, as far as science and science expertise and science support goes, and that is of great concern, I think, to all of us.

I will try and, when I see information like that, just send it out to the AP, so we know what's going on in the other federal agencies as well. In particular, we were -- You know, when we were talking with Anne this morning, the hydropower -- A lot of hydropower relicensing, and therefore fish passage expertise, but also ecological flows, which is part of hydropower relicensing as well, walked out the door as well, and so a big, big, big hit.

MS. HOWINGTON: Thank you, Matthew, again for coming, and for giving that talk, and so where we are in the agenda, and this is a discussion for the group, is we have resilient fisheries overview, but we also have the five-year review from me, and we have the habitat workplan. Now, the habitat workplan, I would like that to be the last thing we work on, because that is everything that we've talked about during the meeting, anything we need to add in for our winter meeting, for our summer meeting, and so that has to be the last thing, and so that's going to be tomorrow.

The EFH five-year review and the resilient fisheries overview actually kind of feed into each other, and so Lara and I were discussing, and I was going to recommend it to Stacie, since we were able to get the blueprint items complete, we should have plenty of time tomorrow to be able to discuss resilient fisheries, the five-year review, workplan, and still leave early tomorrow, and so I was going to recommend that maybe we call it a day early.

We're supposed to end at 4:30 today, and so maybe we call it, you know, twenty minutes early, and then, tomorrow, do you want to come here at 9:00, or do you want to come here at 8:30? I have to drive thirty minutes to get here. We're not doing it at 8:00, Wilson. You have to come down the stairs. Kevin is good with 7:00 if he can bring the kids. Okay. I need someone to make a decision. It doesn't matter to me either way. I have three children five and under. They wake me up. For tomorrow morning. I think we finalized calling it.

MS. CROWE: I've heard people say 8:30.

MS. HOWINGTON: All right. 8:30 tomorrow morning. We're going to call it now, because we only have twenty more minutes left, and so thank you very much. If you want to hit this and hit adjourned, you can. You know, go nuts. Not adjourned, but adjourned for today. We're adjourned for today. Are we not allowed to say that? We are recessed for today. I apologize. The proper verbiage is "recessed", and so we are recessed for today. We will reconvene tomorrow at 8:30 in the morning.

(Whereupon, the meeting recessed on July 16, 2025.)

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JULY 17, 2025

THURSDAY MORNING SESSION

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The Habitat and Ecosystem Advisory Panel of the South Atlantic Fishery Management Council reconvened at the Doubletree by Hilton North Charleston Convention Center in North Charleston, South Carolina on July 17, 2025, and was called to order by Ms. Stacie Crowe.

MS. HOWINGTON: So everyone welcome to day three. I'm going to hand it over to Stacie, our chair.

MS. CROWE: Good morning, everyone. Welcome back. We are going to start off today with one of yesterday afternoon's talks that got up to today, and so thank you to Lara for being flexible with us. We're going to go ahead and get started. Lara Klibansky is going to give us a review of resilient fisheries projects.

MS. KLIBANSKY: As she said, I'm Lara Klibansky, and I know a lot of you from working at the Division of Marine Fisheries for many years, and on the striped bass survey, actually, with Wilson, and I was excited to get the opportunity to come work with the council, coordinating their resilient fisheries projects, and so I'm just going to jump into my presentation and talk about those now.

First, we're mostly going to talk about the projects, but I do want to begin with a little bit of an overview of the resilient fisheries initiatives that the council has been involved with, and, also, we'll finish up with some discussion of timelines, get your feedback, and also talk about next steps.

Before I get started, I did put up here the resilient fisheries webpage on the council's website. You'll see, on the left-hand menu, the resilient fisheries tab. If you go onto the website, this page has all of the information that I'm going to talk about today, including detailed updates for each of our projects. That will be updated on a regular basis, and so those will be updated quarterly for the council meetings.

The first initiative I'm going to talk about is the East Coast Scenario Planning Initiative. Back in 2021, the South Atlantic Council partnered with the other east coast fisheries councils, the ASMFC, and NOAA Fisheries to address current and future management challenges, like shifting fish stocks and changing ecosystems, through a process called scenario planning, and so scenario planning is a tool that's used to strategically prepare for uncertain futures.

During this initiative, there were hundreds of stakeholders involved, across the region, that provided feedback on existing management challenges, described changes they're observing in the fisheries, and also to discuss possible solutions. This information was then used to develop a scenario framework that was used by these management agencies to explore potential governance and management changes.

From these efforts, there were two outcomes. First, the initiative produced a potential action menu. This lists potential actions that can be taken by the agencies to address future uncertainty, and the action items fall into these three categories, or themes, that are cross-jurisdictional governance, managing under increased uncertainty, and data sources and partnership, and so, if you go and read through this action menu, you probably won't be surprised by what you see there.

I think what's unique about it, and about this initiative, is that it captured all those ideas that are constantly floating around, that we talk about, and it actually developed specific actions for how and by whom these things need to be addressed, and so the second outcome of this initiative was the formation of the east coast coordination group, and this is a group made up of leadership from all these agencies that you see here on the screen.

They work together to prioritize and coordinate implementation of these various action items, and so many of the action items that were identified in the menu are being addressed via our next initiative, which is the South Atlantic resilient fisheries projects, and this is part of a national initiative.

In 2023, NOAA announced funding, through the Inflation Reduction Act, for all eight regional fishery management councils to support efforts to develop and advance resilient fisheries management and implementation, and so the South Atlantic projects were developed by pulling together action items that were identified in that scenario planning, potential action menu, and also the priorities that had already been identified in the South Atlantic research and monitoring priorities document.

Because of the ongoing work with that east coast coordination group in the significant overlap of the regional projects that were developed by each council, we've really prioritized collaboration and coordination between these management agencies, and so the way that these collaborations are accomplished is first through that east coast coordination group, which I already talked about, but also through the southeast projects coordination group.

This is a meeting between the South Atlantic, Gulf, and Caribbean councils and the NOAA Southeast Regional Office, and it's not a meeting between the councils. It's a meeting between the project coordinators of all these councils, to make sure that we're aware of what's going on and to find places where we can coordinate and sort of support each other.

We have our oversight teams also for each of our projects, and so their purpose is to provide support and guidance to the contractors, and to ensure the expectations are met, and to assist with implementation and communication of the project outcomes, and so the oversight teams are primarily made up of South Atlantic staff, but they also include at least one representative from one of these partner agencies, that you see here on the right, and that decision really depends on what the project topic is.

That's the broad overview of these initiatives. Now we're going to talk about the actual resilient fisheries projects at the South Atlantic, and so we have four projects: the climate response readiness review; stakeholder driven aim for wreckfish fishery; updated spatial distributions and essential fish habitat for snapper grouper, coastal migratory pelagics and dolphin wahoo; and communicating climate impacts with fishing communities.

Project 1, the goal of this project is to improve resilience by reviewing and identifying changes that are needed to make the council's regulatory processes and governance structures more responsive and adaptable. We received final approval for this project at the end of May, and the decision was made to split the objectives, and cover them under two separate RFPs, and so those went out for the month of June and we're now in the review process for both.

The first RFP is really focused on a review of the management process, but the second RFP, which I've put up here on the left, is actually an ecosystem and information review and strategy development for more resilient fisheries. The council is looking to assess existing ecosystem data and tools to explore ways to integrate that information into management processes, and also seek opportunities to expand cooperative data collection and research. This one, as I said, we haven't, we're actually in the process of reviewing proposals for this now, and so I don't have any details, but I did want to give you a heads-up, since, as you'll see, it will come to you in some form, with questions or input or something like that.

All right. For Project 2, it's focused on the stakeholder-driven management recommendations. This project is applying an adaptive management technique called adaptive implementable management, which is similar in nature to an MSE, or management strategy evaluation, and this project is underway, and we're making good progress. I'm not going to talk about this one too much, because I want to get on to the next one, which is really the star of our show today.

It's Project 3, which is updating spatial distributions and essential fish habitat, and so the goal of this project is to explore indicators of change in spatial distribution and habitat associations for the species that are managed under the Snapper Grouper, Dolphin Wahoo, and Coastal Migratory Pelagic FMPs, and that's a lot of species, as you all know.

The objectives, and I am going to read through these, because this is really -- I'm hoping that this will be sort of where your input comes from, just if -- If these spark ideas, or thoughts, or, you know, things that you'd like to see in this project, and so the objectives are to develop analytical tools to quantify and predict species distribution, of the species that I mentioned, by integrating a

disparate survey data, and, the analytical tool, they're developing a spatiotemporal model, and that's as much technically that I can say about it, but, if you have questions, Chip can probably give you more information.

DR. LANEY: Is it okay to ask you a question now, just real quick?

MS. KLIBANSKY: Yes. Absolutely.

DR. LANEY: Just real quick, and so is that the Ecospace part of the South Atlantic Ecopath model, or something different?

MS. KLIBANSKY: This is different, yes, and that's actually -- So we do have, potentially, a project for that. It's actually in the communities project, but that is not approved, which I'll cover in a second.

The second objective is evaluate the relative importance of habitat features and environmental conditions in driving the spatial distributions of reef-associated and pelagic fishes. Three is predict habitat areas for these species in the Southeast, and, finally, estimate abundance indices, and document changes in species distribution, by evaluating multiple range shift metrics, and examine their associations with changing ocean conditions. Jie Cao, of NC State, and Janet Nye, of UNC Chapel Hill, are the co-PIs on this project, and are collaborating also with staff at the Southeast Fisheries Science Center, and, prior to this project being finalized and presented to the council, it will actually be brought to you for a review and input.

The project is expected to produce information that the council will use to update the essential fish habitat designations for the three FMPs, and the outcomes will be available as you begin your 2029 EFH five-year review, and so I just want to go back up to the last slide, just for a second, and so, immediately following my presentation, Kathleen is going to be talking about the 2029 EFH review, and this project actually will address some of the information needs for that review, like identifying important habitats by FMP, or species, integrating available abundance information, and redescribing EFH and EFH HAPC.

It could also provide information needed to use the integrated ecosystem assessment approach, that is used in other regions, to support the ecosystem-based fisheries management, and so I encourage you to keep this project in mind, really, as you consider, you know, sort of the implementation potential for these project outcomes, as you talk about that, and so I'm going to move on, but I'm going to come back to this, when we get into discussion.

All right, and so the fourth project is our communities project that I mentioned, and it's still under review, but we're beginning to work on the RFPs for this project, and we're hoping to get it started as soon as possible, but I do want to connect the dots back to that 2029 EFH review, because the outcomes of this project will provide fishing community information for the Southeast region at a resolution that is currently unavailable, and so, again, that's relevant because of the interest in the integrated ecosystem assessment, which uses, or addresses, human needs and activities, and so that should be helpful, and so more to come on this project in the future.

This is just an overview of all the project timelines. I t's a very basic timeline, with the project titles on the left, and the timelines are laid out by quarter, and so you can see, by the green bars here,

that indicates project progress, and three of our projects are underway with the communities project still waiting in the wings there.

I'll draw your attention to Number 3, which is the distribution and EFH timeline, and there are two yellow dots, that you can see, that indicates where there will be -- That first yellow dot indicates the SSC review that is going to occur once we have the spatial models available, and then the second dot is actually the Habitat and Ecosystem AP review, and so that's the point at which you'll see that, and it's before the orange dot at the end, which is when the council will review, and the project will be finalized. These orange dots indicate the point, basically, at which we begin the implementation project for these outcomes, and you can see all of them are ending in 2027.

All right, and so that brings me to the end of what I wanted to present today, and I'm happy to take questions. I realize I should have put a beautiful habitat on here, instead of fish, but I'm actually going to just pull this back up, because I would love to hear any thoughts, or input, you might have on these.

MS. CROWE: Thank you, Lara. Wilson, go ahead.

DR. LANEY: So tell me if this is or isn't an appropriate question, Lara, but I didn't see or hear anything in here -- I mean, we're talking about resilient fisheries, and there's been a lot of press lately about fisheries in which the size of the fish is shrinking, allegedly, as a result of too much fishing pressure going on, and Dr. Runde recently, I believe, per Chip, spoke to the -- He did an online presentation about the same phenomenon, which appears to be happening with dolphinfish.

The one I've seen lots of publicity about is the cod fishery in Norway, where the change in the size of the fish is immense, I mean, from what it was historically to what it is today, and the biological concern I have is, generally speaking, for most fish species, in order for them to be very resilient, you need to have very large older-age females, because they produce the eggs that have the highest viability, and survivability, generally speaking, and so is that issue -- I know it's sort of a separate issue, because it's more of a biological thing, and is that issue going to be addressed somewhere here in the discussion of resilient fisheries, because it seems, to me, it's kind of a critical thing to have, you know, a sufficient amount of SSB, but sufficient age structure, I guess I would say. Brendan, would you agree with that?

MS. HOWINGTON: Brendan has shrugged his shoulders, for those not in the room.

MS. KLIBANSKY: Do you want me to answer?

MS. HOWINGTON: Go ahead. If you have an answer, go ahead.

MS. KLIBANSKY: Well, I have an answer, which is, no, it's not covered under these specific projects. However, in terms of resilient fisheries initiatives, I think that, if you have a chance to go look under that potential action menu, that it's something that could be brought to the attention of these coordinating groups, and that could be considered sort of not under these projects, but, in the sort of realm of resilient fisheries, yes.

DR. LANEY: So is that something we should -- Is that something we should convey then to the group, and just say, hey, we discussed this a little bit, and we think it's a concern that needs to be highlighted.

MS. CROWE: Chip, go ahead.

DR. COLLIER: Yes, and that's definitely a concern, and it's been discussed at the SSC level, in terms of nonstationarity of these populations. How is the production of it changing due to the climate, and, you know, these projects are looking at resilient fisheries, and in order to make sure that we're going to be managing them in a proper way, and the SSC is definitely going to be talking about that.

We don't have that necessarily addressed in any of these projects right now, I don't believe, but I thought there is a project going on right now that we are going to be looking at some of these issues. One of the things in our management strategy evaluation that's going on has another project, and they are going to be looking at potentially addressing nonstationarity in that, and that's looking at recreational fisheries, managing recreational fisheries, and potentially looking at addressing multiple species in that management strategy evaluation, and so we'll be looking at the snapper grouper fishery as a fishery, as a whole fishery, as opposed to independent populations, which that's a big challenge, when you're talking about this nonstationarity issue.

MS. CROWE: I'm going to go to Paula, and then go back to Wilson.

MS. KEENER: Thank you for the presentation. So it's my understanding that the loop current, or, sorry, that the Gulf Stream has slowed significantly, with warming ocean waters. Is there any collaboration, or communication, with looking at how the loop current in the Gulf may be changing, and how that is affecting the Gulf Stream, which ultimately is going to affect recruitment of larvae and post-larvae?

MS. KLIBANSKY: Yes, and so I believe, and, Chip, maybe you can add to this as well, and I believe that would have been one of the CEFI projects that will no longer be conducted, and, specifically, I know Ana Vaz was working on a recruitment project.

DR. COLLIER: Yes, and that's correct. Ana was going to work on some of these issues. She has developed a larval dispersal model that could have been very informative for many of our species, unfortunately, and part of the reduction of effort, and that was one of the projects that has gone away.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair, and so this size thing is not a new phenomenon, at all. It was documented very well, I think, for the snapper grouper fishery, by Dr. Gene Huntsman, you know, at the NOAA Beaufort Lab, I mean, what, fifty years ago, and Gene was writing papers about shrinking size of groupers, and I think mostly groupers. I don't remember whether he included snappers in that or not, and so it is something that I think needs to be, you know, discussed by the SSC, and I'm glad they're discussing it.

DR. COLLIER: I mean, growth overfishing is a big issue, and recruitment overfishing is a big issue, and that's integrated into the stock assessment, and so it is addressed on an individual-by-individual basis, and, you know, the SSC definitely reviews those things.

MS. CROWE: Any other questions, or comments? Kathleen.

MS. HOWINGTON: All right, and so, for AP Actions, I have that we're going to add review of Project 3 to the workplan, which technically is already on there, but I'm just highlighting that that is coming up in 2027, and then, for you, Wilson, I can double-check the research and monitoring recommendations and make certain that nonstationarity and the smaller fish trends is in there. I believe it is, but, in my notes, I'm putting in there to double-check for you. Any other questions for Lara?

MR. SPANIK: Thanks, Lara. I'm just wondering if you anticipate new data sources for this, or mostly utilizing existing data providers?

MS. KLIBANSKY: It will be using mostly existing data. The disparate survey data, I know they're trying to -- You know, something that everybody wants to do is try to figure out how to integrate sort of the Northeast and Mid-Atlantic data into the Southeast data, and so I think they're going to be working on that, and then, in terms of data sources, I don't recall exactly which ones -- We haven't actually reviewed the models yet, but we are going to have our first oversight team meeting, I believe, in August, and so that's when we're really going to have our first look at all of the data source being incorporated. If there are specific data sources that you feel like would speak to one of these objectives, that is something that I would be interested in hearing about now, or if you think about it in the future.

MS. CROWE: Chip, go ahead.

DR. COLLIER: Yes, and I just want to clarify, within those projects that Lara is talking about right now, we weren't requested -- Or we allowed to necessarily collect new information, and so what you're talking about with that, Kevin, you're saying review existing information, to see if it could potentially inform some of these projects? Okay.

MR. SPANIK: Yes, and I don't know if there was any additional mapping to be done, or anything like that, but I think something that would be really helpful would be like the reef fish trap video survey, that has that abundance, and potentially to look at the habitat associations that we're seeing.

MS. KLIBANSKY: I think that's one that they're using.

MS. CROWE: Anyone else? No?

AP MEMBER: Some of those future loop current predictions that came out of the Fisheries Science Center used up in the Northeast and the Midwest as well, and I think that wouldn't get at all the components of kind of slowing and changing kind of mesoscale eddies and things into the future, but it would at least on some of the distribution, and so is that going to be part of this mapping?

MS. HOWINGTON: Did anyone understand that?

MS. KLIBANSKY: I'm sorry. I'm sorry. The speaker was really garbled. Would you mind repeating that?

AP MEMBER: Yes, and so I know there was the larger question about loop current slowing, and how that's going to impact this, and I'm assuming that this project would then be using some of those new models of future current predictions, that I know NOAA in the Northeast and in the Mid-Atlantic has used, and is that correct?

MS. KLIBANSKY: I am not sure, but I can look into that.

AP MEMBER: Okay. Yes, and, I mean, it was really cool stuff out there, and I was hoping that that would be a good excuse to expand some of that kind of future fisheries modeling into the South Atlantic side as well.

MS. HOWINGTON: Anne has her hand up.

MS. CROWE: Anne, you can go ahead.

MS. DEATON: I was just going to mention, on Objectives 2 and 3, they also relate to habitat features and so, with the existing data and information, there is a lot of literature on some of the bottom features, and bathymetry data, that could possibly be used, and I was just going to encourage you to try and look at the Charleston Bump, because that's a very interesting area, and there's been research on it. It's identified as an HAPC, but it's very large, and rectangular, and I think getting some more data on that, or refining the boundaries, would really help the enforceability of using that in our comments.

MS. CROWE: Okay. Nice.

MS. DEATON: George Sedberry, and it looks like he's on the phone, he did some of that research.

MS. HOWINGTON: George Sedberry would be a good contact.

MS. KLIBANSKY: Okay. Awesome. Yes, and I'll follow-up on that, Anne. Thank you.

MS. HOWINGTON: No other hands online.

MS. CROWE: Paula, go ahead.

MS. KEENER: Thank you. I'm just thinking if it -- I think it would be important to document the projects that are no longer funded that are going to directly affect the quality, and the quantity, of the data in these projects. Has that been discussed?

MS. KLIBANSKY: I think that what has been discussed -- Well, what has been discussed mostly is trying to figure out what's happening and what has left. I think that the documentation is sort of happening. I think it's primarily going to happen at the NOAA level, as their changes are happening, and it's sort of coming down, but I think, at this point, people are still sort of trying to figure out what actually is happening, what's going to be available, and sort of what those

challenges are, and how they're going to meet those, and so, yes, I think it would be interesting, and I think it's important, you know, for posterity, in order to hopefully, at some point, come back to these issues, and so yes.

MS. CROWE: Chip, go ahead.

DR. COLLIER: As part of our presentation to the council for our research and monitoring plan, we get a spreadsheet of projects that are ongoing, and projects that have been completed, from the Science Center, and so I can forward that to you all, and that documents some of the projects that are ongoing, and some of the projects have been canceled, and so we can definitely provide that to this group. It also includes a lot of the state efforts that are going on, so you can see that there's a ton of work that goes on in the region, and it's kind of nice to see, every once in a while, just the breadth of work that does go on to manage our fisheries, but, yes, we can definitely give you that spreadsheet that highlights some of the projects that have been canceled.

MS. CROWE: Paula.

MS. KEENER: Thank you for that. In addition to highlighting just the projects themselves, I think an explanation of the impact that the lack of funding is having on moving the science forward would also be very important. Thank you.

MS. CROWE: Okay. Thank you, Lara, for that, and I think that presentation is a nice segue into our next topic, which is Kathleen discussing our EFH five-year review.

MS. HOWINGTON: All right. Give me one second to switch over some computers and stuff, because Laura is on our second screen. Here you go. Do you want to take a ten-minute recess, just so I can get all this organized?

MS. CROWE: Sure, and so we're going to take a ten-minute break while Kathleen gets set up for the next presentation.

(Whereupon, a brief recess was taken.)

MS. HOWINGTON: All right. So, like Lara said, the next thing we're going to be talking about is the 2029 EFH five-year review, that I have been threatening you guys with, and I have mentioned this a few other times. The goal for the next five-year review is to move up a level, and so we need to ensure that our EFH is accurate, that it is targeting the waters that are actually the essential fish habitat.

Right now, all of our definitions, except for a few that have minor abundance, are just level one, and so that's presence/absence, which means we have now identified basically the ocean as essential fish habitat. If you look at the mapper that we have on our website now, it -- I mean, it can vary depending on FMP, but, if you click on every single FMP, it's just the whole region, and so the goal, for the next five years, is to try and target it, to try and focus, and what that means is that we need to start integrating in some density information.

Now, we are already going to look into the food web information, and that should be helpful for identifying important prey habitats, and so we're going to be helping that out there. Additionally,

we have the resilient fisheries project, that Lara just went over, that is going to be identifying some absence information. It's going to be identifying habitat use for our big FMPs, and so we've got some projects that are already going to feed into that, which is absolutely amazing, but how do we then tackle it for the rest of the FMPs, that are not Snapper Grouper, CMP, and Dolphin Wahoo?

I've kind of come up with a skeleton game plan of how we could do this. Please feel free to tell me, absolutely not, and that's useless. This was just a, you know, brainstorm of how we could possibly go, but the thought, for me, is we update life history. We have some life history information, but a lot of these EFH definitions that are in the user guide occurred during the big EFH CEBA I, I believe, Amendment years ago, and so we look at the FMPs that we have, and we look at are there any updated juvenile or adult information, right, and integrate that in.

That should then help us be able to identify important habitats by FMP, or by species, by looking at what we have for available abundance information, and then we can try to re-describe these EFH at the higher level, level two, and so, like I said, we're going to start with life history.

Currently in the user guide, we have generalized life history information, like, for snapper grouper, the juveniles use estuaries. Woohoo. So that's the level of detail we have right now, and we have some habitat usage of more likely to go to, you know, specific hard bottom, or more likely to be in the pelagic area, but very generic, and not very specific, and so then how do we tackle this?

Do we go species-specific, like we're doing with the food web group, where we're, you know, looking at each species, trying to identify generalist or specialist, but the reason why they're doing that is to be able to then, in the future, be able to go by big FMP, knowing that, if you find a specialist, this is how you tackle it, and so then do we just go big FMP? Do we look at -- You know, the good thing is, again, snapper grouper has already been tackled, and so then do we look at golden crab, or the shrimp fishery? That's multiple species. Do we do species-specific, or do we do FMP shrimp generally?

Once we kind of figure that out, which is a question I have, and I would like to debate, then we'll review the existing life history. We'll spread out of like, you know, you can do golden crab, you can do shrimp, look at the life history information that's already in the user guide, do a literature search, and figure out what needs to go in there.

In the meantime, I can be contacting data providers for fishery-independent and dependent data for abundance information, and then we can look at, or for presence/absence information, and see if they have any kind of habitat usage information, back to the videos that have habitat usage information.

I can be going and trying to contact them, get the data, try and integrate that in, and then, if needed, because not all of these are going to be needed, we can then go and update the EFH designation, and that's only going to be if a new study has occurred in the last ten or fifteen years that is, you know, contrary to what's in the user guide. Most likely it's not going to happen. I feel like our user guide, again, is pretty generic, where we're more going to be adding in specialists, and we're going to be adding in specific stuff, than we are going to be saying, oh, no, this was wrong.

Then, after that, we look at abundance, and so, currently in the user guide, generally there is no abundance information. If it is in there, it's very small, and so, once we've described habitat usage

by FMP, we can then evaluate the importance of each habitat type by looking at that data that I've gathered of, okay, so , in the user guide, it says shrimp utilize this pelagic area, this estuarine area. We have that life history information. We now have abundance information. They're more likely to be around buttonwoods than mangroves. You know, something like that. I'm making this up off-the-cuff of this is what we'll discover while we're going through this exploration.

We can then add that habitat usage information of what's more important to that abundance information, and then add that into our EFH definition, and so, before I move on to the integrated ecosystem assessment, please discuss. Does that sound like a game plan? Does that sound like it would be a good strategy? This is, again, over the next five years, and so this isn't something that we necessarily need to tackle all at once right now for the next year. This is something that we need to tackle in the next five years, that we're also going to be getting the resilient fisheries information, and we're also going to be getting an updated Ecospace model, and so more information will be coming in as we're trying to do this.

MS. CROWE: So are we talking for each of the FMPs?

MS. HOWINGTON: Yes, and that's how it's organized in the user guide right now, is that the FMPs are how we define EFH, and so it would be for each FMP.

MS. CROWE: Each FMP we're going to update in this five-year period.

MS. HOWINGTON: Yes.

MS. CROWE: Okay. I just wanted to be --

MS. HOWINGTON: Now, again, with the understanding that we have the resilient fisheries project helping us out with Snapper Grouper, Coastal Migratory Pelagic, and Dolphin Wahoo, which are the three big ones.

MS. CROWE: Okay.

MS. HOWINGTON: So, for everyone who just got a heart attack, we then have Coral, Golden Crab, Sargassum, Shrimp, and Spiny Lobster as the ones that are not being tackled by resilient fisheries. Of those, I think Shrimp is the only one that's a multi-species, and coral. Coral is pretty big, but I feel like, for Coral, we've got life history down. Anyway. What?

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

MS. HOWINGTON: Right. Like that's what I said. There's multiple species in the Coral FMP. There's lots of them. There's hundreds. We literally just cover coral. All right.

MS. CROWE: Okay. Wilson.

DR. LANEY: So short answer is yes, and I think you've laid out a good strategy. For some clarifying comments here, so I'm thinking, in terms of the general life history information, one very important aspect of that is larval production and transport, and I'm thinking back to previous spiny lobster discussions on the council, where initially we thought, well, for the Florida Keys

stock, you know, all those animals are recruiting from that stock itself, but then, if I remember correctly, from some of the information Laurent shared with us, that wasn't the case.

Some of those larvae are coming from the Caribbean, you know, or from Central America, and so the question here is how much are we going to try and delve into larval sources and transport pathways? To me, those are kind of important considerations for these stocks. You know, we can't just assume, except maybe for a species like gray triggerfish, which is building a nest, but, really, you can't even assume, for that one, that it's going to --

They'll build a nest in the South Atlantic, and the eggs are there, and the larvae hatch, and then the larvae jump up into the water column, and a lot of those get transfected north in the Gulf Stream, which gets back to Paula's question about what's the Gulf Stream going to do, and then the other thing that occurred to me is, and we don't -- At least I don't traditionally think of this as an important element in habitat suitability, but some of the literature I've read suggests that one of the things that snapper grouper larvae use to key on where they need to go to grow up is noise, the noise level, you know, the noises associated with reef habitat, specifically snapping shrimp, among other things.

So, you know, how do we integrate that into this discussion? It seems, to me, if that is an important cue for settlement, that is keeping South Atlantic reef habitats sustainable, then, you know, we ought to at least mention that, and I don't know whether we do right now or not. I can't remember if it's in there, because it was fairly new. I mean, it came out within the last fifteen or twenty years, I think, about the noise thing.

MS. HOWINGTON: In all of my perusing of the user guide, I don't remember seeing anything about noise. There's a chance it's in there. I don't -- I have a pretty solid memory.

DR. LANEY: Like, you know, it's like an attractant factor. You wouldn't even think about larval fish, and, I mean, are they listening, and what radio station are they listening to, you know, the coral reef radio station, and they turn the volume up real loud, and that's how they know where to go, and this is going to be a good place for me to go grow.

Then the other thing, of course, is introduced invasive species, the lionfish. We're all well aware of that, and so how is that affecting things, you know, when we've got an invasive in there that eats all of the juveniles of all these species, and so that needs to be addressed as well, I think.

MS. HOWINGTON: I agree that that needs to be addressed, but I don't necessarily think that in our EFH definition is the appropriate place for it to go. In this conversation that we're discussing, the only reason why I'm thinking we need to start with updating life history is, one, we already have enough work going on, and that seems like a relatively easier step of read through the user guide, do a lit search, make certain that we're covering everything, versus the abundance is going to be I'm contacting data providers, and providing analyses, on where like the hotspots are by species, versus by FMP, depending on which one it is.

For the three things that you mentioned, and, sorry, and I'm backtracking in my brain, larval distribution might be something that we should look into of transport pathways, because we are talking about juvenile life history, and what habitat is important for that, versus adult life history, and what habitat is important for that, and so that might just be dependent on what species we're

looking into, if that's something that's applicable, or, like you said, gray triggerfish, and we know roughly where they are. I mean, you have the nests there, and so that necessarily wouldn't be good for that, and so I think that's by FMP, up to whoever volunteers, and they get to determine the importance of that.

If they need help, I am more than willing to help with that clarification, and with making certain that we're saying, hey, we found this larval distribution study, and it's saying it's coming from the Gulf, and we should say that in our EFH definition, that the larvae are coming from the Gulf into our region, so, you know -- After that, then it becomes multi-jurisdictional, and way too dramatic, but we need to specify in there that that then is important, and that's an important transport pathway for the larval. I think that's something that we can easily integrate.

The noises associated with reef habitats, I have no idea how to integrate that into EFH, because the idea is that, like with the larval transportation, we're saying, okay, this pathway is important, and this section of the ocean is important habitat for larval distribution, right, and we identify a pathway.

For noises, we would then have to look into like abundance, and say these are hotspots. If we're going to be developing anywhere near it, and causing undue noise, it could cause larval recruitment, but that's not identifying EFH. That's more just that's identifying important habitat, and then, in the future saying, hey, this is higher level abundance EFH, and you shouldn't develop around this, for these species, because you're going to be impacting their noise. That then comes down in the future, in the management side, of I just have to make certain that they're aware, in a consultation, that, if you're developing around here, these are hotspots, and you can't go near them, because you're going to be making too much noise for development.

For introducing of invasive species, unless we're going to start managing invasive species, I have no idea how to integrate that, and identify that, via EFH. That one -- Everything else I can work my way into. That one is the one that I'm like that's important.

DR. LANEY: Well, to me, Kathleen, I guess the way that you integrate the need for having certain sound features, or sound quality, as an attractant to ensure that you're going to have a sustainable fishery, is to say what that basically means is that's part of a healthy habitat community, and it's something that we wouldn't traditionally think of. I mean, I didn't traditionally think of it until I read this paper in *Science* that said, hey, these little guys are queuing in on these sounds, and that's what enables them to find the appropriate habitat for them to grow in, and so it's part of a healthy community, which I think we all agree, you know, we want to maintain a healthy community.

Then, back to the to the larval recruitment thing, and, again, I'm trying to remember what Dr. Cherubin had told us, you know, about the spiny, and this was mostly applicable to spiny lobster. If you cut, or if you don't consider the source of your larvae, then that is going to affect the health of your fishery, and, you know, as long as your larvae are coming from the same healthy habitat community in the South Atlantic, then you don't have to worry about it as much, I think, but if, in the case of spiny lobster, most of those guys are coming from lobster stocks in Central America or the Caribbean somewhere, then what does that mean, in terms of the way you define EFH?

If your source of larval recruitment is someplace else, don't you have to expand your definition of EFH to include that other place that's providing you the larval stream that maintains your fishery

to be resilient? That's a question for everybody. Yes, the invasive species stuff, I mean, you know, the SSC, I think, spent a lot of time discussing lionfish, and impacts, and we have to consider it somehow, and this may or may not be the appropriate venue to do that, but, to me, it's sort of a degradation, if you will, of EFH if you add a species to the mix that's going to adversely affect your preferred mix.

I'm thinking, if I'm sitting on the council, what's my preferred mix? My preferred mix is the species mix and quality that maintains our historical preferences, in terms of commercial and recreational fisheries of value to our human population, and so anything that degrades that would seem to me to be diminishing habitat quality, and somehow we need to address it, whether it's here or someplace else, and I don't know.

MS. CROWE: Thanks, Wilson. I think Chip has a response to some of your questions.

DR. COLLIER: Yes, and, for our definition of EFH, it has to be within our EEZ. It can't go beyond that, and so that's going to --

MS. HOWINGTON: Within our region.

DR. COLLIER: Within our region.

MS. HOWINGTON: We can label estuaries. That's outside of the federal EEZ.

DR. COLLIER: Right, and so that's going to be an important component of this, and maybe, like you had said, Wilson, that's the pathway on how they get in here. That can be picked up within our definition of essential fish habitat, but we wouldn't be able to go into the Caribbean and say that is essential fish habitat for spiny lobster.

DR. LANEY: You can't designate it, but you can acknowledge it.

DR. COLLIER: Yes, and we can say where they're potentially coming from, but that's already been an issue for spiny lobster that's been addressed. If you look at how it's assessed right now, it's done by a yield per recruit model, which is basically making sure that we're getting lobster of the best size, as opposed to looking at a stock assessment that's incorporating all the recruitment that's going into it.

MS. CROWE: Thanks, Chip. Does anyone else have any comments, or questions, for Kathleen, or discussion?

MR. KATHEY: This is Scott with the Marine Sanctuaries. On that issue of potential essential habitat at a different life stage that may be beyond the jurisdiction of the South Atlantic Council, isn't that part and parcel of what Lara was speaking about earlier about the coordination between the councils?

Even though we might not be able to designate essential fish habitat in the Caribbean, they could, right, and so, I mean, I don't know enough about this to know that you've got those kind of spatial divides like that between regions, but, if that were the case, presumably we could coordinate with another council, right?

MS. HOWINGTON: So if -- I would feel comfortable, as a member of a couple of different council coordination committees, if this group determined that a larval transportation was coming from a very specific spot, to go take it to that council and say, hey, we've identified this area in your region as EFH. I cannot put in our EFH definition that this specific island in the Caribbean is EFH for the South Atlantic United States, but I can communicate that, and I can identify the pathway that they're coming in.

Once they enter in our region, I can say southeast currents along the Gulf Stream are important for EFH, and, if you draw a line, you can probably point to an island, and then I can go to the Caribbean Council and say, hey, we found this, and would you be willing, or would you be able, to integrate that in.

MR. KATHEY: Right, and I would think that's exactly what we want to do, and not be locked into these artificial boundaries that we've created, right?

MS. HOWINGTON: Yes.

MR. KATHEY: Yes, and, I mean, I think that's the whole idea of this resilient fisheries project update, is it not, or am I missing something?

MS. HOWINGTON: No, and that's the reason why, with the resilient fisheries project, the Mid-Atlantic is involved, and I'm involved in the Mid-Atlantic's project, and we're all trying to coordinate together, and, unfortunately, a lot of that right now is in the background, but, in the future, you'll see, and like I'm on a steering committee for Mid-Atlantic and Northeast spatial distribution stuff. Lara has a Mid-Atlantic person onboard, and so we're working on that interregional stuff, but then, ultimately, when we're writing down the definition, it's a South Atlantic region EFH definition.

MR. KATHEY: Understood. Yes.

MS. HOWINGTON: This is one of those where you all are just going to have to kind of trust me.

MR. KATHEY: Right, but we could put some but we could put some pointers in the document, you know, acknowledging that we don't have -- You know, this region doesn't have the authority to plant EFH in another region, but we can certainly show the need, and then hopefully, through cooperative management, resolve it.

MS. HOWINGTON: Yes.

MR. KATHEY: Thanks.

MS. CROWE: Wilson, go ahead.

DR. LANEY: Thank you, Madam Chair. One point I forgot is that, in order to determine all these things, genetics has got to play a big role in it, because, you know, we've got to look at the genetics of the larvae that are recruiting, in order to say, well, we know these guys came from Central America someplace, and the same thing is true -- Chip and I were talking earlier, during the break,

and the same thing is true in order to determine whether or not you have growth overfishing or some sort of stationarity change that's resulting.

That can only come from genetic studies, and these folks that were looking at the Norwegian cod stocks indicated that they've done all the genetic homework, that they say they can prove that it's stationarity, and not growth overfishing, and so I'm just throwing a plug in there for the fact -- I have sat at the ASMFC table, quite a few times, and reminded everybody that, look, we need to -- You know, we talk a lot about size limits, bag limits, and closed seasons, but we don't talk much about genetics, and we need to be talking about maintaining the genetic health of these fisheries as well, and we don't talk about that nearly enough.

Part of the reason we haven't is because, historically, we didn't have the tools we needed to be able to determine their genetic heritage. Well, now we do, today, and it costs a whole lot less than it used to, and so hopefully that will be something that we could put in the research needs list, Kathleen, and encourage -- You know, it's mostly going to be academics who are looking into this stuff, and encourage them to do these studies that we need to be able to determine where our recruitment is coming from.

MS. CROWE: Thanks, Wilson. Anyone else? Anyone online?

MS. HOWINGTON: Okay. Then I'm going to focus us up. So, like I said, abundance is going to be a bigger lift, because that's going to be contacting data providers, and we'll get to that next. What I would recommend, since we have until 2027 to receive the resilient fisheries projects anyway, is that two people that do not have a working group, and so, if you already have a working group, and you've already volunteered, I'm not asking you, but, any two people that don't have a working group, try to do this life history, with my support, and I'm going to be there with you the whole time, on like Golden Crab and Spiny Lobster, or, if you want to tackle Coral or Shrimp or Sargassum, those are our five that we need to try and do this with.

Again, all it is reading the user guide, that section of the user guide, doing a literature search, and comparing and making certain that we have up-to-date information, and, if we need to have an updated EFH designation, then you and I can help write it together. Do I have two volunteers, and do you have a preference for which FMP you want to try and tackle? I'll open it up to workgroup members as well, but I'm trying to spread the work around. I feel like we have a lot of stuff going on, and so I have the list right here.

The list is Coral, Golden Crab, Sargassum, which I really don't -- I do not see sargassum changing, but, you know, Shrimp and Spiny Lobster. Those are the five FMPs that we're not tackling with resilient fisheries that we need to try and tackle this with. Would anyone be willing to do a literature search on them and read the user guide, that isn't Wilson, because I know you were willing to volunteer.

AP MEMBER: What's the timeframe again?

MS. HOWINGTON: In the next year.

AP MEMBER: I'll volunteer for the shrimp.

MS. HOWINGTON: Okay.

AP MEMBER: Can you read the list again?

MS. HOWINGTON: Well, he claimed Shrimp, and so now the list is longer, or shorter. Coral, Sargassum, Spiny Lobster, Golden Crab.

AP MEMBER: I'll do spiny lobster.

MS. HOWINGTON: All right. I will send you all the information you need. I will put together a meeting, in case you have questions, and this will be due summer of next year, and so you have plenty of time, and I'll send you plenty of reminders.

After we get those two, and we make certain that this is actually something that can be done, we will then try and tackle the other three. I'll ask for volunteers. Hopefully by then the flow policy is complete, and I'll ask for volunteers for those three, and then, in 2027, when we receive the resilient fisheries project information, we'll have updated life history information. I'll have, you know, two years to go through abundance information, and try and analyze that, and figure it out for these five FMPs, and then we have three years to be able to try and integrate all of that into our EFH definitions, and so that's the timeline. We have those two that are going to get tackled. Thank you, volunteers. You have now made it where you don't have to do the other three FMPs, because I'm not going to do that to somebody.

Then we get to the abundance. So, again, abundance will be coming later, after I'm able to contact data providers. I think I can ask right now what data contacts we have. However, one, I feel like I'm pretty knowledgeable, because of my SEDAR history. Two, we have an ecosystem data workshop coming up in the fall for the South Atlantic. I'm looking at Lara to double-check. Do we have the ecosystem data workshop? Are we doing that still? Okay.

Cool, and so, between those two things, and then being able to email you guys out, I feel like I'm actually pretty knowledgeable in what data we have available, and I'm probably going to rely on that, and I will send you guys a list of here the data contacts I have, and if you have anyone to add to that. Cool. Is that a good plan, moving forward? All right. I'm going to write that down, so I don't forget, and then I have to email you guys.

Okay, and that then, hopefully, with updated life history information, we can then analyze it, figure out what the important habitats are, look at abundance information, figure out where hotspots are. Hopefully they, you know, align. We'll have the food web people bringing in new prey data, and so that will also be feeding into life history as well, and so hopefully, in the next five years, we go from Tier 1 to Tier 2, and maybe even a little bit of Tier 3, depending on what we are able to find, and so, for everyone who doesn't remember, Tier 3 is growth, reproduction, and survival.

If we are bringing in larval tracks, and stuff like that, we're moving stuff into Tier 3, which is awesome. It means we're actually going to be ahead of all the other councils, versus right now we're a little bit behind, and so is everyone comfortable with that, before I move on to the next part of this conversation? With that gameplan, we're all feeling good?

AP MEMBER: I've got a couple of broader general questions. Do you want me to wait until we're at the end?

MS. HOWINGTON: No. The next thing we're going to be talking about is the integrated ecosystem assessment portion, and so go ahead with the broader general question.

AP MEMBER: I'll hold one question until the end, until we get past that, but I did have a question about the project update and the snapper grouper EFH. Is that going to go into Level 2 abundance as well, or is that just kind of reviewing comprehensively the EFH designations?

DR. COLLIER: So it depends a bit on the model that they're going to choose. It could be a more informed presence/absence than what we do. Right now, it's expert-informed presence/absence, I think, for a lot of the EFH, and this would be model-informed presence/absence. I'm not certain which model they're going to be selecting in order to define the EFH, but it could just be presence/absence, or it could be abundance. It's all dependent on the model that you select, right? Some of them can go beyond presence/absence, and incorporate some abundance, and so hopefully we can get to that. It's just we're not certain which one we're going to be able to have.

AP MEMBER: Are those models spatially going to include estuarine contribution for those estuarine-independent species, or is this going to primarily be spatially restricted to offshore and nearshore waters?

DR. COLLIER: It's likely to be offshore and nearshore waters. I'm not certain if they're going to get into the juvenile stage that much.

AP MEMBER: Okay, and so I guess the question is, is there a role for this effort to address the juvenile stage for some of the snapper grouper complex species?

MS. HOWINGTON: I think yes, but I think more in the future, once we receive these new updated models, and then we can add to it, versus, right now, let's stick with the single-species FMPs. Let them do their work on the multispecies FMUs, that may or may not be losing people, and stuff like that. Let them deal with that complication, and then, in two years, once we're done updating life history for our five more simplistic FMPs, then we can look into adding in some juvenile and stuff like that.

MS. CROWE: Wilson.

DR. LANEY: Thank you, Madam Chair, and so, Matt, besides gag, which I think that's the one I'm aware of that seems to be probably -- Would you say it's more estuarine-dependent than others? I mean, I'm thinking, on the lower Cape Fear River anyway, back during my grad school days, we were catching young-of-year of a bunch of different grouper species, including scamp and black and red and yellowedge and snowies, in the lower Cape Fear River estuary, but, whether or not that represented true estuarine dependency for those species, I'm not sure, because of the way the currents work off the mouth of the Cape Fear there.

You've got those Gulf Stream gyres that spin off, and then get entrained in the Cape Fear, because of the high tidal range there, and so that may or may not reflect any estuarine dependency for those

species, and so what besides gag -- Are there other species besides gag that fall into that estuarine-dependent juvenile category?

MS. HOWINGTON: We've got some species being thrown on, black sea bass, gray snapper, lane snapper. We're thinking it through, and so anything else regarding the game plan for the EFH five-year, trying to improve EFH level plan? Okay. So then we're going to move on to the next part, and so the integrated ecosystem assessment.

We requested one during the October 2024 HE AP. I communicated that request in March of 2025, and the Science Center's response was, well, what's the goal and objective? Why would we do this? Why would we spend time on this? They, of course, have just lost staff. Probably, any other meeting, they might have been a little bit more open, but very much where we need to know exactly what you need this for, what you plan on using this for, and how this is going to help the council.

So, as per my usual plan, I then went down a rabbit hole, and I looked into how all the other groups use their integrated ecosystem assessments. The point of an IEA, which for those of you who do not know, and I'm sure that some of you do, and I apologize for mansplaining to you, is to engage scientists, stockholders, and managers, integrate all the components of an ecosystem, include human needs and activities in the decision-making process, so that managers can utilize it, and provide science necessary to carry out EBM.

Now, the point of each IEA, and this was something that, as I'm reading about them, I discovered was really important, and it's each one is scalable, collaborative, adaptable, and flexible, and so each one, if you look at each region, is different, and is integrated into management in a different way, and so in the other regions, and, excuse me, and I have to make my notes very big because, you know, there are lots of other regions.

So, in Alaska, they define their goals for an IEA in their FEPs, in their fishery ecosystem plans. They have an open and transparent process. They have lots of different meetings. One of the things that was constantly coming up is they identified indicators, and those important indicators were then studied, analyzed, you know, defined as good or bad, and then sent back to the councils as, so you've identified indicators for us, and we've determined what these indicators are saying about the habitat, and then they integrated that into management.

They also, in Alaska, use ecosystem status reports, and these are updated on a near annual basis, and so probably not something we can do. The Northeast has an IEA team, and so that's Northeast and Mid-Atlantic, and they use status of the ecosystem reports to define ecosystem linkages to management objectives, and so how does the ecosystem link into what our management goals are, and they have reports that document trends, changes, and notable events, again on a near annual basis, or maybe every two. This year's edition actually included fishing observations, which was firsthand on the water observations from the fishing community, and so they're integrating, again, that expanded social information.

For the Gulf, they have an integrated ecosystem approach that brings science and management into resource managers, and, sorry, and I'm going as quickly as I can, to identify specific EBM objectives, and they have an IEA framework that is meant to be scaled to lead to whatever those

objectives are, and so they have basically created a model that they can input information, and come up with outputs, depending on what their objectives are.

The California one, of course, they define ecosystem components. They incorporate habitat into an EBM framework. They emphasize their focus on understanding the scale of habitat interconnections and linkages between habitat drivers and associated human benefits, and so that was one of their big goals that they had, and then, finally, in Hawaii, they have identified their suite of indicators, and those have been assembled to help track the status, and so, basically, they're just sticking with that, and then they have an ecosystem status report that is their output for their IEA.

The takeaway there, from all of that information, is identifying indicators, and identifying objectives, seems to be -- Then how those objectives can be integrated into management seems to be the three core ideas of what we need to be able to give to NMFS for our IEA request. What are our key indicators, what are our key objectives with this, and then how do we plan on integrating it in? Is it an ecosystem status? Is it going to be through a framework that has outputs? Is it going to be through an MSE, because we like MSEs in the South Atlantic right now, and so how do we integrate those things in?

After looking at all of the different councils, and the Florida Keys IEA, and they also have one for themselves, I would like to recommend that we request a presentation from one of those regions. I would probably recommend the Gulf, because they're the closest to us with data availability, and, you know, it's from the same science center, but get a presentation from either council staff or the Regional Office on what their IEA entailed, how it was developed, and how they are integrating it into management, so, that way, after that presentation we can try and come up with maybe some, you know, skeleton indicators of what we think of some objectives and how it could be integrated to recommend to the council. So, again, I'm recommending Gulf, but if you all think California would be -- If that sounded better, or Alaska, I can reach out to any of those.

MS. CROWE: Brendan, go ahead.

DR. RUNDE: Thank you, Madam Chair. Kathleen, are all of the other regions IEAs roughly the same age, or what are the most recent ones, because I would imagine those people might be a little fresher, as far as the process.

MS. HOWINGTON: Give me five seconds to look it up, and I will be able to tell you.

DR. RUNDE: I would hate to request a presentation from someone who hasn't thought about the mechanics of this thing in, you know, a decade.

MS. HOWINGTON: So the good thing is there is an IEA website. I just have to get to it. All right, and so Alaska has a very recent one that has been released, but I have no idea when they developed it. I think that's going to be the problem, is that they're going to have the most recent version up. I might have to look into that and report back to you. I might not be able to get this, from a quick search, for today.

California is at least since 2018. I'm not going to be able to give you that information with a quick Google. I'm going to have to dig into it, but I can dig into it and bring it back in the winter, of this

is the region that has the oldest one, and this region has the most recently developed, you know, and then we can make the request. We're not in a rush with this.

DR. LANEY: So, given Brendan's point about the age, but, just looking at it from geographical proximity, it would make sense, to me, to use the Gulf, if it is of an early or recent enough vintage for us to do that, to his point.

MS. HOWINGTON: I think the Gulf is a recent one that has been developed. They don't have any years on this.

DR. LANEY: You didn't mention the Caribbean, and so there isn't a Caribbean one, probably.

MS. HOWINGTON: If you look at the -- Yes, there is not a Caribbean one. It's Alaska, Hawaii, California, Gulf of America, Northeast. Here you go. All right, and so there is a Caribbean ecosystem status report update, where they identified indicators in 2021, but they do not have an IEA. That's the news and highlights.

For the Gulf IEA, they do not have a time on that one right now. Here you go. Their indicators were determined during their ecosystem status report, which I am pulling up right now, and so I should be able to give you at least when they determined what their indicators are. It's a 404. Yes, of course it is, because I guarantee you it's the difference between Gulf of America and Gulf of Mexico.

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

MS. HOWINGTON: That's the South Atlantic Ecosystem Status Report. This is Gulf of Mexico Ecosystem Status Report. I apologize. Gulf of America. So in 2017 was when the Gulf of America identified their indicators for their integrated ecosystem assessment, but I can -- Again, I can go and look into who has developed this most recently, and who has the most recent version. Again, a lot of these guys, once they got the method down, they just update their ecosystem status reports, or they just update -- They don't go through a big amendment process. It's just slight tweaks and updates for a report that already exists.

MS. KEENER: What are the regions that we're considering right now? I'm sorry.

MS. HOWINGTON: Right now, Gulf of America is the one I recommended, just because they're going to have similar data sources. They are already with the Science Center, and so hopefully there's already some kind of, you know, pathway to how to get this done. They're going to have similar objectives to us as well, because they're not going to be -- Like, with Alaska, their objectives are going to be more commercial-based. Their fisheries are very different. The Gulf is a little bit closer to us with that.

We could also look at the Northeast, however, because they're on the eastern seaboard, and so they're going to have higher commercial versus recreational fisheries, but there's a chance that maybe their methods, and the way that they do it are better, or better for us.

MS. KEENER: I think I would agree with that. I think, you know, looking at how species distributions are changing, and in light of climate change, I think contiguous connections are important.

DR. LANEY: Wilson Lane again, and, Kathleen, would you remind us -- We have an ecosystem status assessment, right, for the South, a report?

MS. HOWINGTON: Ecosystem status report.

DR. LANEY: Yes, for the South Atlantic.

MS. HOWINGTON: We were supposed to be getting an updated one, but that has slowed down, because of CEFI.

DR. LANEY: Okay. Yes, and that was going to be my question, and so that's not the same thing. I think there's some confusion out there about integrated ecosystem assessment versus ecosystem status report, but the ecosystem status report helps us to inform the integrated ecosystem assessment, right?

MS. HOWINGTON: So look up here at this picture. This is the NOAA graphic for what they do. You define your EBM goals and targets. That's where we're at right now. We need to define those. You develop those indicators, and then the assessment of the ecosystem occurs by taking in the ecosystem indicators, analyze uncertainty and risk, and then evaluate strategies, and so the analyze uncertainty and risk is where you would then get your ecosystem status report. Then that would be implemented into management action, and then you would do the circle all over again, the next time it gets updated.

Hopefully, the goals and targets and objectives stay the same, and you're just monitoring those indicators, and trying to integrate them in and update those reports, but the idea is, again, by region, they've decided different types of reports, depending on what their outcomes are, because some of them are focusing more on fishing effects and interconnectivity, and some of them are focusing more on like they're doing full FEP fishing effects, and like they're doing bigger ecosystem thought processes than smaller regions, and so, depending on what you need, and what your goals are, is going to depend on what report we then request at the outcome. The Northeast was 2017 as well. I can request both. Does anyone have an opposition to that? Scott.

MR. KATHEY: I just wanted to point out that the IEA is not solely focused on fisheries either. It's the entire ecosystem, even those resources that are not commercialized or consumptive in any way, and so, you know, it's looking at habitat, and it's looking at water quality. It's looking at social science issues within the region, and so it has a lot more application beyond simply fishery management, and so that sets it apart. I mean, it's really a holistic view of the entire region, and I just wanted to put that in the right context for this.

MS. HOWINGTON: Scott, were you involved in the Florida Keys IEA? Do you have any details you want to add about that one?

MR. KATHEY: No, I was not involved in that, but we did a similar -- We've just recently completed what we call a condition report for Gray's Reef National Marine Sanctuary, and it kind

of follows this same concept, and we had workshops with regional experts, and developed indicators, and it took us about three years to complete this process.

We're trying to get the latest, you know, state of knowledge on all these different things, but what we really -- One of the big, valuable outcomes of that is the identification of gaps, and so, as you try to pick these indicators, you have to pick indicators where you have sufficient data, that's repeatable, that's constant over time, you know, where these indicators are going to be viable over time.

You know, where you've got sustained datasets, and what we found, quite often, was, wow, we don't. We have broken datasets. We don't have long-term monitoring for this, and we don't have long-term monitoring for that, and so what it does is it kind of gives you a roadmap, once you find out what you don't have, that you really should have, for the future, and that can have implications across all types of industries, and interests, and so I really am a big proponent of this. I think it would be a huge boost to the South Atlantic to have this kind of information, and kind of get people's minds thinking along this vein. You know, it's just a more holistic look at the environment rather than, you know, one part of it, you know, commercial fisheries or recreational fisheries, that type of thing.

MS. CROWE: Paul, go ahead.

MR. MEDDERS: So thank you for those comments, Scott. It helps a lot thinking through this, and I was working with you all on that process of the Gray's Reef too, and so that was interesting to hear you describe it that way. I'm just thinking about it from the council's perspective, and I may just be missing something, because we've done this with -- Our outcome was a report card, and that gets -- The public uses that to judge the health of the ecosystem in Georgia, but what's the -- As far as the council goes, what's the -- I know you said it could be lots of things, but what's the outcome, and how is it going to be used? What's the vision there for what this report is going to be, and how is it going to be used? Am I missing something?

MS. HOWINGTON: Personally, my vision for this would be moving us from ecosystem-based fishery management to ecosystem-based management, to try and integrate not just -- Right now, we're doing single-species management. We're not doing ecosystem indicators. Yes, we bring in some climate information for SEDAR assessments, but those are slowing down right now, and so then how do we integrate ecosystem environment, social environment, fisheries, like the economy, into our management decisions, to try and make it back to the more holistic approach of make management decisions that are not just good for one species, but are good for the ecosystem as a whole.

MS. KEENER: Also, I see this as a baseline, essentially, given all the changes that are taking place, and all the stressors that we've discussed over the last couple of days, just on this AP, and so I think it would set a good baseline for assessments moving forward.

MR. KATHEY: Kathleen, this is Scott again. I can check with the Florida Keys staff, to see if they had a point person who worked on this Florida Keys IEA, and get back to you on that, if you would like me to do that.

MS. HOWINGTON: Thank you. I would appreciate that. Okay, and so what I'm hearing from the group, and this is in our AP action, is that I can request presentations from the Northeast and the Gulf. I'm going to request council staff and/or Science Center, and I'm going to leave it up to them to figure out who is the subject matter expert on how their IEAs were developed, how their indicators were chosen, their objectives, and then, finally, how the output was chosen, and then how these have been integrated into management.

Those are the questions we want to know, and then ask for that either next meeting or the meeting after that, and we'll discuss that when we get to the workplan, which is the next presentation. So, with that, I think I'm good for now. You ready to move on to the next presentation, Stacie?

MS. CROWE: Sure, and the next presentation is also you. Next, Kathleen is going to go over the workplan.

MS. HOWINGTON: At least we got rid of the blueprint before, and it's not just three separate presentations from me in a row. That always feels silly, but they're three separate subjects, and so, also, it gives us a break, and so let's go to the work plan, which I do feel like is -- You know, great white shark is applicable.

All right. Okay, and so there are some changes that have been happening to the workplan. First off, we're going to be getting rid of this blueprint specifics, as of right now. We've finalized the website transition. We've integrated all the rest of the to-do list. Again, we can come back, and so now we have the following sections in our workplan.

We have the reoccurring AP activities. That's communication strategy, and that's implementing EFH conversations, and that's updating the workplan, which you do every time. Annual report is only every other, citizen science is every other, and EFH is every other, and then we have council and AP requests, and so we have space program impacts. That was a request by the council, for us to try and tackle that, and we're going to get rid of "need FOIA information". We're going to change that to "need information", but I think we have a gameplan now to move forward with that.

Revising the flow policy, we're hoping to get that finished by the next meeting, and so that's this little blue box right here is the next -- Is the winter meeting. Beneficial use and EFH consult resources, we are finished with that, as of right now. I feel like we have created a knowledge base. Anne Deaton is going to be working with Charlie to be able to work on that, and so that might be coming back, but, for now, we're finished. There is a spawning SMZ working group report, that will be provided by Chip Collier in the winter, and I'm looking at him to double check.

DR. COLLIER: (Dr. Collier's comment is not audible on the recording.)

MS. HOWINGTON: Hopefully. Hopefully. That sounds good, and then I am going to change this, but, last time we looked at it, it said IRA overview, including the EFH project update, and that is now resilient fisheries. because of reasons, we changed the name, and so that's Lara. Now, she did give a presentation here, but then we are going to get a return from her, and you said winter? Okay, and so are you planning on coming back to the AP with any other updates or requests in between now and then, because I just have you continuously from now on.

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

MS. HOWINGTON: Okay. For now, she's just going to stay on, and, if she needs to come to us, she has a space set aside. Then we have integrated ecosystem assessment, and so I've added a color. This is new. Green means future, to be determined at that meeting, and so back to FOIA, and future to be determined, and that's I'm going to go, and I'm going to provide data, and so now space is going to get added either in here or in here, depending on how long it takes me to get that data. I'm assuming summer.

In fact, I'm just going to go and put it in summer, and give myself a year to go gather everything, and so then hopefully we'll be able to come up with a step forward, and so then that's going to go back to green. We're going to determine what we're going to do during that meeting. That includes then ecosystem assessment. I will go out, and I will request the presentations that we've discussed, and then, in winter, after we receive those presentations, we'll determine what we're going to do in the future, and so we can add Xs, and we can get rid of them, and that's the plan.

CEFI overview was complete during this meeting. I don't have any follow-ups with that. The same thing with the BOEM updates. One thing that was mentioned yesterday, by an AP member, is do we want to request another just windfarm/wind project update next summer? Give them a year, and see what happens, and do we want to just request that, and see if they're willing? Okay. I'm seeing the heads nod, and so we'll add that to the list, and I don't foresee that having a lot of action items, but I think it's important for us to keep.

All right, and so now we've got out of council AP request. Now we're getting over to potential habitat impact projects/offshore energy, and so this is the big projects that we foresee coming up, and we just kind of want to know what's going on, and so it's no longer going to be CVOW update. It's now going to be offshore energy update, and we can just make that every other meeting.

Now, we had subsea transmission cables here. We had AECOM give a presentation during this meeting. Do we want to request Sea Risk Solutions to come give a talk? For the people who were not here yesterday, during the AECOM talk, Sea Risk Solutions came online and chatted me up. It was not official public comment, but they made it abundantly clear that they have more how to site select, how to avoid hardbottom information, than AECOM was providing us, and so it's up to us. If we want to request them, I can reach out to Ron Larson.

MS. CROWE: I think, since you didn't get your questions answered, it's worth having another presentation.

MS. HOWINGTON: Okay, and I will request either for -- This is going to be, again, one of the either winter or summer. I'll give them an option, because we're not necessarily in a rush about that one, and so I'll put a question-mark in there, and, after I can talk with them, I'll figure that out. Now -- Wilson.

DR. LANEY: A question, and so, for that sort of a presentation, would an AP-specific webinar be an option for that? I mean, I'm thinking of not having to wait so long, since they were chiming-in, you know, during our presentation, and expressing concerns about the quality of the information that we were getting, and if a webinar would, you know, make it more timely for us to receive the information from them, I would certainly be supportive.

MS. HOWINGTON: It could be applicable for the seminar. However, the seminar series is filled up until February.

DR. LANEY: Yes, and I realize that. I'm not talking about that series. I'm talking this would be like an AP-specific webinar. Whether or not we can do that, I don't know. That's a council staff determination.

MS. HOWINGTON: We could make that a separate AP-specific webinar. That would require me to get permission from all the supervisors, but that is something that the SSC does, is, if something is very specific, and it's just going to be one presentation from one group, they sometimes can do very specific webinars, but, again, I would have to pass that by all the senior staff before we start doing that, because we've never done that in our history, and so we'll see.

MS. KEENER: Didn't we do that with the renewable energy group? Didn't we have an online meeting? I don't know.

MS. HOWINGTON: You had working group webinars, where it was just the Habitat AP, but you never had like the whole -- Or you just had the workgroup members. You never had the whole Habitat AP convene for one subject. Okay, but I will reach out, and I will see if they're willing to come talk, and then, of course, we have our EFH five-year review, that is just going to be forever, with life stage and abundance information.

Now, we're almost there. Other things I have added -- Expanding deepwater CHAPCs has been added to the council working plan, specifically into the Blake Plateau. There was discussion about that during last week's Gray's Reef meeting, and so I put that on our list as something that's long-term. If that starts happening, we need to work into that, and then the resilient fisheries project, early 2027, I put down here. I think I can just remove that, since now we just have that permanently on our list.

Then we have other short-term goals. Now, these this one right here, EFH assessment on windfarms, I have for winter 2026, but I forgot to write down my contact for that. Does anyone know where that's coming from? I mean, I will -- I'll keep looking into it. I'll keep doing research. I have no idea.

DR. LANEY: Well, for this one, wasn't that the discussion that we had relative to decommissioning and what happens if, in the interim, if it if we designate the infrastructure as EFH, because it basically becomes an artificial reef, and so I think that's where that that topic --

MS. HOWINGTON: Okay, and so this was just a us-led conversation.

DR. LANEY: Yes, and I think that was correct. Do you guys remember it that way?

MS. HOWINGTON: I didn't have anyone lined up for it, which normally I do have somebody lined up in there. Okay, and so that helps me with context. All right, and so that will help me out, and then that is not necessarily have to happen this upcoming winter. That can happen whenever we decide, which is nice.

Then I had the -- I hope I spelled this right, because I was doing this as quickly as possible, in between all the technology issues this morning, the Manomet, and so these are the things that we brought up during this meeting, Manomet potentially doing a Port Everglades talk, asking them about their core project, how that's going on, and then Sea Risk Solutions we already decided we're going to add, and so do you all want to add these to the list of things we'd be interested in hearing from?

MS. CROWE: I think we should.

MS. HOWINGTON: Okay.

MS. CROWE: I see other heads nodding.

MS. HOWINGTON: Both of these would go underneath the potential habitat impact projects section, and so I will add those in. The question is when do we want to hear from them? Do we have a specific winter versus summer, or is it just within the year 2025?

MS. CROWE: Well, you were thinking of shortening the length of the winter meeting, and so that's going to limit how many presentations you can have.

MS. HOWINGTON: We haven't gotten to that talk yet, but yes.

MS. CROWE: Okay, and so when we get there I think would be a better time to make that decision.

MS. HOWINGTON: Okay, and so then I'm just going to leave it at just plain old 2025, and, when we get to then the meeting methods, then we can discuss what we're going to do. The last section that's on here, that isn't necessarily something that you all need to have input on, is, because, back in May, when I was sitting around the research monitoring and goals, one of the things I noticed is some of these goals we are actually tackling, and so I have that in here, of things that we are trying to identify -- Or we are trying, as a group, to be able to work on with research and monitoring.

This is more just for my records. That way, the next time that the research and monitoring document comes up for edits, and for review, I can go in and say, yes, we did this, and, yes, we did this, and I can knock the ones out that we've done, and then we can add on new ones. It's always constant, and so, with that, Brendan, what do you have to add to our lists?

DR. RUNDE: Thanks, Kathleen. I'm not quite sure that this yet rises to the level of actually typing onto the spreadsheet, but I'll defer to you.

MS. HOWINGTON: I will put it in the long-term section.

DR. RUNDE: So there are some things moving around deep-sea mining right now, and I heard a great presentation, and I have the recording of it. I can forward it to Kathleen, to send the group, if people are interested. It was from a faculty member at one of the various University of Hawaii campuses. He seems to be an expert in this space, and he talked about -- Well, it was basically a primer on deep-sea, what it is, why it might be done, where we are with it in the United States, and I went into that presentation thinking it was mostly going to be in the Pacific, which I think is still

maybe true, but, also, Blake Plateau was mentioned in his presentation, and so I kind of feel like that should be somewhere on here, as like a let's keep our eye on how this develops, because I don't think any of us can really crystal ball where that's going to be in six to twelve months. It could be on our doorstep at that time.

MS. HOWINGTON: I mean, yes.

DR. RUNDE: Or not.

MS. HOWINGTON: With the current EO for energy, actually, I would foresee that happening in the next year, and so I will put that underneath long-term goals for now. If I start hearing a bunch of stuff about Blake Plateau and deep-sea mining, I'll reach out to you, but then I can also look at the University of Hawaii, and see if we can't get that presentation, if you think it's good for the group. I don't think he wants to come to Charleston, and maybe we all go to Hawaii and see him. All right, and so, with that, I'm then going to open us up. Is everyone okay with the current workplan as we have it?

AP MEMBER: One comment. I think I want to second Wilson's thought about potential intermittent online webinars.

MS. HOWINGTON: Okay.

AP MEMBER: I know you're still navigating what the schedule will look like for January, and that's still a proposed timeline, but, you know, now being on this panel for three sessions, and getting to understand kind of the dynamics, there are some topics we get presentations on that we don't necessarily have action items on. They're more kind of updates and awareness. I wonder if maybe that's something that could be integrated into kind of an online webinar.

Then we certainly have the items that we get presentations on, and we need to discuss, and we discuss whether or not to incorporate into our policies, and I think that's a little bit better, you know, designated time, longer time slots in-person, and so I am tossing that out there as another support for exploring the possibility of more frequent online options to get some of these updates. I think the Manomet -- Sorry. The Port Everglades, I think, would be a good fit for an online. I think the Manomet is a little bit more applied to some of the things we're thinking about, and talking about, and maybe some of our policies with beneficial use, and so that would be my recommendation.

DR. LANEY: Just for my information, since Chip is here, so how much do those -- I mean, there's, obviously, a cost of everything we do, but my perception is it's a whole lot less expensive to do a webinar presentation for us, because none of us have to travel, and it saves all that time and expense, but how much do those hit the council budget, Chip? Do you guys have a cost estimate for those? Is it a fairly minimal kind of thing?

MS. HOWINGTON: Chip is coming to the table.

DR. COLLIER: That is a really good question, Wilson. I haven't looked at the budget cost for the seminar series. I suspect that they're minimal, but I would have to look into that more, and ask our

admin staff exactly what the costs are. With these seminars that you all are thinking, is it just like a single topic?

I mean, we could add a habitat kind of associated seminar series. You know, it's always difficult to get people to attend these meetings, but, obviously, we can host them, and put them on our webpage, and, that way, if you can't attend the meeting live, you could view the presentation later. I don't know how much people view those presentations later either. Looking at some of our analytics, it's not heavily viewed later. I would look at our YouTube views, and it's usually pretty minimal, and so just trying to balance the workload that this would incorporate and making sure it's worthwhile for the presenter to come and present to the group.

I do like the idea of having more of these -- Not saying non-impactful, but non-decisional meetings, or presentations, come at a webinar meeting. I think that's a really good idea, and making sure, when it's in-person, try to get these people to the meeting in-person. I think that provides for a much more productive conversation among the advisory panel, and I think the council members that are in attendance get more out of it as well.

MS. HOWINGTON: So, doing a quick look-see on our working plan, the spawning SMZ working group report I think is one of the informational ones. I don't see how we would integrate that in, other than maybe into life history information, but that can be in the working group. That could be a habitat seminar. Chip is looking at me funny.

DR. COLLIER: Yes, and I'll have to think about it.

MS. HOWINGTON: He'll think about it. I said could be. I'm writing "could be" on there, and then the other -- My internet is dead on my other computer, unfortunately. Then the other could be the subsea transmission cables for Sea Risk Solutions. We've already received one of those.

That doesn't necessarily have any action items attached to it, other than maybe we integrate stuff into the wind energy policy, but that is more informational, if we just don't know what the impacts are, and so that could be a separate habitat seminar as well, and so that's three that we can knock off the we need to meet in-person list, and we can just have a webinar on occasion, every -- Quarterly, have an informational webinar, but, again, I need to pass this to senior staff, and get approval, and discuss having a habitat-focused seminar series. Matt.

DR. KENWORTHY: I would recommend, instead of jumping into the deep end, let's test out one or two, and see how it goes, and I'm putting forward this thought and recommendation, but, you know, I'm not sensitive to the rest of the room telling me to get out. I'm just, you know, thinking about how to, you know, make efficient use of time, and convey the information to us, and so maybe we start brief, and identify one topic that we're interested in getting an update on soon, and proceed that way, and see how it goes.

MS. HOWINGTON: I think that topic would be Port Everglades. We're all interested in that, but we're not necessarily going to be integrating any of that into the list, and so I can make certain that -- Or I can try to schedule that sometime in the next three months, sometime this fall, and see if we have high attendance. That was going to be a -- Not a threat, but a warning of, if only two or three people attend these, and I'm spending a lot of time organizing them, I'm going to stop organizing them, and so I will bring this to senior staff, and see what they feel about it.

Since Chip is one of those people, I'm feeling pretty good, but I've got at least three others I got to discuss it with, but we'll see, and then, if they're okay with me doing that, then I'll try and organize a Port Everglades meeting at some point in time this fall, where we can discuss their project, and what's going on, and how they're doing their coral relocation, and maybe even organize it for the Coral AP too, because that would be of interest to them as well.

DR. LANEY: So just a clarifying question, for Chip probably, and you, and are these -- So, if we do these, and make it a habitat series, those are still open to stakeholders, right, or would they be? That's a question, because I know the others, the council series, has been open to stakeholders, right? Would these be open to stakeholders as well, or no? I don't know whether that would be useful or not.

MS. HOWINGTON: Everything we do is public. We are an open, public, transparent process.

DR. COLLIER: Yes, and anything that's decisional would have to go through a Federal Register notice, and be available to the public. You know, workgroups can work offline, and then come to like an advisory panel like this, where recommendations would be made, and so that's the difference with a workgroup.

They have to -- Any decisions that are made have to be made at a public meeting. Since you said these are kind of non-decisional presentations, we could do that. I don't see a big issue with that aspect of it, and we would always choose to have a public meeting over, you know, a more private meeting. That way, more people can get engaged, and, you know, potentially recruit new people into the advisory panel process.

MS. HOWINGTON: Plus, if we're making a recording of it, and putting it online, you might as well just make the meeting public. Okay, and so then, if we're comfortable with that, and we're comfortable with exploring doing habitat seminars, then the next question we have is the next meeting dates and the next meeting methods, and so, looking at this Excel sheet, if we get -- You know, communication strategy development is going to be I bring the draft FAQs to you guys, and so there's one.

The food web working group is ongoing. That's constantly going to be working, and so I cannot guarantee that it will occur in winter 2026, but, if they have anything to bring to us to report out, they're there. Then we have the workplan update, which we do every time. Our annual report, which has to be ready by the March council meeting.

Citizen science updates, and now this we had scheduled for every winter. We can move it to every summer, and make winter a little bit less of having that, because that is also kind of more informational, but it's important for us to be updated on that, as much as it's important for us to be updated on the resilient fisheries project, and so I'm going to keep that during the AP.

EFH consults update, we can also move that to summer, if we want to. Right now, we just received the consult update for the 2024 and half of 2025. We had it in the winter, and so, that way, it's they finish their year, and then, you know, two weeks later, they report out on the year, but that was going to be a question I had for Anne. Is that too quick of a turnaround, or do you prefer doing summer? Can you hear me?

MS. DEATON: What do you mean by winter? What month?

MS. HOWINGTON: This would be probably January, or maybe February.

MS. DEATON: Pace maintains that database, and so I would just need to check with him, but I think everything would be in there by -- I mean, it would be doable, and you used to do it then, right, and so I think so, but just let me double-check, if you don't mind.

MS. HOWINGTON: Okay. Yes. Go ahead. He used to do it during the spring update. That's how it got transitioned to winter, but, since we're moving to summer and winter, which for now is working, but I don't really know, because none of our federal people were able to come, and so we -- You can check in on that, and discuss if you would rather do winter or summer.

MS. DEATON: So that's July or January.

MS. HOWINGTON: Yes, or July or February, but yes.

MS. DEATON: I will email you right back.

MS. HOWINGTON: The flow policy, and hopefully we can finish spawning SMZs, and maybe a seminar, and maybe we give it in the winter, and so that's seven things. Resilient fisheries is every meeting. The IEA, and we're up to eight now, and then subsea transmission cables is a question-mark, and then, of course, abundance in life history.

Since I have assigned actually the life history stuff for one year, that then gets removed, and we'll tackle it next year, and so then we have, not including subsea cables, because I don't know about them, ten things happening during this meeting, which we were able to fill out two days with fifteen, and that included one of those having a three-project presentation.

My suggestion to the group is, with the ongoing travel issues, with the current budget cuts, is that we remove the ones that we don't necessarily need, and like we move citizen science updates to the summer, and so now we're down to nine. We make sure we do subsea transmission cables over here as well in the summer, and we try to make our webinar in the winter just a one-day webinar, three hours in the morning and three hours in the afternoon.

So that's nine things, and that includes this IEA goals and objectives, which would be relatively long, but then the resilient fisheries should be a pretty short update. The SMZ should be relatively short, and so let's say we're up to four hours now. This is how I schedule these things, by the way.

Revising the flow policy, if we've been communicating well and we actually get this finished, then that's going to be another hour, and so we're up to five hours. EFH consult update, Anne is going to get back to us if she wants to do that, but that generally is a thirty-minute presentation, especially since it's only going to be half a year, and so then we have annual report. If we've done that via email, that should be thirty minutes. Respond to the emails.

Workplan update, this one is pretty long, but the next one should be short, and so that's an hour on top of that, and I'm up to six-and-a-half hours. The food web working group is ongoing, if they

decide to report out, and the communication strategy is going to be another maybe hour, and so that's seven-and-a-half hours, and so that's two four-hour webinars, on a Monday and a Tuesday, something like that, instead of getting everyone together, because, I mean, I just don't foresee, with the ten that we had originally, maybe we can eke out a day-and-a-half, maybe, if we're all being really chatty, but I don't foresee being able to argue paying for everyone to travel for a day-and-a-half meeting, which is why I'm arguing the other way.

DR. COLLIER: Yes, and some of these discussions might be better served as, you know, in-person discussions, and so this is just a tentative agenda, and I think, you know, sitting down and thinking about some of these topics about, you know, should we be in-person to talk about this, and I think that should be discussed as well, and then you also had some things at the bottom. Have they already been moved up?

MS. HOWINGTON: They have not been moved up, and so that's the Manomet and the Port Everglades, which is potentially a habitat seminar, and so Manomet is the additional one, and so that's up to the group. Do you all want to see that in winter, or do you want to see that in the summer?

MS. CROWE: So Manomet would go along with Anne's update, because it's going to be thin layer placement activities.

MS. HOWINGTON: Okay.

MS. CROWE: I agree with Chip. You're not going to get, I don't think, as much interactive discussion on a webinar, and so that would shorten it, but then, also, the discussion is often the most important part.

MS. HOWINGTON: I mean, if that's the case, then I would probably recommend that we move the EIA goals and objectives to summer, if we're planning on doing winter, which, again, is a proposal. I can undo everything I just did, and we can try and make a two-day meeting come January, which I've already picked out some of like the better weeks, that avoid holidays, but aren't too close to the council meeting. Like I've picked those out, that hopefully we can all pull out our planners and come up with a good date during this meeting, but, if we want to move to webinar, I would recommend we move that IEA over. If we don't, then I would recommend that I undo everything I just did.

MS. CROWE: I'm not opposed to moving to a webinar for winter, because that was what you originally suggested last year, when you suggested the change in time, but I do agree that, if there are things that we think the group needs to discuss in-person, then we should be conscious of what those things are, and put them on the summer meeting, but I would be curious to how other people feel about that.

MS. HOWINGTON: Other people? I'm seeing thumbs-up for winter webinar. All right, and so then, the communication strategy development, are you all cool with me giving you a draft FAQ via a webinar? We don't have anything else, other than we have some social media posts that we want to try and do, but that will be post that.

The EFH recommendations for the food web working group, does the working group feel like -- I mean, there's also a chance that we come to this January meeting and the food web working group has no recommendations, because we haven't finished doing what we need to do.

MS. CROWE: Paula.

MS. KEENER: I just want to ask a question, and I would like everybody here to be honest. How many of you double-task, or triple-task, when you're on a webinar? Double-task or triple-task or more when you're on a webinar? Multitask, and let me put it that way.

MS. HOWINGTON: Multitask.

MS. KEENER: So how many hands are up? I don't know.

MS. HOWINGTON: That's the other reason why maybe I was recommending like a two-day webinar meeting, because then you're not taking up your entire day. You're not feeling like, you know, you need to get stuff done this day for tomorrow. It can be in the morning on -- I'm picking Monday, but I really don't care. In the morning on Monday, we meet for a couple of hours, and we tackle half of this.

In the morning on Tuesday, we meet for a couple hours, and we tackle the other half, and you still have the afternoon to get stuff done, and so then like -- I mean, at least when you're in-person, you're forced to pay attention to me, but I recognize, when there's a webinar, those little you're not paying attention -- By the way, there's an attention button that tells me when you're not paying attention to what I'm doing. I know that.

You know, it's true. GoToWebinar has to be your focus, or it tells me it's not your focus. If you have something else going on, a Word document, a different Chrome open, it tells me that you are actively on that and not on GoToWebinar. There are eleven people. No, and this is the attention. This is how they track how much attention people are paying you. It's an analytic thing.

MS. CROWE: That's one of the things to take into consideration if we do a trial of doing this webinar in January or February, and you're noting that nobody is paying attention to anything that's going on, and then we don't do it as a webinar the next time.

MS. HOWINGTON: You have a little -- Well, no, and that's the thing though, is it doesn't track mouse movements. It's tracking whether or not GoToWebinar is the thing that you have clicked on and you're interacting with. If your notes tab is open, then, according to me, you're not paying attention. We are getting distracted. We are getting distracted from the point. Erin Spencer, who is down at the end of the table did -- Trip is yelling at us to focus, and Erin is saying winter webinar, and so --

MS. SPENCER: And I'm paying attention in the meeting. I just want to go on the record.

MS. HOWINGTON: Don't worry. You don't have the little triangle that tells me you're not. Anyway, I think the only thing that I would want to move is this integrated ecosystem assessment for the list for winter of I want you guys in-person for that, to have that discussion, and then you said Manomet would be here. That still is eight things, one of which is, again, the annual report,

the workplan update, and that could be short, but like ,with that, I would be looking at her like this isn't a full day for us, and so then I open it up to the group.

With this gameplan, with this workplan that you see right here, and we're ignoring summer right now, and so hide, because we're in summer, and are you all okay with trying for a winter webinar? I'm seeing hands. Are you all okay with the workplan as it is written down right now? Okay. So then we go to the next question, and so we've already picked a webinar.

Next meeting dates, and I went through, starting December 1 to the week of February 9, and the reason why I cut us off at the week of February 9 is because, after that, I am literally writing the report over the weekend and submitting it for the briefing book for March. I am giving myself no time to be able to do that. I would recommend, on the dates, maybe one of these weeks, and then the next question is going to be do we do one day, and slam it out, or do we do two half days, and so now I would like to ask for group input.

MS. CROWE: Brendan.

DR. RUNDE: Thank you, Madam Chair. I would definitely avoid December.

MS. HOWINGTON: Yes, and I figured.

DR. RUNDE: It seems like maybe we're gravitating towards the mid-January thing, which I think is by preference.

MS. HOWINGTON: Okay.

MS. CROWE: I'm going to vote for January 26th.

MS. HOWINGTON: The week of January 26th?

MS. CROWE: Yes.

MS. HOWINGTON: All right. I can send out a doodle poll, and we can figure out best dates during that week.

AP MEMBER: You've got a holiday weekend in there.

MS. HOWINGTON: Yes, and, if we can't find a good time in the week of January 26th for everyone to be able to sign on, then I will resend out for the week of January 20th, and we'll try a different thing, but, yes, there is a holiday weekend in there.

Now, the next question is one whole day webinar or a two-day split. I'm seeing two-day splits. All right. Webinar for winter 2025, week of January 26th, with a two-day split, and so two four-hour webinars with a break in the middle. You'll be able to wander around. Okay. That feels good. All right.

The final thing, and you will be receiving an email from me about this, probably this afternoon, because I've already drafted it. The Executive Order for Restoring America's Seafood

Competitiveness, we need to address this as a council, and so council staff is planning on hosting a webinar summarizing the executive order and providing the APs, including you guys, and including Coral, including every AP, a chance to give their input for a draft response to the council that we're then going to approve in the September council meeting.

Now, this says date TBD, but it is actually 6:00 p.m., August 11. Again, I'll be drafting this email, but the information, and the recorded presentation, will be available online as well, and so you can do public comment if you can't make that time, and there should be ample opportunity for you guys to be able to go in and help make recommendations.

One of the main goals we're trying to tackle is to suggest deregulatory actions, and so, thankfully, one of the things that is deregulatory is Coral 11/Shrimp 12. It actually meets this, of allowing shrimpers into that shrimp fishery access area, and it meets the executive order, and so I've already put that in as a suggestion, but, if there are any other regulations that you are aware of, that you think maybe we could, you know, remove this, and, again, council staff will give you all the documentation ahead of time. I would really appreciate if you could attend.

It is not a requirement. However, this is a huge lift, and what we're going to end up doing is we're going to have a big host webinar, and then we're going to end up having breakout groups. You all will be in my breakout group. Coral will be in my breakout group, and potentially one other AP, and so all of us will be able to get together and come up with some recommendations to then submit to the council in September, to get approved by NMFS, to try and meet this, and so August 11, 6:00 p.m. I will be sending out an email with more information later this week.

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

MS. HOWINGTON: I mean, one hour for the webinar? I think that's going to be dependent on discussion. We might have it scheduled for two. All right. We are done with the workplan, and so now we need to open it up to public comment and Other Business, which we've already tackled Other Business, and so it's really just public comment. Did we have any additional business? Paula does.

MS. KEENER: Thank you. I just have a question, and so, if I'm on the webinar, and I pull it over to a monitor, and then I'm working on the other monitor, you can still see that?

MS. HOWINGTON: I will show you how it works.

MS. CROWE: Kevin.

MS. SPANIK: Thank you. I just have one comment about -- Since we're talking about going across AP boundary lines here, those species for the EFH life history updates that people didn't volunteer for, probably because of lack of expertise in those, it might be good to check with Coral, the Coral AP, for that, and there's a Golden Crab AP as well, and so those guys would probably be a much better source of information for updating those than the personnel we have here.

MS. HOWINGTON: I'm putting it on the list now for our AP actions, of Kathleen will reach out to Golden Crab and Spiny Lobster, and we do not officially have a Sargassum AP. I am the Sargassum AP. I think that's what that is, because I'm the staff contact, and so, hey, maybe I'll

tackle sargassum, but I will reach out to those two APs, and send them the user guide, and ask them if it's the most up-to-date, or ask them if they're willing to. I'll ask the staff if they're willing to, and then reach out. If you want to open up for public comment.

MS. CROWE: Okay, and so, if there's no other business, then, as I mentioned on day one, we also open up the floor for public comment at the end of our list, and so, if there is any member of the public that would like to make comment, or, Kathleen, if you have any to read, now is the time.

MS. HOWINGTON: I'm seeing no hands raised for public comment. We did receive two written comments, one of which was from Albie Solana. He works with -- Well, I'm just going to read it out loud. It's important to make note the hardbottom map is incomplete from Cape Lookout past Frying Pan Shoals. Tech will improve, and work like Chris Taylor's will increase the area of the map by about 75 percent to 85 percent. Much of the pavement bottom could bring complications for Carolina Long Bay OSW project. Will need to be addressed and mitigated if the project is to move forward. I believe this was when we were discussing beneficial use projects. That was when he sent this in, and so it's in response to that.

Then, in response to our space industry conversation, Bob Zales was online. He does run charters out of Florida. He also is in charge of the, and help me out, Southeast Fisheries Association, and he has been involved in SpaceX for a very long time. Due to our involvement in various media articles, he has made comments on all the EAs, all the EISs. He has made comments to the Coral AP on Coral 11 and Shrimp 12. He is very involved. We appreciate him very much.

The reality is the launches will not be stopped. The government is far into them. As I provided in the question section on Tuesday, Spanish mackerel is a key fishery affected by these launches. He was surprised to not hear it, and, in addition to shrimp trawl nets being hit by rocket debris, as you should know, there are national and international requirements for discharging various materials. SpaceX told us, in a meeting, that they did not attempt to recover debris that they know has been discharged, and these issues are a problem.

If you would like to go online and read these, and that was kind of a quick summary, but, if you want to go online and read these in detail, or if you want to reach out to them, we do have their emails available, if you would like more information, and so we have two written comments. Any other hands online? Seeing none.

MS. CROWE: Okay, and so no additional public comment, and we have finished our agenda, and so, with that, that adjourns the summer meeting of the Habitat AP, and we will virtually see everyone in January.

(Whereupon, the meeting adjourned on July 17, 2025.)

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Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
August 19, 2025

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

COUNCIL STAFF

Executive Director
John Carmichael
john.carmichael@safmc.net
843-302-8435

Deputy Director – Science
Dr. Chip Collier
chip.collier@safmc.net
843-302-8444

Deputy Director - Management
Myra Brouwer
myra.brouwer@safmc.net
843-302-8436

Citizen Science Program Manager
Julia Byrd
julia.byrd@safmc.net
843-302-8439

Admin. Secretary/Travel Coordinator
Rachael Silvas
Rachael.silvas@safmc.net
843-571-4370

Quantitative Fishery Scientist
Dr. Judd Curtis
Judd.curtis@safmc.net
843-302-8441

Fishery Economist & FMP Coordinator
John Hadley
john.hadley@safmc.net
843-302-8432

Habitat and Ecosystem Scientist
Kathleen Howington
kathleen.howington@safmc.net
843-725-7580

Fishery Scientist I
Allie Iberle
Allie.iberle@safmc.net
843-225-8135

Public Information Officer
Kim Iverson kim.iverson@safmc.net
843-224-7258

Administrative Officer
Kelly Klasnick kelly.klasnick@safmc.net
843-763-1050

BFP Outreach Specialist
Ashley Oliver Ashley.Oliver@safmc.net
843-225-8135

Fishery Scientist II
Dr. Mike Schmidtke
mike.schmidtke@safmc.net
843-302-8433

Communication and Digital Media Specialist
Nicholas Smillie
Nick.Smillie@safmc.net
843-302- 8443

Staff Accountant
Suzanna Thomas
suzanna.thomas@safmc.net
843-571-4368

Fishery Social Scientist
Christina Wiegand christina.wiegand@safmc.net
843-302-8437

Citizen Science Project Manager
Meg Withers
Meg.withers@safmc.net
843-725-7577

SEDAR

SEDAR Program Manager
Dr. Julie Neer
Julie.neer@safmc.net
843-302-8438

SEDAR Coordinator
Emily Ott Emily.Ott@safmc.net
937-479-6171

Panel	Prefix	First	Last	Position	Affiliation	Seat	City	State
SAFMC		Trish	Murphey	Chair	NC Division of Marine Fisheries	State Agency	Morehead City	NC
SAFMC		Jessica	McCawley	Vice-Chair	Florida Fish and Wildlife Conservation Commission	State Agency	Tallahassee	FL
SAFMC		Robert	Beal		Atlantic States Marine Fisheries Commission	ASMFC	Arlington	VA
SAFMC	Dr.	Carolyn	Belcher		GA DNR Coastal Resources Division	State Agency	Brunswick	GA
SAFMC		Gary	Borland			Obligatory	Chapin	SC
SAFMC		Amy	Dukes		SC DNR Marine Resources Division	State Agency	Charleston	SC
SAFMC		Tim	Griner			Obligatory	Charlotte	NC
SAFMC		Judy	Helmey			Obligatory	Savannah	GA
SAFMC		James	Hull			Obligatory	Ormond Beach	FL
SAFMC		Kerry	Marhefka			At-Large	Mt. Pleasant	SC
SAFMC	Lt.	Tom	Pease		Seventh Coast Guard District	USCG	Miami	FL
SAFMC		Charlie	Phillips			At-Large	Townsend	GA
SAFMC		Tom	Roller			At-Large	Beaufort	NC
SAFMC		Robert	Spottswood			At-Large		
SAFMC		Andy	Strelcheck		NOAA Fisheries Southeast Region	NOAA Fisheries	St. Petersburg	FL
SAFMC		Deirdre	Warner-Kramer		Office of Marine Conservation OES / OMC	U.S. State Department	Washington	DC
SAFMC		TBD	TBD		U.S. Fish and Wildlife Service Representative	USFWS		

HE AP Tue 7/15/25

Panel	Prefix	First	Last	Position	Affiliation	City	State
HEAP		Stacie	Crowe	Chair and SC Sub Panel Chair	SC DNR Office of Env. Programs	Charleston	SC
HEAP		Paul	Medders	Vice Chiar and GA Sub Panel Chair	GA DNR Coastal Resources Division	Brunswick	GA
HEAP		Charlie	Deaton	NC Sub Panel Chair	N.C Division of Marine Fisheries	Wilmington	NC
HEAP	Dr.	Matthew	Kenworthy	FL Sub Panel Chair	FL Fish & Wildlife Commission	Tallahassee	FL
HEAP		Gregg	Bodnar	NC Sub Panel	Division of Coastal Management NCDEQ	Morehead	NC
HEAP	Dr.	Brenden	Runde	NC Sub Panel	TNC	Beaufort	NC
HEAP		Cameron	Luck	NC Sub panel	NCDENR	Morehead	NC
HEAP		Benjamin	Thepaut	SC Sub panel	SCDHEC-OCRM	Charleston	SC
HEAP		Paula	Kenner	SC Sub panel	Global Ocean Visions	Charleston	SC
HEAP		David	Whitiker	SC Sub panel	CofC	Charleston	SC
HEAP				GA Subpanel			
HEAP		Thomas	Jones	GA Sub Panel	recreational fisherman	Atlanta	GA
HEAP		Stephen	Morrison	GA Sub Panel	Commercial and recreational fisherman	Savannah	GA
HEAP		Steve	Miller	FL Sub Panel	St. John's River Water Mgmt. Dist.	Palatka	FL
HEAP		David	Webb	FL Sub Panel	Recreational fishermen prodigy charter	Islamorada	FL
HEAP		Erin	Spencer	FL Sub Panel	Science/NGO (Miami)	Miami	FL
HEAP		Anne	Deaton	Non Sub Panel Member	Fish Biologist SERO: HCD	Beaaufort	NC
HEAP	Dr.	Matt	Johnson	Non Sub Panel Member	Habitat Ecology Branch Chief SEFSC	Miami	FL
HEAP		Scott	Kathey	Non Sub Panel Member	Gray's Reef National Marine Sanctuary	Savannah	GA
HEAP	just here	Simen	Kaalstad	Non Sub Panel Member	Atlantic States Marine Fisheries Commission	Arlington	VA
HEAP		Brian	Hooker	Non Sub Panel Member	Office of Renewable Energy Programs BOEM	Sterling	VA
HEAP		Laura	Busch	Non Sub Panel Member	U.S. Fleet Forces Environmental Readiness N	Norfolk	VA
HEAP	Dr.	Laurent	Cherubin	Non Sub Panel Member	NOAA CIOERT	Ft. Pierce	FL
HEAP	here	Kevin	Spanik	Non Sub Panel Member	SCDNR	Charleston	SC
HEAP		Walter "Trip"	Boltin	Non Sub Panel Member	FWS	Moncks Corner	SC
HEAP	Dr.	Wilson	Laney	Non Sub Panel Member	Dept. of Applied Ecology NC State University	Raleigh	NC
HEAP		Rua	Mordecai	Non Sub Panel Member	SECAS	Cary	NC

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

COUNCIL STAFF

Executive Director
John Carmichael
john.carmichael@safmc.net
843-302-8435

Deputy Director – Science
Dr. Chip Collier
chip.collier@safmc.net
843-302-8444

Deputy Director - Management
Myra Brouwer
myra.brouwer@safmc.net
843-302-8436

Citizen Science Program Manager
Julia Byrd
julia.byrd@safmc.net
843-302-8439

Admin. Secretary/Travel Coordinator
Rachael Silvas
Rachael.silvas@safmc.net
843-571-4370

Quantitative Fishery Scientist
Dr. Judd Curtis
Judd.curtis@safmc.net
843-302-8441

Fishery Economist & FMP Coordinator
John Hadley
john.hadley@safmc.net
843-302-8432

Habitat and Ecosystem Scientist
Kathleen Howington
kathleen.howington@safmc.net
843-725-7580

Fishery Scientist I
Allie Iberle
Allie.iberle@safmc.net
843-225-8135

Public Information Officer
Kim Iverson kim.iverson@safmc.net
843-224-7258

Administrative Officer
Kelly Klasnick kelly.klasnick@safmc.net
843-763-1050

Lara Klibansky

BFP Outreach Specialist
Ashley Oliver Ashley.Oliver@safmc.net
843-225-8135

Fishery Scientist II
Dr. Mike Schmidtke
mike.schmidtke@safmc.net
843-302-8433

Communication and Digital Media Specialist
Nicholas Smillie
Nick.Smillie@safmc.net
843-302- 8443

Staff Accountant
Suzanna Thomas
suzanna.thomas@safmc.net
843-571-4368

Fishery Social Scientist
Christina Wiegand christina.wiegand@safmc.net
843-302-8437

Citizen Science Project Manager
Meg Withers
Meg.withers@safmc.net
843-725-7577

SEDAR

SEDAR Program Manager
Dr. Julie Neer
Julie.neer@safmc.net
843-302-8438

SEDAR Coordinator
Emily Ott Emily.Ott@safmc.net
937-479-6171

HE AP Wed 7/16/25

Panel	Prefix	First	Last	Position	Affiliation	Seat	City	State
SAFMC		Trish	Murphey	Chair	NC Division of Marine Fisheries	State Agency	Morehead City	NC
SAFMC		Jessica	McCawley	Vice-Chair	Florida Fish and Wildlife Conservation Commission	State Agency	Tallahassee	FL
SAFMC		Robert	Beal		Atlantic States Marine Fisheries Commission	ASMFC	Arlington	VA
SAFMC	Dr.	Carolyn	Belcher		GA DNR Coastal Resources Division	State Agency	Brunswick	GA
SAFMC		Gary	Borland			Obligatory	Chapin	SC
SAFMC		Amy	Dukes		SC DNR Marine Resources Division	State Agency	Charleston	SC
SAFMC		Tim	Griner			Obligatory	Charlotte	NC
SAFMC		Judy	Helmey			Obligatory	Savannah	GA
SAFMC		James	Hull			Obligatory	Ormond Beach	FL
SAFMC		Kerry	Marhefka			At-Large	Mt. Pleasant	SC
SAFMC	Lt.	Tom	Pease		Seventh Coast Guard District	USCG	Miami	FL
SAFMC		Charlie	Phillips			At-Large	Townsend	GA
SAFMC		Tom	Roller			At-Large	Beaufort	NC
SAFMC		Robert	Spottswood			At-Large		
SAFMC		Andy	Strelcheck		NOAA Fisheries Southeast Region	NOAA Fisheries	St. Petersburg	FL
SAFMC		Deirdre	Warner-Kramer		Office of Marine Conservation OES / OMC	U.S. State Department	Washington	DC
SAFMC		TBD	TBD		U.S. Fish and Wildlife Service Representative	USFWS		

HE AP Tue 7/15/25

Panel	Prefix	First	Last	Position	Affiliation	City	State
HEAP		Stacie	Crowe	Chair and SC Sub Panel Chair	SC DNR Office of Env. Programs	Charleston	SC
HEAP		Paul	Medders	Vice Chiar and GA Sub Panel Chair	GA DNR Coastal Resources Division	Brunswick	GA
HEAP		Charlie	Deaton	NC Sub Panel Chair	N.C Division of Marine Fisheries	Wilmington	NC
HEAP	Dr.	Matthew	Kenworthy	FL Sub Panel Chair	FL Fish & Wildlife Commission	Tallahassee	FL
W HEAP		Gregg	Bodnar	NC Sub Panel	Division of Coastal Management NCDEQ	Morehead	NC
HEAP	Dr.	Brenden	Runde	NC Sub Panel	TNC	Beaufort	NC
HEAP		Cameron	Luck	NC Sub panel	NCDENR	Morehead	NC
HEAP		Benjamin	Thepaut	SC Sub panel	SCDHEC-OCRM	Charleston	SC
HEAP		Paula	Kenner	SC Sub panel	Global Ocean Visions	Charleston	SC
HEAP		David	Whitiker	SC Sub panel	CofC	Charleston	SC
HEAP				GA Subpanel			
HEAP		Thomas	Jones	GA Sub Panel	recreational fisherman	Atlanta	GA
HEAP		Stephen	Morrison	GA Sub Panel	Commercial and recreational fisherman	Savannah	GA
W HEAP		Steve	Miller	FL Sub Panel	St. John's River Water Mgmt. Dist.	Palatka	FL
HEAP		David	Webb	FL Sub Panel	Recreational fishermen prodigy charter	Islamorada	FL
HEAP		Erin	Spencer	FL Sub Panel	Science/NGO (Miami)	Miami	FL
W HEAP		Anne	Deaton	Non Sub Panel Member	Fish Biologist SERO: HCD	Beaaufort	NC
W HEAP	Dr.	Matt	Johnson	Non Sub Panel Member	Habitat Ecology Branch Chief SEFSC	Miami	FL
W HEAP		Scott	Kathey	Non Sub Panel Member	Gray's Reef National Marine Sanctuary	Savannah	GA
HEAP		Simen	Kaalstad	Non Sub Panel Member	Atlantic States Marine Fisheries Commission	Arlington	VA
W HEAP		Brian	Hooker	Non Sub Panel Member	Office of Renewable Energy Programs BOEM	Sterling	VA
HEAP		Laura	Busch	Non Sub Panel Member	U.S. Fleet Forces Environmental Readiness N	Norfolk	VA
HEAP	Dr.	Laurent	Cherubin	Non Sub Panel Member	NOAA CIOERT	Ft. Pierce	FL
HEAP		Kevin	Spanik	Non Sub Panel Member	SCDNR	Charleston	SC
W HEAP		Walter "Trip"	Boltin	Non Sub Panel Member	FWS	Moncks Corner	SC
HEAP	Dr.	Wilson	Laney	Non Sub Panel Member	Dept. of Applied Ecology NC State University	Raleigh	NC
W HEAP		Rua	Mordecai	Non Sub Panel Member	SECAS	Cary	NC

Brendan + Cameron at hotel but sick

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

COUNCIL STAFF

Executive Director
John Carmichael
john.carmichael@safmc.net
843-302-8435

Deputy Director – Science
Dr. Chip Collier
chip.collier@safmc.net
843-302-8444

Deputy Director - Management
Myra Brouwer
myra.brouwer@safmc.net
843-302-8436

Citizen Science Program Manager
Julia Byrd
julia.byrd@safmc.net
843-302-8439

Admin. Secretary/Travel Coordinator
Rachael Silvas
Rachael.silvas@safmc.net
843-571-4370

Quantitative Fishery Scientist
Dr. Judd Curtis
Judd.curtis@safmc.net
843-302-8441

Fishery Economist & FMP Coordinator
John Hadley
john.hadley@safmc.net
843-302-8432

Habitat and Ecosystem Scientist
Kathleen Howington
kathleen.howington@safmc.net
843-725-7580

Fishery Scientist I
Allie Iberle
Allie.iberle@safmc.net
843-225-8135

Public Information Officer
Kim Iverson kim.iverson@safmc.net
843-224-7258

Administrative Officer
Kelly Klasnick kelly.klasnick@safmc.net
843-763-1050

BFP Outreach Specialist
Ashley Oliver Ashley.Oliver@safmc.net
843-225-8135

Fishery Scientist II
Dr. Mike Schmidtke
mike.schmidtke@safmc.net
843-302-8433

Communication and Digital Media Specialist
Nicholas Smillie
Nick.Smillie@safmc.net
843-302- 8443

Staff Accountant
Suzanna Thomas
suzanna.thomas@safmc.net
843-571-4368

Fishery Social Scientist
Christina Wiegand christina.wiegand@safmc.net
843-302-8437

Citizen Science Project Manager
Meg Withers
Meg.withers@safmc.net
843-725-7577

SEDAR

SEDAR Program Manager
Dr. Julie Neer
Julie.neer@safmc.net
843-302-8438

SEDAR Coordinator
Emily Ott Emily.Ott@safmc.net
937-479-6171

Lara Klibansky

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SAFMC		Robert	Beal		Atlantic States Marine Fisheries Commission	ASMFC	Arlington	VA
SAFMC	Dr.	Carolyn	Belcher		GA DNR Coastal Resources Division	State Agency	Brunswick	GA
SAFMC		Gary	Borland			Obligatory	Chapin	SC
SAFMC		Amy	Dukes		SC DNR Marine Resources Division	State Agency	Charleston	SC
SAFMC		Tim	Griner			Obligatory	Charlotte	NC
SAFMC		Judy	Helmey			Obligatory	Savannah	GA
SAFMC		James	Hull			Obligatory	Ormond Beach	FL
SAFMC		Kerry	Marhefka			At-Large	Mt. Pleasant	SC
SAFMC	Lt.	Tom	Pease		Seventh Coast Guard District	USCG	Miami	FL
SAFMC		Charlie	Phillips			At-Large	Townsend	GA
SAFMC		Tom	Roller			At-Large	Beaufort	NC
SAFMC		Robert	Spottswood			At-Large		
SAFMC		Andy	Strelcheck		NOAA Fisheries Southeast Region	NOAA Fisheries	St. Petersburg	FL
SAFMC		Deirdre	Warner-Kramer		Office of Marine Conservation OES / OMC	U.S. State Department	Washington	DC
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HEAP		Walter "Trip"	Boltin	Non Sub Panel Member	FWS	Moncks Corner	SC
HEAP	Dr.	Wilson	Laney	Non Sub Panel Member	Dept. of Applied Ecology NC State University	Raleigh	NC
HEAP		Rua	Mordecai	Non Sub Panel Member	SECAS	Cary	NC

Attendee Report: July 2025 Habitat and Ecosystem AP Meeting

Report Generated:
07/17/2025 12:56 PM EDT

Webinar ID	Actual Start Date/Time
929-905-979	07/15/2025 12:05 PM EDT

Staff Details

Attended	Interest Rating
Yes	Not applicable for staff

Attendee Details

Last Name	First Name
Applegate	Sunny
Bianchi	Alan
Bodnar	Gregg
Boltin	Tripp
Deaton	Anne
Gentry	Lauren
Gore	Karla
Heyden	Matt
Howington	Kathleen
Jensen	Brandon
Johnson	Matthew
Kathey	Scott
Klasnick	01Kelly
Laney	Reid Wilson
Malinowski	Richard
McCoy	Sherylanne
Mehta	Nikhil
Mordecai	Rua
Murphey	Trish
Myjak	Michael
Neale	Rick
Sedberry	George
Thompson	Laurilee
Trantham	Brandi
Venuto	Charlie
Voges	Amanda
Walsh	Mick
Williams	Travis
Wilson	Laura
Zales	Bob

blanchard	sarah
collier	chip
miller	steve
thomas	suz

Attendee Report: July 2025 Habitat and Ecosystem AP Meeting

Report Generated:
07/17/2025 12:58 PM EDT

Webinar ID	Actual Start Date/Time
929-905-979	07/16/2025 07:45 AM EDT

Staff Details

Attended	Interest Rating
Yes	Not applicable for staff

Attendee Details

Last Name	First Name
(CZC)	Benjamin
Bianchi	Alan
Bodnar	Gregg
Boltin	Tripp
Brodeur	Michelle
Busch	Laura
Cherney	Laura
Commander	Christian
De Freese, Ph. D.	Duane
Deaton	Anne
Detweiler	Derek
Ellis	Tim
Gore	Karla
Hooker	Brian
Howington	Kathleen
Hudak	Sarah
Jensen	Brandon
Johnson	Matthew
Kathey	Scott
Kenworthy	Matt
Klasnick	01Kelly
Laney	Reid Wilson
Larsen	Ron
Malinowski	Richard
McPherson	Matthew
Mehta	Nikhil
Mordecai	Rua
Murphey	Trish
Paris	Morgan
Royster	Daniel

Sedberry	George
Shudtz	Matthew
Solana	Albie
Spanik	Kevin
Thompson	Laurilee
Voges	Amanda
Walsh	Mick
Williams	Travis
Zales	Bob
Zapf	Daniel
collier	chip
davis	jenny
miller	steve
thomas	suz

Attendee Report: July 2025 Habitat and Ecosystem AP Meeting

Report Generated:
07/17/2025 12:58 PM EDT

Webinar ID	Actual Start Date/Time
929-905-979	07/17/2025 07:51 AM EDT

Staff Details

Attended	Interest Rating
Yes	Not applicable for staff

Last Name	First Name
(CZC)	Benjamin
Bianchi	Alan
Bodnar	Gregg
Boltin	Tripp
Coleman	Heather
Deaton	Anne
Ellis	Tim
Foor	Brandon
Gentry	Lauren
Howington	Kathleen
Johnson	Matthew
Kathey	Scott
Klasnick	01Kelly
Klibansky	Lara
Laney	Reid Wilson
Mehta	Nikhil
Mordecai	Rua
Murphey	Trish
Paris	Morgan
Royster	Daniel
Sedberry	George
Spanik	Kevin
Spencer	Erin
Walsh	Mick
Williams	Travis
Zapf	Daniel
collier	chip
thomas	suz