

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT PROTECTION AND ECOSYSTEM-BASED MANAGEMENT COMMITTEE

**Sawgrass Marriott
Ponte Vedra Beach, FL**

June 13, 2017

SUMMARY MINUTES

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Other Observers/Participants attached.

The Habitat Protection and Ecosystem-Based Management Committee of the South Atlantic Fishery Management Council convened at the Sawgrass Marriott, Ponte Vedra Beach, Florida, Tuesday morning, June 13, 2017, and was called to order by Chairman Doug Haymans.

MR. HAYMANS: I will go ahead and call the Habitat Protection and Ecosystem-Based Management Committee to order. You've got the agenda in front of you, and is there any additions to the agenda? Seeing none, we will accept the agenda.

You've had a chance to review the March 2017 committee minutes. Any corrections or additions to the minutes? Seeing none, we will accept those minutes as presented. A reminder that the committee makeup is Wilson, Mel, Chester, Tim, Jessica, and our Coast Guard and ASMFC representative is not in attendance.

I did try to give you guys a heads-up that, during this presentation, we will be referencing a website that Mike sent a link around to at eight o'clock this morning, and so, at some point during this, pull that up, and it will make going through this much more useful. From here on out, it is the Roger show, and I will turn it over to Roger.

MR. PUGLIESE: Okay. The first agenda item was a report-out on the Habitat Protection and Ecosystem-Based Advisory Panel meeting. Pat Geer was pretty well buried in a lot of additional state activities and other responsibilities, and so we collaborated on getting the report together and providing it for the council meeting.

I just want to touch on the highlights of the advisory panel meeting. The panel began reviewing the Artificial EFH Policy Statement. The original intention was to wrap things up and move it forward, but there was some desire to refine it further and add even more newer information, some habitat-specific information, that was desired to provide a draft in a fairly quick turnaround, within June and August.

Again, Lisa Havel with ASMFC is coordinating that directly. She had built it from a collaboration of our artificial reef state partners as well as the Artificial Reef Committee as ASMFC, and this was taking and integrating all of the Habitat and Ecosystem Advisory Panel recommendations and comments, with the intent that that be wrapped up by early August. The intent is to bring this back to the council for approval at the September meeting.

There was also discussion that, in the policy statement, as drafted, there were some considerations that was raised at the last council meeting with regard to protected resources implications and some of the problems that had been arising on protected resources, and there had originally been a desire to get some clarification from the Regional Office at the September meeting, but I think there is no activities that are ongoing at this time, and so I think, until things change, we'll probably be in a little bit of a queue to see what other implications -- Hopefully, maybe, there can be even additional recommendations in the policy as it's finalized, when it comes back to the council to make sure that that's not still an issue.

MR. HAYMANS: Wilson and Mel were also in attendance at the AP. Anything to add on the artificial reef policy?

DR. LANEY: Thank you, Mr. Chairman. Just that there was a great deal of discussion, but, given the current level of inaction, I guess, would be the best way to put it, and Mel may want to weigh in too, as far as South Carolina goes, but we decided that we would defer any additional discussion of that issue until a future meeting.

MR. BELL: Right. We're currently engaged in consultation right now, and so I guess we really couldn't talk about a lot of stuff, and I know Georgia had gone through that, and I suspect the next thing that might occur, at some point, is there's a piece of North Carolina that falls into the area that might go down the same route, but those consultation processes have moved along, or are moving along, and so we'll just see how all of that goes. I am very positive that we will be in better shape in a few weeks.

MR. HAYMANS: Thank you, gentlemen, and so, just as a reminder, we expect to see the artificial reef policy statement in its completion in September?

MR. PUGLIESE: Yes. The other area that was discussed at the meeting was an update on the energy development activities in the South Atlantic region, and Brian Hooker provided a good overview of the activities. One of the most significant activities was the most recent lease sales of wind areas off of North Carolina, a fairly significant 100,000-plus-acre area. Some things are moving forward on the wind development in the South Atlantic region.

The other aspect that he really highlighted was the array of research efforts, detailed information, and longer-term research efforts that is being conducted through BOEM's work and is specific to the South Atlantic and along the Greater Atlantic area, and the fact that there is a 2018 activity coming up, and so there is opportunities to provide even more recommendations on refining what we need for the South Atlantic.

One of the other points that was discussed, and we did provide the council's last position that was sent to the Secretary of Interior on the seismic testing and the council's policy on energy development, energy exploration and development, and Brian was also showing what was the directive to BOEM, in terms of moving forward with advancing, potentially, some of the seismic testing activity, and so I think it's clear on the record what the council's positions are, and hopefully that's integrated in any additional future activities as it moves forward.

MR. HAYMANS: Any questions on the energy development activities?

MR. PUGLIESE: Some of the links specifically to the ongoing research activities are provided in the report that's online. The other item that was presented relative to the council is ongoing regional deepwater coral mapping activities, and, specifically, Dr. Wagner provided a review of the Southeast Deep Coral Initiative activities in the Southeast Region, and I think one of the most important outcomes of that is it's providing direction between 2016 and 2019, and there is opportunities for focused work done in the South Atlantic region.

I think Chip had provided some of our earlier recommendations, based on even earlier recommendations, on our managed areas, et cetera, earlier on. We had built those and provided those in the process, and Dr. Wagner assured us that, as this continues to evolve, that it's going to be two-way communications, where that information is going to be available so we can populate

and expand our information systems, so they can be used directly in management, plus we can connect.

One of the things that I highlighted is that we're moving that South Atlantic mapping strategy forward, so that we can connect what becomes priorities online for the council and can get connected directly into some of these areas and help target specifically both needs within managed areas as well as supporting some of the detailed information for essential habitat along the Atlantic and South Atlantic areas. Are there any questions on that? The link to the presentation he made is included also.

That moves us on into the Fishery Ecosystem Plan development. What we have provided in this meeting were some of the core sections, the Food Web Connectivity Section, the Climate Variability in Fisheries Section, the Managed Species Section, which we literally had the Managed Species Team meet a couple of weeks ago, to finalize and wrap up and present the core components of that and advance that for integration into the FEP process. In addition, we have had -- There were some additional revisions, and so, under the late documents, there is revised versions of those three documents also provided.

One of the discussion points also at the last meeting was the EFH user guide, and that actually had been developed a while back, but there were some specific wording modifications to address concerns about state-designated nursery habitats. Most all of those were re-tailored to track the existing regulatory wording for some of those specific areas, and it re-clarified what those were as the designated areas that may serve as nursery habitats. There is still a couple of tweaks that I realize -- I caught them at the end, and they need to be also brought back into that, but I think I will work with Pace to make sure that that clarified what the position is on that, because that was something that had been evolving from the state sub-panel chairs with the Habitat Advisory Panel with the actual wording of those individual areas.

In virtually all cases, one of the criteria for those designations at the state level say that they are useful in nursery habitats, and so there's a lot more history that went behind how we got to that point and including those, but I think some of the wording clarifies it, and, if it needs to be clarified even further, that's something we can discuss. Those are all activities.

As part of this discussion, I think the biggest thing is we want to get the additional comments and refine the sections as we move forward, but I'm going to touch on the FEP II completion timeline. That was an additional document that was provided, the FEP II timeline, and what we need to get into is the implementation plan development process. We had put a draft for discussion and advancement, so that we can get this thing moving further along.

Finally, a component of it is going to be really highlighting the interactive operability of -- We had talked about this becoming a living system. The FEP is going to evolve, and so it's ongoing, and that's one of the things we've been working with Brett and their designer, to get a wiki system. It's not a real website, but it's a demonstration capability that Mike had distributed that link to, and I'm going to be walking through just what some of the -- That vision from the last council meeting, where we had those boxes of what visually the FEP looks like and what this potentially can be, both in document information and linkages and then even some of the interactive capabilities that exist within multiple systems, from mapping to species information to other partner activities. That is kind of the bigger picture of everything we're going to do under FEP

development, and it kind of merges into the tool capabilities when we get into the online system presentation.

I guess the first thing we can do is go ahead and open up the section on Food Web and Connectivity, South Atlantic Food Web and Connectivity. I would open that up for discussion. As I mentioned, there were some of the things -- Again, we ran into the issue of what continually kept on being our problem is that there were some approved executive summaries that really just needed to go away, and they kept on getting pulled back in, because they were approved. Those were removed, and what you see in both of these documents are executive summaries, or executive summary introductions, that will serve as the stand-alone documents separately and updated and based on what was the components that were approved in the policy statements.

Some of those discussions in the policy statements only address a piece of those executive summaries, and so that made it even more confusing, and so hopefully this catches up at least most of those previous, and now we can discuss what else may need to be addressed or where we want to go with this.

The other aspect, in general, before we get into detail, is the modification here is that we also included the summary recommendations, verbatim, from the policy statement, so that it flowed from the discussion and the general summary into some of those summary recommendations, and so I think these are going to be useful as we talk about how some of these feed into the implementation plan discussion later. With that, I would open it up.

MR. HAYMANS: Is there any discussion on the Food Web and Connectivity Section, and I'm looking at Florida. They're not looking at me. Anybody else?

DR. DUVAL: I am not on the committee, but I know we got these revised versions. There had been, in the forage fish section, and I guess in the original one, it was -- I think it still might be PDF page 11. It's Section 2.5, Emerging Trends. There is several references in there that the literature cited in that -- I guess it's the end of that first sentence, the Pikitch et al. and Essington et al, and I think Hilborn et al. None of those are in the actual literature cited section, and I don't know if that was taken care of in the revised version, but I noticed that, in the original version, that those references were not in there, and so I would just say to make sure that those get included in the literature cited section.

MR. HAYMANS: Thank you.

MS. MCCAWLEY: On page 18, it's the next-to-last paragraph, and it's in the Bycatch section. It looks like that paragraph is supposed to be about trawling, but there is a number of other bycatch reduction things in this paragraph, and it just seems like maybe we need a paragraph about trawling and then we need a paragraph about -- There is sentences in here about escape panels in traps and non-stainless-steel hooks, and maybe that needs to be split out a little bit more.

MR. PUGLIESE: Separate trawling and then other gear.

MS. MCCAWLEY: Yes.

MR. HAYMANS: Anybody else? Okay.

MR. PUGLIESE: We are going to be just revising and continuing to clean this up, and, if there are others, please provide those. I think it's more important that we just pin down this and advance it, and then we get into operationalizing and the implementation activities.

That moves us to the climate activity, and there weren't a whole lot of additional revisions. I think Lora caught most all of the recommendations. We were working back and forth with our Chairs, and thank you very much for doing that. One thing I did do is that I did add in additional wording from the original executive summary, just to put it into context, so that the frontend of the introduction is actually the executive summary, so that it just says what's following, in terms of the structure, and so the one paragraph that talks about the different chapters of the actual section just were highlighted here.

The other thing, again, also, is we pulled those summary recommendations from the policy and integrated those at the back of this section, and so there's the flow from the discussions, the summaries, and then into some of the summary recommendations and into the policy, and so those were the major areas that were modified within this one.

MR. BELL: Just so I am clear, the version we have is the final version and what you're putting up there has some additional changes in it.

MR. PUGLIESE: It's in late documents. Sorry if I didn't clarify that. It's in the late documents. It would be A2 Revised, in that folder, and sorry if I didn't clarify what those were. Yes, these were catches and some additions. That idea of the recommendations was something, after we had some discussions, that it made sense to add those into and integrate into this section.

DR. DUVAL: Again, I'm not on the committee, but I found just a couple of additional typos, and I can forward those to you, and they are very minor. One thing in this section, and that's on PDF page 25, and so it's under the paragraph titled "Major Observation Gaps", and there is two paragraphs there, and the second one of those talks about that an additional problem is that catches and effort estimates are not known at the spatial and temporal resolution needed to determine relationships between the catch and the environment, because only landings are reported.

Then it goes on to talk about vessel monitoring systems are not required, nor are there many vessels involved in cooperative research to provide the data, and the last sentence is that vessel monitoring systems and cooperative research with industry players should be a priority in the South Atlantic.

I actually disagree with that statement. Not about the cooperative research part, but about the vessel monitoring systems piece, because, really, the problem is that catches are not known at the spatial and temporal resolution needed, and so, whether or not there is use of VMS to address that is a management decision, and I think it's somewhat inappropriate to make scientific statements about that here, given that the council has debated this issue previously and that you could get additional spatially-explicit information from a GPS-enabled logbook.

I think the point is well made, and I agree that we don't have catches or effort estimates that are as spatially explicit as we would like them to be, so that we can be more targeted in our management approaches, but I don't think there should be a statement by this group as to what the tool to get there should be. There are multiple tools that could be used to get you to that place.

MR. PUGLIESE: Yes, and I think dropping -- In that last sentence, dropping "VMS", and specifically stating collection of data to give you spatial resolution. Something to that effect would provide more of a focus on what you need to do versus the vehicle to do it, because there is other opportunities with logbooks and all types of things that the council is already advancing cooperative efforts to get the different industries and get that finer-resolution information.

DR. DUVAL: Yes, and I think if we just modified that sentence to indicate that tools that would lead to address this problem to provide the spatial and temporal resolution necessary should be a priority, along with cooperative research. I think we all agree with cooperative research, but it really stood out to me, and, given some of the controversial conversations we've had about the use of VMS here at the council table, I am not ready, and I'm not willing, to keep that in here. Thanks.

MS. MCCAWLEY: Page 32, it talks about the South Atlantic's Atlantic Menhaden Technical Committee, and I think that they mean Atlantic States.

MR. HAYMANS: Anybody else?

MR. PUGLIESE: Okay. That brings us to A-4, which is the Managed Species Section. What this provides -- As I said, this is coming right off of the Managed Species Team meeting. Marcel was co-chairing this group, and we met in St. Petersburg to refine and finalize this document. We worked through Google Docs to complete the entire summarization and standardize those, and I will touch on these when we get into the -- Just on the structure, when we get into the demonstration online, but the idea is to give you this very concise view of what the individual species in the South Atlantic are, in a very common terminology.

I will touch on some of the additions that we can have, because the idea is that you would be able to jump to these. It would give you that nice, concise thing, but then also be able to jump to very detailed information and other links and different things that we can add in there, and so that's where I think we're at that point that, if there are other things that you want to -- What I will say is the online system is intended to give you a lot of those types of queryable capabilities. When I get into that we can go further, but I think they did an excellent job. Everybody worked to get this as complete and as concise. Are there any comments specifically on this?

DR. DUVAL: I really like this section. I like the fact that it's all like one-pagers for these species. I think that's really helpful. I did have just some minor typos that I highlighted in this that I could send to you. I think the page on yellowfin says yellowmouth in like one or two places, and so I can just email that to you. Those are minor things. There is nothing substantive.

MR. PUGLIESE: Great.

MR. HAYMANS: I told him this is one-stop shopping, especially when we see the electronic version of this. I will stop using FishBase and just use this as a reference.

MR. PUGLIESE: Especially when you get into the detailed -- I am not going to -- I keep on jumping further, but are there any other questions or comments specifically on this section? Okay. Then moving on. The other section that we had discussion at the last council meeting -- The primary habitat section discussion had to do with shallow coral habitat and shallow corals.

The draft was rewritten. Margaret Miller and Ken Lindeman, as the Co-Chairs, provided input on revising, and they addressed the comments provided by FWC and worked directly with FDEP personnel to address those specific -- They eliminated old text and added in new text and then also addressed some of the concerns about endorsing or including some of the information, and so, under this, again, this is -- Under Tab 8, A-5 Revised, this is the latest version, and that was also provided in the late documents.

Even after getting done with that, we went back through and found some outstanding ones that we had discussed that I wanted to make sure were eliminated, and Gregg had also gone through and provided some additional edits on these. Were there any other --

DR. DUVAL: Thanks, Roger. On PDF page 5, it's the paragraph right above place-based management, where it says "EFH applies to each life stage" and then et cetera, et cetera. The second sentence in there says the sixty reef species currently in the Snapper Grouper FMP, and I think it's fifty-five.

Then I think just the other things that I would draw attention to are just -- I think I just noted some acronym inconsistencies. Like there were some acronyms that weren't spelled out the first time that they were used, and I think consistent use of italicizing genus species names, just a few things like that, and I confess that I didn't have the opportunity to go all the way through this revised version, and so some of that may have been corrected already, but those are just a few things that stuck out.

MR. PUGLIESE: Some of the italicized things and different things like that, we were playing some games with the transfer from the Google Docs to the area, and that sometimes -- Again, it's got benefits, but I can tell you that sometimes, on some of the technical documents, that effort can be really a problem, with multiple versions floating around.

MS. MCCAWLEY: On page 2, there is a missing reference at the bottom of that page. It's Walker something. It's right above the Number 2. We have a number of comments on this document, and so, also, page 8, when it talks about the -- It's talking about the Coral Reef Task Force, and so the third paragraph talks about how this is coordinated by DEP and FWC. FWC does not coordinate the Coral Reef Task Force. It's just DEP, and so that paragraph --

On page 10, above the summary recommendations, there is a statement, in that last paragraph, about awareness and appreciation of reef resources in the northern portion of the reef tract is severely lacking, and I'm not sure how that information came from the U.S. Census Bureau, but I'm not sure that this is an accurate statement.

MR. PUGLIESE: The sentence above the summary recommendations on page 10?

MS. MCCAWLEY: Yes.

MR. PUGLIESE: That probably just needs to be deleted.

MS. MCCAWLEY: On page 11, the part that talks about lionfish, there is some bullets here that don't really fall under lionfish, towards the bottom of the page, to assess and monitor spatially and

temporal patterns in use of coral reef ecosystems, in terms of fishing, snorkeling, diving, and other uses, and those bullets are under lionfish.

MR. PUGLIESE: Yes. We need to check to see if there is a separate header. Yes, they don't fit, especially when you look at something on the dredging and beach projects.

MS. MCCAWLEY: On page 12, the next page, in talking about these summary recommendations, there still seems to be some problems with the Our Florida Reefs stuff. We can work with you on that, but it's linking some stuff in here, and we believe the wrong recommendations are in here. There is just some problems still on this page that we could talk to you about.

MR. PUGLIESE: Yes, that's fine, because I think they tried to eliminate as much as they can or modify as much as they can, based on what they got from some of the other coral staff they're working with, but they addressed what they could.

MS. MCCAWLEY: We can help you work on that. The Our Florida Reef stuff is confusing, and there is different sub-teams and different portions that are moving forward, and so it's very confusing, and so we can work with you on that. On page -- I'm not sure what page this is, but it's on 5. Summary Recommendations, and it looks like it's page 24. There are some issues with, it looks like, OFR recommendations there as well.

MR. PUGLIESE: Because I know that you had indicated that you did not support a number of those OFR recommendations, which I thought had been deleted from here, but --

MS. MCCAWLEY: Right, but there were some that were removed that we were okay with, and so --

MR. PUGLIESE: So it's the flip side of it. Okay. Because there was comments about --

MS. MCCAWLEY: That's it.

MR. PUGLIESE: Okay. Thank you. The next is based on the original final that was developed back in November. I will go directly to the area that we modified, and the wording needs to be adjusted. Let me just go from the beginning.

What I had to do with the terminology using state-designated nursery areas and the way it was modified was in response to the comments made at the last meeting, and this would be under PDF page 6 and an example of how the wording is used, where it says that the public and resource agencies request a complete list of state-designated areas which may function as nursery habitats, and Appendix A contains a complete list of state-designated areas which may function as nursery habitats of species managed by the South Atlantic Council. That is stated, I think, right in the beginning, on page 1. That needs to track that same wording.

This also needs to be stated as state-designated areas serving as nursery habitat, but what was changed also was -- It was under Shrimp, Snapper Grouper, and Coastal Migratory Pelagics, and so that wording tracks through those and in the appendix itself. Each one of the areas was also modified to track that.

Here, it states that state-designated areas which may function as nursery habitats managed by the South Atlantic Council. Here it is for North Carolina. For South Carolina, it's the same wording. For Florida, both the same wording is included, but also the specific designation terminology for aquatic preserves as well as outstanding Florida waters. Were there any comments specifically on that?

DR. DUVAL: Thank you for making those changes. I appreciate that -- I was wondering -- If you need the administrative code for the nursery area designations in North Carolina, I can send that to you, if it's needed.

MR. PUGLIESE: Yes, please.

DR. DUVAL: Okay. I can do that.

MS. MCCAWLEY: The Appendix 1, the one that you have on the board, the paragraph at the top about state-designated areas, Florida still needs some work, and so we can offer some edits on that paragraph.

MR. PUGLIESE: I tried to craft it the way you had stated it and capture the official terminology, but okay. This, in and of itself, the whole document, was an important thing to address a lot of outstanding issues that were under some of the EFH designations, what National Marine Fisheries Service really needed, and so we've been working together with them for a long time, and plus it's a one-stop shop for understanding all of the EFH and HAPC designations.

Those are all the sections that were provided for the meeting. The other thing that was included were a number of additional components to provide some context for the Fishery Ecosystem Plan II, to follow up on what we're discussing here, on other sections, and all the discussions that I had on the linkages, and so what I would like to do is touch on Tab A-9, which is the completion.

What this is, it's an expanded version of the box system that showed the different sub-components of the Fishery Ecosystem Plan, and so what it does is it lays out the ecosystem plan introduction and the section, and we have dates on completions of the drafts, or actually connections of the links. Some of those have changed.

There is already a component introduction that I will show in the demonstration system, but what it does is it lays out these individual sections, the sub-sections, and then different parts of those, and it lays out timing to complete and have those complete, and then the idea is that they be available for integration into that online system, so it gets into the ecosystem area, which will present primarily the food web and connectivity and the climate variability and connectivity.

One of the other sections here, and I will also touch on it here, will be that, ultimately, we'll have an ecosystem modeling component here, so that we can highlight what has been done in the South Atlantic and track where we're going with the newest generation, the collaboration.

The sections for habitat are identified, and the managed species, which highlights both our managed species and then linkages to other areas and the human environment component, which is identifying, again, linkages to existing detailed information and then the EFH section, the section on managed areas, and a section on research and monitoring, with timelines, and so I wanted to

touch on it, but what's going to probably be important is to see kind of some of this realized in the demonstration. With that, I think that's what the next step we'll do, is go directly to the vision of an interactive, online capability for an operational fishery ecosystem plan would be.

MR. HAYMANS: This is your opportunity to open the link that Mike sent around earlier.

MR. PUGLIESE: Again, this is not an actual webpage, but a design system with the web developer, and we put a disclaimer to make sure that everybody understands that this is a demonstration website. What we have is the frontend of the Fishery Ecosystem Plan, the home, which shows the table of contents, linking and support, and we'll jump directly to, and those are the eight sections identified, to the introduction.

What it does is it goes through and very specifically identifies, in a succinct manner, the development of the Fishery Ecosystem Plan, the habitat connection, and then the FEP development process that we were involved in. Under Ecosystem, we have both the access to the section, and what I did is integrated the actual sections we were reviewing, so that it was clear that we're still in process.

You also have access directly to the policy statements that would be approved, and the executive summary is a separate line item. Then, under here, ecosystem modeling, and so it's the same for those. Some of the background information following this has to do with the roadmap and EFH policies from National Marine Fisheries Service.

Under Habitats, it's a combination of a number of different things, from access directly to the sub-sections, so you could be able to go directly into the sub-sections, and what I will note here is they're different capabilities, because what is here is actually an operational system that has linkages and information to our partners, but it also provides editing capabilities in the system.

If we do find something immediately wrong, we can assign an administrator -- This is if we go down this road of creating something that ties into a system similar to Google Docs and operational capabilities. It could be updated in an advanced -- It could be on the fly, pretty much. Then you can have it where it is essentially just a canned PDF type of capability, and so you would jump and then be able to see those. The other thing is to, again, tracking some of these and getting the most recent information without reinventing the wheel. For example, on deepwater coral --

MR. HAYMANS: Can I ask you a quick question? This is just a technical question. Did you say the demonstration is user limited? There are some that are having trouble getting into it, and I'm just wondering if there is a maximum number of users at once.

MR. PUGLIESE: This is not a website, and this is a wiki, and so I don't know if that's going to be --

MR. HAYMANS: I understand, but it is a functioning website at the moment. I mean, we're doing to a dot-com right.

MR. PUGLIESE: But it's not a website. It's a wiki, and so it's not a real -- It doesn't have the horsepower of a website. I mean, most of this was really more for presentation on how it functions.

MR. HAYMANS: So it's possible that we're overloading it and that's why some can't get in?

MR. PUGLIESE: It's possible.

MR. HAYMANS: Okay.

MR. PUGLIESE: Mainly because it's not a website. This is really a demonstration of capability and what's built -- You build all this interactive capability in here, and then you have to code this into a real website to make it actually fully operational. Let me at least walk through and be able to show you -- That's probably why I am having lagging in here too, in terms of timing on it.

It has nothing to do with how this would ultimately operate. The idea here is to see what the vision of what something like this would be. As I started saying, under Habitat, some of the other activities is to be able to go to the most recent information. Say, for deepwater coral reef habitat, what made the most sense was to use the information directly in the most recently-approved Coral Amendment 8 for deepwater coral, and so it goes directly to that sub-section within the existing document and for reference of what that habitat is. The other aspect is being able to go to specific pages within our site, such as, if we want to address sargassum, we would just go to the actual sargassum page.

Under species, this is where we get into both the council-managed species as well as other species in the South Atlantic region. The area we looked at before, it could be represented as a PDF, or it could have sub-sections, to be able to jump to it with a table of contents, but it's still, again, more of a static system.

As an operational system, again, this one has the ability to go in full operational edit type of capability, if that's the type of system we design, but say, for example, you go to gag, and it would bring you directly to that individual summary. You have the image and the summary of the -- It's a nice, concise summary, but also, and this is where it becomes real interesting. Originally, I thought this was just going to be something where we would have a jump to a query of very detailed information, and so a PDF or whatever, but this actually jumps to our online species information system with a can query. It's querying everything on the species, the habitat, the fishery, the management and beyond. There's habitat by life stage information in a queried system that is online and living.

You can go back in, while you're looking at it, and then change around the type of capabilities that you want to do within it, and so you could actually go in and get different types of information, if that's the way you want it, and so it has the capability of going to very detailed information.

This is the system that it's drawing from, and you could go into any of those individual organisms. You go in and pick a species. Let's pick black sea bass, and say you want to just know about habitat and ecosystem information, and it queries just the EFH and information, ecological information and EFH by life stage, et cetera, and so this is getting to both habitat needs as well as our long-term ecosystem needs, but also it provides -- In our region, we have other species that are not under council management, and there is access directly to ASMFC's multiple species and all the ongoing activity for say Atlantic croaker.

Under National Marine Fisheries Service, there's highly-migratory pelagic and a direct connection to tunas or to protected resources, and so, in having those at your fingertips within the same query and within the same area, as you're walking through and trying to combine information, and so that provides access to virtually everything in the region, including marine mammals.

Instead of trying to go back and rewrite, like we did last time, and then have them essentially already expired or whatever -- Those can be adjusted. We could actually go directly to the descriptions or whatever, but that provides one aspect. Under the socioeconomic sections, as discussed before, the way to track this and make it usable and the most up-to-date is to go directly to the most recent amendment addressing that individual species on the economic and social characteristics.

For king mackerel, jumping directly to the amendment that provides the economic and social, and it goes directly into the document, to the location, and it provides that access, where you can just go through and see where that information is. There is also linkages back to some of the historic information, under some of the communities in FEP I, and so there's going to be some discussions about how much of that historic, under the original FEP I, gets populated or used.

Under the tab for Essential Fish Habitat, you have access to the user guide that we are -- It will be refined and updated, immediate sections, and you also have the direct access to the EFH online webpage, the Ecospecies database, because it has all those updated with species information by life stage, and the individual habitat plans for the council, with the coral plan and the sargassum plan. All of the policy statements that have been approved by the council, and so you can go directly into those statements and provide those.

Historic threats on species, on non-fishing activities, and, instead of doing as much to update those, there is an effort through the advisory panel, in cooperation with National Marine Fisheries, to build a larger threat matrix that's going to be integrated into here that aligns the information identified in our policy statements with the species and complexes. Then other information from our partners, with the Southeast Aquatic Habitat partnership and the habitat plan that originally was an appendix to the South Atlantic Council's original Fishery Ecosystem Plan.

That brings us to the Managed Areas. The Managed Areas section provides access to individual sections on our site that deal with the specific managed areas sections, such as the marine protected areas. It also will have links at the end that draw directly to the managed area coordinates, which are in the data catalog, and so you can pull off any of the different variations of how you would like to see say the coral HAPCs, in a zip file or whatever, but in combination with the existing systems.

It also provides access to the overall atlas and the dashboard as well as some of our partners' work, such as the South Atlantic Landscape Conservation Cooperative, where we're collaborating on this broader prioritization, which integrates a lot of our EFH information, but also that's the group that is a partner in funding our ecosystem modeling for the entire region.

Moving to the last section on here, it provides access to the council's research and monitoring prioritization plan, and so the updated version that we're going to be looking at and finalizing into 2022, I think it is, is going to be integrated and access to each of the system management plans

that have been developed and approved by the council. You will be able to just walk through and identify these, and there may be opportunities to link how these go into say the spatial information.

Historic deepwater research plan and the SEAMAP five-year plan, which I have provided and talked about how that was integral part of the system, and the important aspects, such as, if you would go to this plan, you could also look at some of the priorities within here. Say, for example, the last appendix in the plan lays out the council's priorities for mapping of managed areas and highlighting those and highlighting those connections to the developing fishery mapping strategy, which I have discussed, and we're beginning to create this as an online capability that shows habitat by depth contour and aligning it with managed areas and then aligning some of the activities under other areas that are collecting information that can populate and expand that capability.

This also brings us to the atlas, which provides the cross-section of all the different habitat and ecosystem spatial information systems, but then the final component is our ongoing activities and science and research that goes to the Citizen Science Blueprint and the Citizen Science Program.

Again, this is a demonstration. Most of the functionality -- I think the idea is that that was supposed to essentially lay out what is envisioned by the longer-term operational capability of the system. Are there questions or comments or thoughts about how to evolve this as we move down the road?

MR. HAYMANS: Between this and the dashboard, it's more exciting than sliced bread. It's a great tool.

DR. LANEY: Roger, when is this going to be up and live, and I guess there will be a link to it off the council website?

MR. PUGLIESE: Yes, and we have to have discussions about how to go, because this is a demonstration. This is really giving you a snapshot of a footprint of what it can be. The coding to create it and design it, whether it lives directly in the site or it be connected on the dashboard that we're already collaborating in FWRI, in combination with spatial systems, is what we have to decide and evolve, and so it's going to take some resources to take it to the next step, but the key with it is a lot of the structure of the linkage capabilities and different things is conceptually already laid out, and so it's just a matter of how do we -- What resources do we need to actually -- Also, remember some of the functionality that I showed about going in and being able to update it and all of that, and that also adjusts what the type of system is.

DR. DUVAL: Thanks, Roger, for the demonstration. I definitely like being able to have this linked to everything online and going to -- I think it's going to be a lot more user-friendly once it's final, and I think it's a little bit more manageable, or at least I hope it will be, than one gigantic PDF of everything, and so I certainly appreciate the way this is laid out. I think it's going to make it definitely more user-friendly and more useable.

MR. PUGLIESE: I think one of the keys is this hopefully is going to provide some ideas about how do you expand beyond even what we've snapshotted here, because some of the things that I had talked about is integrating the ecosystem modeling and integration of the implementation plan. Then we can crosswalk about who is doing what within here. As this evolves, those types of things can rapidly be added as sub-components and even advance this further, and they are also, if it's designed right, something that we can update and have it as a living system, versus the capability

of -- One of the aspects that we're going to have to ramp up further is under the Ecospecies detailed system.

For example, we're populating that with say the file from ACL with that descriptive component talking about those individual species and trying to keep those updated that way, and that may be live links to online systems. Spatial distributions of species is being designed, and so there's a lot of pieces that may fit into other places as part of the modeling process, and those could be useful presentations.

Catch associated with those types of species distribution versus the traditional grid system is something that we're trying to develop as part of the modeling efforts, and so apply polygonal distributions of a species versus the sixty-minute grid systems, to at least get you a better indication of where more likely, say, for example, tilefish distribution and catch is going to be associated with those core habitats versus everything from the shore to off fifty miles.

Some of those tools and capabilities that are being developed separately are going to expand what can be added to different parts of this, such as maybe the species. You have a species distribution map added to that little snapshot area, and those types of other things, I think, are going to be really useful.

DR. DUVAL: So then will there be -- You've got the different headers up here of Home, Introduction, Ecosystem, Habitat, Species, et cetera, and will there be a separate header that is specifically tools, ecosystem tools? I know that you have, under Managed Areas, there is the link to the atlas and other web-mapping applications, but it seems like you might want to pull stuff like that out, because it is a tool, and place it under its own heading.

You have the Managed Areas here that these are outlined. You get a page that -- This links back to the council's website, and it links back to information, but I think, in terms of tools to operationalize and implement ecosystem-based fishery management, it seems like you might just want to consider adding a header up there with regard to ecosystem tools.

MR. PUGLIESE: Yes, and potentially it could go beyond, because that could provide models and some of the things that may be developed as we move down the road with the ecosystem model activity, for evaluation tools and different types of things, and so I think that's exactly why we're discussing that. That's something we definitely can adjust and modify as this gets developed.

In the linkage on there, it actually goes -- Under the Managed Species, it goes to a spatial representation that is focused on managed areas, and so it has all the managed areas and then a lot of the information specific to it, and so that's one of the reasons for some of that partition between the different areas, but it doesn't preclude creating an entire separate tool section that has those also added.

DR. DUVAL: Then one final question. So there would also -- We haven't talked about this yet, but I assume we will get to it, in terms of the implementation plan. That would be accessible from the home page as well.

MR. PUGLIESE: Yes, and that was -- I was going to actually add it in as one of the things, and that was kind of a supposition. We need to discuss where we're going before that even got added,

because I thought implementation plan and ecosystem modeling in the region, and there are a number of those things that are critical components as we advance this. We can either have that as a sub-component or have it under the ecosystem section and then talk about implementation, and so yes. A long answer to a short question is, yes, that will be integrated directly into it.

MR. HAYMANS: Okay. Anything else? Then we'll move into Item 3. You have, in your documents for Item 3, two attachments, which were in the original mail-out, 6a and 6b.

MR. PUGLIESE: I just wanted to touch on -- These are actually -- I provided those as background, and I am not going to go too far into the description, but we have going here is two aspects of supporting information and activities with regard to the advancement. The most significant tool is going to be the development of the South Atlantic ecosystem model, and so the presentation was provided at the Habitat and Ecosystem Advisory Panel meeting.

This really provides what I was going to do, is to go really right to the core. It provides the foundation for an evolution of multiple South Atlantic components to a focus on the most recent model, which we are just coming off of the food web, the South Atlantic Ecosystem Modeling Workgroup meeting, and so the focus of the discussion was on this new articulated species grouping, which integrates core South Atlantic Council species, and even species by life stage, where possible, to set the stage to develop a model capability that's going to provide both the scope of what we know about the system and how they interact, but also then ultimately potentially some tools to be able to integrate directly into management.

The group met and went through and discussed this whole structure of what we had refined, the structure capability, and we had discussions on how we advance this, the input parameters to move it forward, and the bottom line is that the intent is to have a draft of this first iteration of the model advanced to our October Scientific and Statistical Committee, to begin the discussions about this is where the system is going and getting some early integration with the SSC in how do we advance this further, to be able to both be the best representation of the region and understand what the data limitations are, but also what are the types of tools and capabilities that are going to be needed and that the SSC can use to help inform the council and inform the activities.

Marcel is here, and Marcel was helping keep everything grounded in those discussions during that meeting, to make sure that that was the focus and it didn't go off into oblivion, but the key with that is we had the core presentation that provided what are going to be input parameters for the oceanographic modeling, with Ruoying He, as well as with Laurent from the Harbor Branch Oceanographic, some of the higher resolution modeling activities and linkages with estuarine systems with Peter Cheng, who is doing all the detailed species information system and modeling activities.

Then a new hire from the Landscape Conservation Cooperative, who is going to provide, again, some of that flow model capabilities within the system, but then representatives from -- We had both Tracey Smart and Wally Bubley as well as Marcel with SEAMAP and MARMAP and our SSC representation, to kind of see how all these different components of data will be integrated into this capability, to provide the input parameters that will advance it.

David Chagaris, who is doing some hands-on direct ecosystem modeling in the South Atlantic and in the Gulf of Mexico for red grouper and different species, is beginning to integrate and connect

environmental information, and so the idea of moving this entire system forward, and so I think the biggest take-away was to advance it, so that we can look at the broader system, but then also begin to provide it as a foundation for what types of questions can this begin to advance and understand and provide that kind of a springboard for the SSC meeting.

I think that is going to be a very critical next step on how we advance this. We had also one of the most -- We had Howard Townsend, who is the Ecosystem Coordinator for National Marine Fisheries Service, and he's now a member of the group, and Howard also was providing his guidance, because he worked so much on the Chesapeake Bay efforts and translation of the modeling into management and how this actually going to provide keeping focus, and I think the message and support from up through the top of National Marine Fisheries Service into what we're working on is really an important message, and I am looking forward to seeing this advance fairly rapidly.

One of the key aspects too though is this is a collaboration with the Landscape Conservation Cooperative, and so some of the work that's going to be done will provide some maybe indicators of different conditions in the region too, and so hopefully that's going to help provide that, plus the connectivity of the system, inshore and offshore, in our system, and, with the estuarine-dependent species, that's pretty critical.

Hopefully the good thing is that we have resources to get this first step, but then also to, as part of the first step, integrate things such as circulation models and testbed those on how you merge those, so that you can look at how a model may work with and without environmental drivers, which is going to be a critical thing to advance the entire effort.

We move forward with the next steps on ecosystem modeling, and with the most recent notification that Cisco Werner moved to the top, as Science Director, and a long-term connection with him, there's going to be -- With that vision and encouragement of being able to expand our observing capabilities and modeling capabilities and ecosystem activities, I think that's the message that I'm getting from that. Any questions or comments or thoughts?

We're going to work closer also with getting Todd closer involved, because he's been on the periphery of some of these, but I think with Todd Kellison at the Beaufort Lab to -- We need to make sure that we keep that, and Howard kept on advancing how do we go further with this, and I think we went from the core that was involved and funded through the last two, and now how do we go further into this process, and I think all these players are going to be key.

DR. DUVAL: I am not on the committee, but, Roger, kind of my bottom-line take-home is that this is going to move forward to the SSC for some level of review in October, this model.

MR. PUGLIESE: Yes, and so the idea is that we are going to have a presentation on the model and how it functions, what the system is, with the idea of having two different things, one that provides the model and provides a first generation of it, and it may be something as -- This was recommended by Howard, but as straightforward as putting all the input parameters at fishing all the species at MSY and letting the SSC watch the entire system explode, as food-for-thought about how do we advance this, but then also getting at that discussion about what are the other types of things that might inform individual stock assessments and that might be able to be pulled out of these types of things, inputs that go in that actually may be tuning for a single stock assessment,

or what are the types of questions that you may want to answer with regard to individual species on some things.

I think that's going to be something that we're going to craft with Marcel, et cetera, to make sure that we get both of those kinds of things advanced in way so that that discussion on broader system operations, as well as species-specific tools or capabilities, begin to get addressed in those examples, to be able to make that happen, and so, yes, that's advancing, and the intent is to take those next steps and get that early input, so that if we need to refine even the system layout or other inputs that need to be added, that's going to be a key time to do that, and then we can advance that even further as we proceed beyond that first step.

DR. LANEY: I am really excited about this part, especially in light of a conversation that I had yesterday with Ben about king mackerel recruitment and going for years with limited recruitment and then all of a sudden having three large year classes in a row, and then the same thing seems to have happened, to at least some extent, with red snapper, and we were talking at dinner last night about that species.

What I am wondering, Roger, is are we going to have enough capability in the model to be able to ask those sorts of what-if questions, such as what if we get, all of a sudden, a year class that is three or four times larger than average, and there was a comment last night to the effect that maybe one of red snapper's favorite food items is black sea bass, and so what happens if you have a huge oncoming year class of red snapper and they like to eat black sea bass? Then you've got that species interaction thing that you really would like to have some insight into maybe before it happens, and is this model going to give us the capability of exploring those sorts of questions?

MR. PUGLIESE: We had a lot of discussion about how far you would be able to go with these things, and I think that there was concern that -- What you don't want to say is this is automatically going to be something that you put it in and it's going to spit out an ACL. That, I don't think you're going to see, and Marcel is over there shaking his head. That's not what the intent of where we're going with the first iteration of this.

I think the what-if scenarios is exactly what Ecosim is supposed to do, and so I think, especially when you talk about magnitudes, and it's a good opportunity, because the last iteration was doing some what-if scenarios with forage fish as a foundation, and so it was reducing -- It was massive reductions, and so then you would see some types of changes, and I think that would also be the case with this, and we had, specifically, some of those black sea bass discussions, and that's the intent of this.

The good thing about this is that, from where we were before to where we are now, with everything that's been done with the MARMAP and SEAMAP and SEFIS programs with early life history and diet compositions in Florida also, and there is so much more information specific to our region that's going to help drive this. The assessments that have been accomplished since then, and the information that is available on many of our managed species, beyond at least what the last iteration -- I think, again, a long answer to your short question, that's the intent.

It's to begin to move us down the road to see what some of these -- Especially unanticipated prey/predator interactions, because I think those were some things that they were seeing when they were doing Gulf activities. The other thing, again, is that ability to have some of the participants

working on companion models, either for the Florida Keys or the Gulf of Mexico grouper, some of the work that was done doing the connectivity between Pulley Ridge on grouper movements and integration of that.

Dave Chagaris and other partners were working on that, and that can inform and expand how we proceed with our model, and so I think we have the right people at the table. I think one of the members that I wanted to -- I want to talk to Michelle about getting maybe a North Carolina representative on the workgroup, just to make sure that our data information inputs -- We got into some of that discussion when we got to talking about some of the bigger inshore information systems in the Pamlico Sound surveys and different things. While they're in the SEAMAP system, a representative directly with the state, to make sure that they're represented right in how this advances is going to be important, but just think of that and make sure that -- Yes, that's the intent.

MR. HAYMANS: Anything else on the tools and model development?

MR. PUGLIESE: That's it. All the other components were integrated into some of the tools and capabilities that were on that presentation.

MR. HAYMANS: So we'll move into Item 4. Wilson, before that.

DR. LANEY: There were a couple more things I think that we didn't get to in the AP report. We just need to wrap that up.

MR. PUGLIESE: Okay. One other point that was -- The only motion that was advanced in the AP meeting was with regard to an item that was brought up under Other Business with regard to the National Wetland Grants and the Waccamaw Partnership Project Proposal. There were a number of support letters that were provided in the package here, as well as a snapshot of the location of the area. This is Tab A1b, Coastal Wetland Grant Figure, and that's the Waccamaw Partnership Tract.

The North Carolina Wildlife Resources Commission, in partnership with the North Carolina Coastal Land Trust, was moving to purchase 3,000 acres on the Waccamaw River Partnership Tract, about 7.5 miles of the river in Columbus County, and the advisory panel recommended that the council send a letter of endorsement of the Waccamaw Partnership Project National Coastal Wetland Grant, and I will let Wilson add in any additional details on this.

DR. LANEY: Thank you, Roger. The only thing I will add is that the proposal, as presented to the advisory panel, has undergone some additional revision to highlight the benefits to fish of the proposal. Specifically, there are a number of species, and they're still refining the documentation for it, but it appears that at least both species of sturgeon reside, to some degree, or use, to some degree, the Waccamaw River system, and then other species of interest to the council that use it, either for spawning purposes or nursery area purposes, are at least three of the Alosinae species, American shad and blueback herring and hickory shad.

That information is going to be added to the proposal, which I think will increase the amount of information in there that is about fishery use of the system. We had some discussion about this yesterday, Doug and Roger and I, and we noted the fact that the council has, in the past, certainly weighed in and expressed its concerns with regard to potential impacts to habitat, and this is an

opportunity for us, if we choose to do so, to weigh in with an expression of support for a project that is certainly going to greatly benefit fish habitat in the Waccamaw River by providing a considerable amount of protection for a riparian system for seven-and-a-half miles of the river and 3,000 acres, which includes, I think, some upland, and we have always strived to make the point that, in order to protect these systems as fully as possible, we need to think about headwater streams and upland areas in addition to riparian habitat.

I know the whole Waccamaw drainage system, and I will look to Mel to add whatever he wants to, has been a conservation priority for both the States of North Carolina and South Carolina for quite some while, and there is a national wildlife refuge on the lower end, I think, as well that was established a number of years ago, and so the Fish and Wildlife Service certainly has an interest in seeing this project succeed. We hope that it will, and I would be happy to try and answer any questions.

MR. BELL: I will just kind of weigh in. You're looking at the map, and the map basically sort of stops at the North Carolina/South Carolina border, but the river does not. The river is very important to us, in terms of coming down and actually feeding our estuarine ecosystem through Winyah Bay and all.

Wilson mentioned sturgeon, and, yes, sturgeon, both species, are in that system, and actually are doing fairly well. Chris and I were just talking, and it's to the point where sturgeon are doing well enough that they jump out of water a lot, and sometimes they're a hazard for boaters, and that's a good thing.

Anyway, the system is important to us, and I spend a lot of time trying to discuss with decision makers in the state about the importance of what happens upstream, and I have a thing that I do where I ask people to connect the dots for me related to gag grouper and estuarine water quality and things, and, of course, the connection is that gag is a species that the juveniles recruit to our estuarine habitats on oyster reefs and grow up there, and then they eventually move back offshore.

Things that we do related to impacting our water quality and impacts, even upstream, can affect our estuarine habitats, and so, while you say we're the South Atlantic Council and we deal with federal waters primarily, yes, but there is a connection, and so I think it's a great project, and certainly, since it's upstream of us, and South Carolina being downstream, we definitely appreciate efforts like this to enhance the quality of what comes downstream, in terms of the flow and all, and so I would certainly support this myself.

DR. LANEY: To add on to what Mel just said about leaping sturgeon, our Waccamaw National Wildlife Refuge Manager, Craig Sasser, who some of you may know, told me a story about being out in his private boat and towing his wife and child on one of those big inner-tube things, I guess, behind the boat and having them request to cease that activity, because there were so many flying sturgeon that she was concerned about encountering one and being impacted. Everything that Mel said is true, definitely, about the downstream benefits of upstream conservation.

MR. HAYMANS: Mel, in light of your support, would you like to proffer a motion?

MR. BELL: Yes, sir. **I would move that the council send a letter of support for this project, as we've discussed.**

MR. HAYMANS: We have a second by Wilson. Roger is going to capture it. **The motion is to send a letter of support for the Waccamaw Project.** Motion by Mel, and seconded by Wilson. Is there any additional discussion? **Is there any objection? Seeing none, that motion carries.** We need to backtrack to the implementation plan, as soon as Roger is finished with this, before we get into sargassum.

MR. PUGLIESE: It's Tab A8 New FEP II Implementation Plan. What I am going to do is just highlight the aspects on this, and then we can get actually into the document itself, but what the plan does is it proposes to create a core team to advance the development of a Fishery Ecosystem Plan Implementation Plan.

This core team, as proposed, is what I have laid out on here, and it's composed of the Habitat Advisory Panel Chair and Sub-Panel Chairs and council members and the Ecosystem Committee representation and both the Co-Chairs of Food Webs and Climate as well as our SSC representation and Ecosystem Modeling Workgroup representative.

We've got Pat Geer, Anne Deaton, Pricilla Wendt, Amber Whittle, Ben Hartig, Mel, Bell, Wilson, Lora Clarke, Ruoying He, Tracey Smart, Dave Chagaris, Marcel Reichert, and myself to begin the process, and this is just a proposal, to advance forward. The idea is that the implementation plan general structure would have an introduction, the data available for ecosystem-based management in the South Atlantic area of jurisdiction, data and research needs, and then you would create a chapter that would provide the policy statement that's been approved by the council.

Then there would be action items, and some of those ones -- The most obvious ones to look at would be some of the sections for food web and connectivity and climate and how you would advance those and create tables and timing for implementation based on that, and these are supposed to be fairly succinct, short documents to advance this process and having, again, the table and timing for implementation.

The timing, in general, is to approve the approach and the core team at this meeting and to begin the preparation through August, and to have the draft for committee and council review at the September council meeting. The document gets revised and posted online for the Habitat and Ecosystem Advisory Panel meeting, which is going to occur in November. The review provided there is advanced to the council, with a draft for approval at the December council meeting. Then it would be posting, mid-December, to hopefully the operational webpage dashboard for the FEP at that point. In general, that's the proposal. What I will do is get to the actual document, and then we can look at what's there and any revisions.

That is what is being proposed. That is the first steps to advance forward on the discussions for implementation and how do we move into this, and I think it's going to take actually getting into the sections to be able to advance how we go forward. Are there any comments specifically on membership of the team or the --

MR. HAYMANS: Seeing no comments, is there a motion to accept this approach, both the core team and the timeline?

DR. DUVAL: I am not on your committee, and so I can't make a motion, but I did just have -- I guess I was hoping we could run through the rest of the document, like the proposed outline.

MR. PUGLIESE: Yes, that's fine.

DR. DUVAL: Okay.

MR. PUGLIESE: That's the team. The proposed timeline, this is just more details than what I had identified, in terms of interoperation between myself and Gregg and Brian, to keep everything on track and make sure this gets advanced for finalization by the end of the year, but then the outline, I think, is what we can get to and have discussions.

I think the approach was to identify that these are going to be fairly succinct presentations of these sections, and so the introduction would be the opening section for this, and then we would move forward with the data available for ecosystem-based management in the South Atlantic area of jurisdiction, which would highlight catch, area fished, ability to track fishermen, support stock assessment and ecosystem modeling, early life history, diet and gut analysis, and that's, to a degree, some of the membership we have, including Marcel and Tracey and others that can participate specifically in those data needs and data availability.

Then a section on how that would also support essential fish habitat and then linking oceanographic models. We have Ruoying He directly participating as the Co-Chair of the Climate Variability and Connectivity Section. That moves to the data and research needs, and what this provides then is the transition to the sub-sections and the idea that it would address the policy statement and then the actions items would be what would be the recommendations under those policies and how to best implement that policy statement and then create something that's a very direct tabling and timing, and, if possible, prioritization.

As I said, some of it, I think, is going to take looking at it, and where I mentioned -- For example, on climate, those summary recommendations, there is a lot of discussion on other points that can be added into here beyond what the summary is that's in the body of those documents. I think those are some opportunities to go back and tease that out and pull that into kind of the broader recommendations on how to advance it and then maybe some of the timing or the resources that could accomplish that. That is, at least conceptually, what this is -- It's moving it forward and trying to get off-center on how do we advance.

MS. MCCAWLEY: Who is going to be leading this effort? Is it the council staff leading the effort or who is it?

MR. PUGLIESE: Yes, I am going to be working with the groups, but then going back and forth with Gregg and Brian, in terms of review and how do we advance and getting iterations between all of us to advance this and make sure it's accomplishing what we need for each of the different benchmarks for review at the next council meeting and for review at the Habitat AP and then for completion at the December meeting.

We will be doing that, but then there are going to be individuals tasked with doing the summarizations, and then we can balance -- Maybe there is other things that we pull out of some

of the other sections that we realize that actually could advance that or other collaborations we know, and so that's what the intent is right now.

DR. DUVAL: It seems like the Habitat Committee Chair would be an integral component of that, in terms of direction as well. That might be one of my recommendations, to also make sure -- I know he's on the committee, but as like a -- As like the Chair of this implementation team, sort of, and I don't know. That is one of the things that I was thinking of, someone who can work in conjunction with you to make sure this gets finalized, but, again, I am not on your committee.

I guess I had a few more questions on the outline. In terms of the data available and the data and research needs, I kind of felt like that was something that could go at the end. Like that seems to be more of an appendix, to me, as opposed to how are we going to operationalize these different components of ecosystem-based management. I am just a little concerned that people might get stuck in what the data are not and then not get to the how are we actually going to make this move forward in this region, and so that's why I might suggest considering moving that to the backend of the implementation plan, or it would almost be an appendix.

I guess the other thing that I would encourage is I know there is sort of one to two or two to three pages here, and I would definitely try to keep it on the one or two side of pages, as opposed to three pages long. A lot of the policy statements that we have already are multiple pages long, and so I guess brevity is next to godliness.

MR. PUGLIESE: Yes, and I think one of the reasons the data discussion was upfront is because I think, in the case of some of the specifics, we don't have some key information that needs to be addressed. Now, that doesn't say that it still shouldn't be at kind of the needs side of this, and some of those points could be made very succinctly within the statement for that, for variability and having the climate susceptibility or climate vulnerability analysis accomplished in our region, individual species vulnerabilities.

That can be crafted within say that line item under climate or whatever, and so I think there is -- It was there because of that kind of -- In our region, there are some key ones, but it's still -- I understand it still makes sense that, if it's more of a needs, but we also want to say what those needs are and who could potentially accomplish some of those, and so that's kind of the crosswalk between it just being an appendix versus being a direction.

We need that vulnerability analysis done, or this needs to be accomplished, or these indicators need to be developed by National Marine Fisheries Service or those different things. Some of those things are parts of the implementation. They're going to facilitate the longer-term implementation, and so it's not just a list of things.

DR. DUVAL: Right, and I understand that it's not just a list, and I think as long as there is the flexibility, once we see a draft come in, to be able to move that piece around as needed, and I do think that it needs to be its own little stand-alone page or a couple of pages, because it is important, what do we have to be able to move this forward versus what we don't have. It just seemed like that might be more apparent having it at the end, after one goes through the different sections with the recommendations, because some of that might come out in those bulleted implementation points. I am just trying to say, if we have the -- I would like for us to have the flexibility to modify where that goes once we see a draft.

MR. PUGLIESE: Yes, and I think you have full -- The idea that it's already partitioned, we can -- Even in this iteration, we can move it to the end. Then, as this evolves, those are going to be -- Whoever is working on that is going to focus on those and then where they kind of lie, and there may be a desire to create somethings that connects these better or other sections.

You can adjust that as the next iteration. An actual iteration comes to the council in September. Even for this one, what we can do is move it to kind of the end of this, and then with the intent that it can be adjusted where -- I don't think it will affect the way the information is developed for those individual sections. Are there any other comments or recommendations on either the team membership or --

DR. DUVAL: Not from me. I like the approach. I like the team membership. I think I just want to make sure that -- I guess the plan would be to contact all of these folks by email after the council meeting is over, to let them know their role in this and ensure that everybody is engaged.

MR. PUGLIESE: That's exactly it. Once the decision to advance this, that's exactly what the intent is, and we can advance it. The comment about engaging Pat as the Chair or whatever, we can integrate that. I'm working with him directly, and I think this is his last hurrah on the AP, as he evolves out, and so the timing may be really good to make sure that the broader vision of the AP as well as how the staff interacts on this -- That's easy enough to do, I think. Plus it gives a focal point too, and so I can work with him to get messaging out and different things like that.

MR. BELL: Just kind of following up on what Michelle said, I think it's June, and September will be here soon, and so we need to get on it, and we need to very clear about tasking and what's expected of the participants and just move and stay on track, to Jessica's question of who is kind of driving the train and making sure that we're moving along. We just need to stay on track, and so it's an ambitious effort.

MR. HAYMANS: To that end, Mel, would you keep us on track with a motion, please?

MR. BELL: **I would move that we adopt the construct of the committee and the outline related to implementation of the plan.**

MR. HAYMANS: Does that capture it, Mel? Motion to adopt the implementation plan process for FEP II.

MR. BELL: **Including the committee makeup, I guess.**

MR. HAYMANS: Okay. **Adopt the FEP II implantation plan process and core team membership.** It's been seconded by Jessica. Is there any additional discussion? **Seeing none, is there any opposition to this motion? Seeing none, that motion carries.**

MR. PUGLIESE: That is everything on ecosystem.

MR. HAYMANS: Okay. Thank you. We will move to Agenda Item Number 4 and let Roger introduce Dr. Freestone.

MR. PUGLIESE: We have a presentation today by Dr. David Freestone, the Executive Secretary of the Sargasso Sea Commission. There is advancement on the international -- Building on the council's activity for the conservation for sargassum and the activities at ICCAT in identifying sargassum as essential habitat for HMS species. That has happened in the past, one of the first ever motions on habitat conservation.

Now there is international efforts to advance and protect areas in the Sargasso Sea, and, with that, Dr. Freestone provided the presentation at the advisory panel meeting, and this is a follow-up from that presentation on movement forward.

DR. FREESTONE: Thank you very much indeed. It's nice to come to the South Atlantic. As you can gather from my accent, I was expecting the weather to be cooler. Actually, I live in Washington, D.C., despite my accent, and it's actually cooler in Florida today, and so it's a double pleasure. It's a great privilege to come and talk to your committee of the council, and, again, thanks to Roger and his team for facilitating that.

What I want to do today is to talk about the work of the Sargasso Sea Commission, the project which we have been working on for now six years, which is led by the Government of Bermuda, to talk about the commission itself, a little bit about it, and, as a background, to give you some sort of texture for this, and then the work program, which is basically to put appropriate conservation measures in place for the Sargasso Sea using existing international organizations, and then I also wanted to pay tribute to the pioneering work of this council in relation to the conservation of sargassum, and I have a couple of requests at the end.

I don't think that, at a meeting of this kind, that I actually have to tell you where the Sargasso Sea is, but our office is based in the International Unit for the Conservation of Nature, and the Director General did take me aside six years ago and said, David, where is the Sargasso Sea, and it's not as easy of a question to answer, because the sargassum moves around so much, but we have identified this area as being the core area, which is in the Western Basin of the Atlantic, to the west of Mid-Atlantic Ridge, around the island of Bermuda.

We started in 2010, as I said, and led by the Government of Bermuda to achieve international recognition of the global importance of the Sargasso Sea as an iconic high-seas system. The U.N. is actually in the process of developing an international, legally-binding instrument under the Law of the Sea Convention to deal with the conservation and sustainable use of biodiversity in areas beyond national jurisdictional. It's been talking about this for twelve years now.

This project was one of the ways in which we were seeking to see how you could use the existing system to protect an area, a high-seas area, beyond national jurisdiction, as they are calling it, using the existing system, and we found, and I will say a little bit as we go through, but we found the existing system has a lot of holes in it, and I think probably most of you would agree with that.

There are exceptional organizations in place, but they have limited competence, and they don't talk to each other, and so our project has been actually held up within the U.N. General Assembly as being an example of how we need to have a new system, but we actually are not doing this for symbolic reasons. We actually want to get something done, and so we've had some successes, and so that's why I say this is an indication of what's possible under the existing system.

Again, for a council that has actually already flagged the importance of sargassum about fifteen years ago, I don't really need to tell you this, but it's some nice pictures, and so I thought you would like to see these. This was actually taken by Sylvia Earle and this is a fairly big mat. There aren't so many big mats as there used to be.

In the famous discovery of the Sargasso Sea by Columbus in his first voyage in 1492, he actually talks about mats across the horizon, and certainly you don't see mats of this size, but there are still big mats, and mostly windrows as well, within the Sargasso Sea, but it does move around.

It's important to the life history of a lot of species, and I will show you some of them. There a lot of endemics. This one on the top left is the Sargasso fish. He's a voracious predator. Luckily, it's only about six or seven centimeters long, but they are very difficult to photograph. You can't keep them in a tank, because they eat each other, and these are very -- These are the endemic species, and a lot of iconic species.

This slide, which I used to say endangered and iconic species, and obviously sea turtles are included there, but I gave this presentation in Norway, and I was attacked for including pictures of whales and endangered species. I have to be a bit careful of this, but we certainly all agree they're iconic, and, of course, bluefin. Then, of course, the importance as a feeding area of about eighty species, and so this is something we should be familiar with already.

Then the other importance of the Sargasso Sea, and nobody has mentioned eels in the discussion this morning, and I apologize that this slide is actually about the European eel, but it's also true of the American eel. This species actually breeds in -- The only place that it breeds. The *Anguilla anguilla*, the European eel, and *Anguilla rostrata*, the American eel, only breed in the Sargasso Sea. Rostrata is to an area slightly west or southwest of this area, which is highlighted.

It's never been witnessed. It's an amazing wonder of nature, I think, that these guys swim 2,000 or 3,000 miles from the place where they spend their lives to spawn in the Sargasso Sea and then die. It's never been seen. We don't even know how it happens. All we know is that we find the small leptocephali, and so they retrofit where this area takes place, and so this is an area just, as I said, about 300 miles south of Bermuda, and we don't even know why they do it. The theories include even continental drift, but it's really, really an unknown.

The European eel is critically endangered, and the American eel is endangered. There's been a lot of interest in Maine. There have been some prosecutions in Maine, and I think Maine and South Carolina are the only two states that actually allow harvesting of elvers, but, once the European Union stopped the export of elvers from the European Union states, it's been pushed right out to other places. Now the U.S. has got it seriously under control, and I think Canada has as well, and it's now been pushed into the Caribbean, and so eels are a real issue, I think, and we're trying to make some progress on that, and I will come back to that.

These are the normal big high-seas areas, and so these are threats, which you would expect. There is garbage, because it's a gyre, because the sargassum is held in place by the subtropical gyre. There is garbage, plastics, and there is pollution from -- Oil pollution has gone down a lot since the actions by IMO, but there still are other forms of vessel sources, and fishing is an issue, but it's not really a direct threat, but there are some problems with discarded gear.

Sargassum harvesting is really only theoretical at the moment, and this is one of the things that I want to come back to, but certainly introduction of exotic species through discharges of ballast water, and then we've got climate change and acidification, et cetera, and maybe deep-sea mining, because this is an area which is covered by the seabed. We have some good contacts with the underwater cable people.

It started in 2010, this project, but, in 2014, we actually had a meeting in Bermuda with about eleven governments that came, and a number of international organizations, to put together a declaration. It took a couple of years to negotiate it, but a declaration on collaboration for the conservation of the Sargasso Sea.

Five governments signed, and we actually had about sixteen governments interested, and they're still mostly interested. The European Union began to get some concerns about whether we were trying to take over some of their areas of influence, and so the European Union states were told that they couldn't sign, which is interesting.

The only one that did sign was the U.K., for reasons why now becomes obvious, right? It's less concerned about complying with what the European Union does, but we did actually have signatures by the Azores, which an autonomous area of Portugal, and so the Portuguese government didn't sign, but the Azores signed, and Bermuda, obviously, and Monaco, which has been one of the great champions of ocean conservation, the U.K., and the United States. They all signed. A number of others, like the Netherlands, Sweden, South Africa, and the Turks and Caicos, came, and the Dominican Republic and other governments, who expressed interest and support.

Since then, we've actually had other signatures, and so we've had the Bahamas, which was last year, and the British Virgin Islands and Canada, at the end of last year, which is a major success, I think, and so we've got the U.S., the U.K., and Canada aboard, and the Cayman Islands signed earlier this year as well.

Where it's a fairly lean-and-mean operation, and you're looking at 50 percent of the secretariats. I think I'm probably the lean one. No, I'm not. I'm the mean one, and we have a meeting of the signatories, and so the governments come together about -- We've been able to manage once a year. Then the Sargasso Sea Commission is actually volunteers, and they're appointed. They're not representatives of the signatories, but they are from -- They serve in their personal capacity, and they are experts, established experts, in the field. They are appointed by the Government of Bermuda, after consultation with the other signatories.

That is the commission, and I am delighted that we actually got Dr. Billy Causey, who is one of our commissioners, to actually come, and he's sitting in the audience. The others are Professor Stephen de Mora, who is head of the Plymouth Marine Lab, who is actually Canadian, and so we have a nice mix there, and Mark Spaulding is head of the Ocean Foundation. The Chair is Professor Howard Roe, who is the former head of the National Oceanographic Center in Southampton, in the U.K., and so a very prominent oceanographer, ocean scientist. Professor Ricardo Santos is a benthic biologist from the Azores, and Dr. Tammy Trott from Bermuda is a senior resource manager there. Those are our volunteers.

These are the areas in which we -- We meet mostly virtually, by teleconference, et cetera, and we've had about one or two meetings a year. We want to promote the recognition of the

international importance of the Sargasso Sea, and we want to do it largely through the U.N. as well. We are looking at fisheries and fisheries habitat conservation, which is particularly appropriate, I hope, for this meeting.

We're looking at impacts from international shipping, impacts to the seafloor and to the seabed, issues like mining and cables, and then the conservation of migratory species. Then we're also trying to provide some sort of defining role with data and information management, and we're a fairly, as I said, a fairly small organization. There are only two of us in the secretariat, with limited resources, but we've had tremendous collaboration from our signatory governments, and, on that item particular, NASA has been one of our big partners.

We started off a basic baseline science report, which was done in 2011, and there were seventy-four collaborators. There were authors from over ten countries and eleven science institutions, which are actually listed there are the bottom. The Bermuda Institute of Ocean Sciences, but also Woods Hole Oceanographic Institution and the Plymouth Marine Lab and the University of British Columbia and the University of York. There is a large number, a big spread, of really leading organizations.

That went through the U.K. government. It was approved by the U.K. government and the Bermuda government, and it was actually shortly after the Chagos Reserve was declared that the U.K. government wanted to make sure that -- If it was going to support us, that we would actually get the science correctly sort of organized, and the Bermuda Cabinet actually reviewed it, and so this on our website.

Our first success was actually the designation, the description of this area, as an ecologically and biologically significant areas by the parties to the Convention on Biological Diversity. This is a science process, which is a global one, which was agreed by the convention. They have held, I think, now twelve workshops throughout the world, with another four or five actually planned, where they actually were seeking to designate -- I shouldn't use the word "designate". It's very important to use the word "describe", and so it doesn't have any legal significance, but it's a science process, which is intended to show, to demonstrate, and to map those areas which scientists regard as being particularly important.

This was really helpful to us, because the Sargasso Sea was the biggest area that they had. In 2012, when this was agreed, this was the biggest area in the high seas, two-million square miles, that area that we designated there, and so this was a big achievement. The idea really was that these descriptions could be taken to other functional bodies, sectoral bodies, and then those sectoral bodies would take protective measures, appropriate protective measures. It hasn't been very successful. We've been one of the first to actually push this forward, with our signatory governments, but it hasn't been quite as successful as it was intended to be, but, anyway, as far as we're concerned, it's two-million square miles of this Western Basin in the North Atlantic.

With the support of the governments that are signatory, we have actually put a proposal forward to the U.N. General Assembly, which every year has a resolution on oceans and law of the sea, and so we have now done that for five years. The first one we put forward, in 2012, was put forward by the U.S., with the support of the U.K. and Monaco. Then, since then, we've gathered the support of others, the other signatories, particularly the Bahamas and South Africa.

When we set up, we called ourselves the Alliance, and the General Assembly notes the efforts of the Sargasso Sea Alliance, led by the Government of Bermuda, to raise awareness of the ecological significance of the Sargasso Sea. This has become a little bit outdated, but, in the U.N., if you have a resolution of this kind, you need unanimity to change it, and also you need unanimity, or consensus, and perhaps I should say it slightly different, consensus to change the wording, and we've run into some opposition, some unlikely opposition, from the Government of Argentina. This may have something to do with my accent, and I don't know, but I will leave that one alone.

It's mostly because the Argentinian government feels that this should be done not at a regional level, but protection of high seas should be done at a global level only, and so we've run into opposition, and so this is slightly outdated, and we've been trying, with the support of the other governments, to get this wording changed, but it's kind of an interesting geopolitical issue which has got nothing to do with the importance of the Sargasso Sea.

Then, last year, the U.N. produced the first World Ocean Assessment. It's the *Global Reporting and Assessment of the State of the Marine Environment*, and this is the first one, and we were the only named ecosystem, and so there were chapters on coral reefs and on seagrass beds and sea mats, et cetera, and we were the only one that actually -- Chapter 50 was actually on the Sargasso Sea, because it is a unique system.

A little bit about the work within the international organizations, and the most successful so far has been with NAFO. This is the outside of the EBSA, the ecologically and biologically significant area, which was described by the science process, and this is the Bermuda EEZ, and it was really interesting. It was only when I was in touch with the Executive Secretary of NAFO that they realized that Bermuda should actually be a party to NAFO, and they invited them. They hadn't actually ever invited them to be a party. They have already put some protection measures in place for these seamounts, and, as a result of proposals by the U.S., which we were able to facilitate, supported by the E.U., there was a two or three-year process to look at the protection of those seamounts.

Last year, they did actually put in place complete protection for a series of seamounts here in this area just to the south of their regulatory area, and they have also banned the use of gear for mid-water trawling if that gear would bump into the bottom, and so the use of trawlers and runners, et cetera, that might damage the bottom systems. It's a small success, but that's actually the first legal measure that we have which is as a result of our activities.

Much more difficult is the organization which you are probably more familiar with, which WWF calls the international conspiracy to catch all tunas. Having worked with them now for some time, I have some sympathy with that. ICCAT is -- We commissioned a study by the University of British Columbia Fisheries Center, and this little icon, this little diagram here on the right, looks like a fish, and so the fish's eye is actually the Bermuda EEZ, where there is no commercial fishing. This, I think, is probably the U.S., maybe your swordfish fleet, which red is high density.

There is not much fishing in the eastern areas and some little bits around the edges of the eye, which might be IUU. This is ICCAT data, ICCAT reporting, and so it's not terribly high-density fishing in that area. In fact, we did a study, which I will show you in a minute, which suggested that, over the last twenty years, it's about 1 percent of the whole ICCAT area fishery takes place within those eleven blocks on the left-hand side. Those are the only areas which we are concerned

with, the ones that don't impact any of the EEZs. I will come back in a little bit more detail when I talk about ICCAT.

We also talked to the IMO about possible measures, and this is a study that we commissioned using reporting data. You will see that there is a very heavy -- This is only one month, and that very heavy line actually goes right through the middle of the spawning area that I showed you for the European eels, and so there are possibly impacts from shipping. We've been looking at the ways in which we could discuss this with IMO. IMO is a fairly difficult organization to work with as well, and those are the possibilities, special areas, maybe routing measures, reporting, et cetera.

We have had more success on cables. The submarine cable industry had a -- We had a workshop in 2014, and there are eighteen systems that go through the Sargasso Sea. I don't know if anybody has actually seen a submarine cable. I remember my first meeting with the secretary of the committee, and he said, well, how big do you think these are, and I said, well, like this? Then he got one out of his pocket, and they're actually about the size of his pen. They're very small, and so there is a very, very small metal core and then basically plastic rubber on the outside, and so they're basically just about the thickness of a fountain pen, and so they lay them on the bottom.

We were convinced that probably the laying of them doesn't have much of an impact. There are obviously impacts if they move and if they need to be repaired, and so we have a very good relationship with them, and they wanted to use -- They approached us, because they wanted to use the Sargasso Sea as an example of how they're collaborating with organizations which are concerned with the conservation of the seabed. We also have observer status at the Seabed Authority. Last year, we signed an MOU with them, and so in 2015, and we've been attending for two years.

Then the eels. The international organization which has responsible for migratory species is the CMS, the Convention of Migratory Species, and this is the way in which we had envisioned our system working. After we signed the Hamilton Declaration, we commissioned a study by an *Anguilla* eel expert to make a case for the listing of *Anguilla anguilla*, the European eel, only at this point, under Appendix II of the Convention on Migratory Species.

Now, Appendix II species are those whose conservation status would benefit from international collaboration. It's also Appendix II under CITES, and I then took this report to find a sponsor, and Monaco stepped forward, and so Monaco actually put it forward for listing. It went through the Science Committee, and then it was approved in 2014.

Since then, we've had two meetings. We've a meeting on American eels, to see if there was any support for doing the same with American eels, which we held in Maine. There was not so much -- There is probably not the need for it to be done at this point with the American eel, although, with pressures in the Caribbean, et cetera, and elsewhere, that might become an issue.

We had a follow-up meeting in Gallaway, in Ireland, last year, last autumn, as to whether we should have a treaty, or an MOU, under the conventional migratory species, which would do a number of things. It would actually coordinate the ways in which the European eel is managed within not just the E.U., because the E.U. has quite a sophisticated system of management, but the non-E.U. European states and also the North African states, which are part of the range, and

whether we could use that treaty to actually protect the migration areas and the spawning areas, and so the CMS are quite excited about this.

They don't actually have an instrument under their convention which would have a spatial protection measure, and so that's going to go forward. It's going to go back to the COP. They have their next conference of the parties this November in Manilla, and that proposal is going to go forward to give us a mandate to go forward with that, and so that's actually been quite successful. That's a picture of our first meeting in Gallaway. It is an amazing species. It's difficult to call them iconic, but the system itself is iconic, I think. They are a real wonder of nature.

Then I mentioned NASA already. As a result of the U.S. signing, we have a fantastic collaboration with NASA. They started off as like a boutique project, where they were going to see if they could put together a couple of years of data from their satellite observations and put it in what I call a portal. They don't like it being called a portal, for reasons that I'm not quite sure, but it means it's a televised, television sort of view of it. It's things like currents and eddies and temperature and salinity. Salinity from space is unbelievable, right, but that's really interesting.

All this data which they have, which they don't really use a lot, they were prepared to put forward as a historical -- As sort of like a little boutique project for us, and it attracted so much attention that they have now actually taken it to the CEOS, which is the Committee on Earth Observation Satellites, and it was approved in Paris in April, and so this is now an international collaborative project, and it's called COVERAGE, and this is a NASA acronym. You need a PhD in astrophysics to understand why it's called COVERAGE, but it's a nice word. It's a very clever acronym.

Now this is going to be real time. The idea is that, having got all their data, and hopefully the data from the other space agencies, we'll be able to overlay it with data which we get from biologists and from the fishing industry and from the vessel movements, so that we can actually use this as a -- It would be real time.

The guy that is running this project from NASA said to me that this not Hollywood. We're not going to be zooming in and looking at the registration numbers of the vessels that we're looking at, but this is more of a monitoring and kind of a management tool than a surveillance tool, but it's very important, and it's been a tremendous commitment by the Jet Propulsion Lab in Pasadena and NASA, and so we're hoping that we can get a lot of scientific collaboration from existing oceanographic sensors, so that we can actually put a lot of data in, and we've had already good collaboration already.

Then we've been talking about the importance of the Sargasso Sea, and then the sargassum kind of let us down a bit, and these are the strandings, which started in about 2011. Then in 2011, 2012, 2013, and 2014, there were a lot of big strandings in the Caribbean and also on the west coast of Africa. This is from a PDF, and it isn't very clear, but there's a guy standing in one of these. These are over six feet tall, and sargassum in the ocean is fantastic, but, when it's washed up, it does become a bit of a problem, and particularly in the areas in the Caribbean countries, which depend on tourism.

There was a lot of concern about it, and so people then -- If you google "sargassum", you will probably eventually find me, and so I got a lot of calls. People seem to hold me responsible for

this, and they said, can't you keep it under control? I am just the secretary of the commission, remember?

We became involved in this, to some extent, because it's not really our key mission, but it's important, and so we actually have quite a good website, where we've started to collaborate with a number of scientific bodies in south Florida, the University of South Florida and Dr. Chuanmin Hu, and also Professor Franks in the Gulf, and so some of the people who are already active in this, and so we've managed to link this into the NASA project.

NASA gave Chuanmin Hu a grant so that he could actually try and use his -- The NASA satellites don't seem to pick up the mats, but the NOAA satellite actually seems to be able to pick up the mats rather better than the NASA satellites, and so they're overlaying data and actually tracking them, and so they've given him a grant to groundtruth some of this, and so we actually have a -- This is a collaboration with the SeaKeepers, and these are interested conservation ship owners and boat owners who actually report sightings of sargassum.

As I said, we've got some lessons, and the lessons that we've learned have actually been well received by the U.N. BBNJ stands for -- I gave my first lecture on BBNJ to my American students, and there was some laughter, and they said, so what does BBNJ stand for, and I am saying biodiversity beyond national jurisdiction, and they said, well, we were brought up on peanut butter and jelly, and so PB&J, and so, anyway, BBNJ is biodiversity beyond national jurisdiction, and this is now progressing. The last preparatory meeting will be in July.

Again, a tribute to the pioneering work done by this council. You know this, but it was useful for me to put this together and show how it fits in, I hope, with what we've been doing. There was this revised management plan for pelagic sargassum habitat from 2002, and then your important decision to declare sargassum as essential fish habitat under the Magnuson-Stevens Act. These are the important measures, and I have just taken out the ones which I am going to flag.

The first one, which I think is really good, and I would like to come back to this, is, because of the importance of the extra-jurisdictional pelagic sargassum occurring in the Sargasso Sea outside of the EEZ, the United States should pursue other options under the Magnuson-Stevens Act and other rules to protect sargassum in international waters. I would love for some discussion about that, because this is what we're trying to do, and so ways in which you could assist us with that would be tremendous, some thoughts on that.

Then, because of the same pelagic sargassum occurring in state waters, the council recommends that harvest and possession be prohibited, an action they said is necessary to protect the essential fish habitat to achieve the objectives, and then, as you know, under the plan, it's limited to 5,000 pounds net weight and official observers, et cetera, and with restrictions on the way in which it should be collected.

As a result of this, back to ICCAT, the U.S. I know, directly as a result of that decision by this council, put forward a proposal at ICCAT requesting the contracting parties to provide to the Standing Committee on Research and Statistics, and that's their science body, the SCRS, information and data on activities that impact pelagic sargassum in the convention area on the high seas, directly or indirectly, with particular emphasis on the Sargasso Sea, and so that was the follow up the decision that had been taken in 2002.

Unfortunately, it wasn't a great resounding reply to this, and, in 2006, the SCRS Sub-Committee on Ecosystems noted that there was no information and recommended that scientists from the contracting parties provide information to the sub-committee to give a response to the full commission, and nothing seems to have happened, unfortunately, after that.

In 2011, when we made our first appearance at ICCAT, and we do this as the Government of Bermuda. The Government of Bermuda is an overseas territory of the U.K. and, so as an overseas territory of the U.K., it actually has a voice. Interestingly, the U.K. itself doesn't have a voice at ICCAT, because it's a member of the E.U.

We asked for -- At that point, we made the introduction, in 2011, and then, in November, at the second meeting that we attended -- In 2012, at the second meeting that we attended, we actually made a proposal, a recommendation, that the SCRS examine the data compiled on the Sargasso Sea, to highlight that fact that the secretaries hadn't done very much, and the impacts of fishing activity on tuna and tuna-like species and on the area's ecosystems and that it consider the viability of establishing special conservation and management measures within the Sargasso Sea. That was building exactly on what had been put forward by your council in the proposals earlier.

Then we began to run into the big geopolitical problems, and so one of the big players in ICCAT was actually chairing the committee at that point, and that is Japan, which seems to have some philosophical objections to conservation measures, area-based conservation measures, and we've been having some problems with them ever since, and so that proposal we put down actually turned out like this, and so it was much muted, as a result of the Chair's intervention.

It was to examine the available data and information concerning the Sargasso Sea and its ecological importance to tuna and tuna-like species and ecologically-associated species, and so, in other words, back to the proposal that you had put in 2005, really. We didn't really get very much further. Report back in 2015, and so we produced six major reports for the Ecosystem Committee.

The Ecosystem Committee, which was chaired at that point by the U.S. and by Canada, took the view that this might be an ideal project location for a pilot on ecosystem-based fisheries management for ICCAT, which they have never actually done. That's with the mandate of the committee, but that was the Ecosystem Committee. When it went back to the full committee, they encountered some opposition, and, basically, there seems to have been some -- The Japanese seem to have taken exception to using the Sargasso Sea as too good of an example of a place where you might want to put conservation measures in.

What they have done is to propose and insist on making it cover all areas where they are particular important areas, and so we've been left with this ecosystems that are important and unique for ICCAT species. If you look at the resolution, the full text of the resolution, which has a preamble, you will see it's our preamble, because it talks about the Sargasso Sea, but the actual resolution says: As part of advancing the work of ecosystem-based fisheries management, the SCRS will examine the available information on the trophic ecology of pelagic ecosystems that are important and unique for ICCAT species in the convention area. That's going back to 2005, again, and so we're kind of banging -- We're going to keep engaged with this, but we're having some problems with this, as the politics of ICCAT.

I was delighted in giving this presentation to the advisory panel, and this is a suggestion that I made to them, and I will repeat it. The commission would really appreciate if this council could actually change the total allowable catch from 5,000 pounds, which it's been like for fifteen years, to zero. Why?

There isn't really any effective difference between zero and 5,000 pounds. 5,000 pounds doesn't make it an economic activity, but the symbolic significance of making it zero, I think, is really quite major, because then we could go back to the other countries, particularly those involved at ICCAT, and say, look, the United States, the fisheries management, the fisheries body, which is responsible for overseeing the South Atlantic area, which is really the only area which we're talking about where sargassum is an important consideration, has actually decided that it's so important that harvesting of it should be banned completely.

I think that would help us. That would be a great help to us with negotiating with other international partners, but it would also address the point that, on the high seas, there is no protection for this at all. One of the things that I was -- I was talking to Bonnie Ponwith earlier, and one of the issues that we were concerned about with the Caribbean, where huge amounts have been washed up, is taking it off the beach and using it for fertilizer and biofuels is fantastic, but, if people start investing in infrastructure to clear it up and to catch it at sea, then, in the years when it isn't coming ashore, then there's a worry that it becomes an economic activity and you need to keep the machinery running.

Certainly having discussed this with our commission, this is something that we would be delighted if you would consider, and then the second part of this slide is just the importance of the extra-jurisdictional pelagic sargassum, the point that we had made earlier, that, because it's a system which extends right beyond areas beyond natural jurisdiction, an important statement by one of the signatories, the representatives of one of the signatories of our Hamilton Declaration, would be a really significant step for us. Thank you very much indeed for your attention, and I'm happy to answer any questions.

MR. HAYMANS: We will start with questions.

MR. BREWER: My last year at ICCAT was 2014, and Ken and I worked very hard on the resolution that did come out.

DR. FREESTONE: Thank you.

MR. BREWER: I am sorry to see the report of what has transpired since, which is very typical of ICCAT. I would be very much in favor of the symbolism of changing the harvest to zero. I think the only person that ever had a permit to harvest sargassum never did it, and I think the guy is dead now, and so it would be pretty symbolic, but I would be very much in favor of doing it.

If you really want to get something done with ICCAT, you're going to have to get the Japanese, because that is who is blocking you, and who will continue to block you. Even though they are not actively harvesting, I think they want to keep that option open, and that is why you're seeing the blowback, and it's hard to influence the Japanese.

DR. FREESTONE: Absolutely. Thank you for your support.

MS. BECKWITH: First, thank you for the presentation. It reminds us that, as complicated as we think our little world here is, the international component is much more difficult. One of the species that this council is particularly interested in is dolphin, and, of course, ICCAT doesn't collect any information on catch for dolphin, but we had a recent presentation at the advisory panel, where Dr. Don Hammond actually discussed the migration patterns of dolphin around the Sargasso Sea, and one of the concerns that was presented was that international fishing might actually be impacting those dolphin numbers.

Can you give us a sense of if there is any -- Amongst all the data components that you have interacted with, are there any places that we might look for information on sort of the international catch of dolphin or any information that you could sort of point us to?

DR. FREESTONE: I can consult with my -- I don't go to the ICCAT meetings myself. My colleague from Bermuda does, and we have a consultant who is the previous resource manager there, and the main bycatch issue that ICCAT has been concerned with has been seabirds and turtles. There hasn't been really anything on dolphins at all that I recall seeing, but that is really helpful thoughts.

MS. BECKWITH: Just to clarify, I am talking about mahi-mahi dolphin and not flipper dolphin.

DR. FREESTONE: All right. I spend a lot of time in the Caribbean, and I have stopped calling it dolphin, because of the people -- I love it. We have got some data on that. They haven't really -- ICCAT hasn't really looked at things like dolphin and wahoo, for example, which are really important, and the Caribbean countries kind of take that. That's why they're so enthusiastic about the sargassum coming in when it's in smaller quantities, because it does bring those in.

One of the reports, which I have there, is a food web report, which I can make available to Roger and to you directly, which does look at some of the relationships, but it's very poor data on catch of these associated species. They are tuna-like species, but they haven't really done anything on these minor species at all.

MR. HEMILRIGHT: Thank you, and thank you for your presentation. This council, back in 2002, was very extensive in its -- Probably it was a couple of years of process of coming up with limiting the catch or the harvest of sargassum weed, and they put a number of things in place. The U.S. part of that is allowing a chance, if need be, to harvest it with restrictions.

What I am hearing you today -- I kind of use the analogy of shark fins. Here in the U.S., we have a sustainable practice of harvesting sharks, but yet we have -- We want to limit -- The NGO community wants to stop the use of a sustainable practice of harvesting and use of the shark fin so that we can get other countries to do the same, and so, by not harvesting sargassum, if possible, and having a management plan that's in place, we're just saying, hey, let's not harvest any here so we can get the other countries to do the same.

It's kind of like a -- We have done management, sustainable practices, and we shouldn't be penalizing the U.S. for what it has done and implemented to get other countries to do the same thing, because I think that limits the management process, and it also limits the citizens of the United States, and it's kind of almost the same. People are not harvesting it here in the U.S. If

they are, there is ways to go about doing it that this council decides, and so how does that -- Is it basically asking us to do zero just to help the rest of the countries or a negotiating piece to do the same?

DR. FREESTONE: We are not an NGO. We have got nine governments. We're not actually an international organization, because we haven't gotten a treaty base, but we're based in the IUCN, which is the International Union for the Conservation of Nature, which is an international organization, and so we're not an NGO. That's the first point.

The second point is yes, that's what I think I'm requesting, and we've discussed this within the commission quite extensively. As a colleague just said earlier, nobody is actually doing this, and so it's the ability to actually take 5,000 pounds, in theory, a useful theoretical possibility that you want to keep open, or is it actually a recognition of the fact that you don't do it? I think the statement by the competent U.S. regulatory body that this is something that you don't think is a useful thing to allow would a major help in negotiating in the international arena with other governments.

MR. HAYMANS: Roger had a clarifying comment and then Michelle and Chester.

MR. PUGLIESE: Just in the discussions with the conservation, I think, if you go back into the record, it was clear that the council originally actually submitted a plan with a zero harvest and was essentially moved toward limiting it to 100 miles off of North Carolina with a very small amount, to kind of ratchet it down to as far as we potentially can. I mean, that's why it's called a sargassum habitat plan.

The point that I was going to make is that, in that discussion, there had not been -- The last time this was reviewed by our SSC, there had not been harvest for twelve years, and the SSC originally had said that they would set the allowable catch limit at zero. They essentially looked back and created an ABC that was based on what the council had put together, but, at the same time -- At that point, the ABC was set at zero, because it just tracked what was there, but, at the same point, they had identified that potentially this should be an ecosystem component, and so no ABC would be established.

I think the council's intent that this is managed as a habitat is clear on the record. The ability to adjust those -- I mean, right now, with movement toward an ecosystem component, that kind of sets the stage, almost, for doing the same thing, in terms of what that is. How far you can go, in terms of adjusting that rule, to make it clearer, if you need to, that's a discussion that you could have, and maybe Monica could touch on that, if need be, but I think, in our region, it's not only established under a habitat plan, but it's also essential fish habitat for multiple species and habitat areas of particular concern for multiple species in our system, and so the record is clear about intent on those things.

DR. DUVAL: I'm not on the committee, but I think it was just one individual in North Carolina who was harvesting at that time, or had harvested in the past, and so, really, the council created sort of a special exemption for this one person to be able to continue to harvest, if he so wanted, and so that was going to be my question for Roger, was how recently has there been any harvest? It sounds like --

MR. PUGLIESE: Twelve was at 2010, and so nineteen years. There has not been any harvest at all, and I think the reason -- I think he touched on one of the points, and this has kind of resurfaced. While this is all going on for international conservation, there was some internal discussions and concern, because of some of the reasons discussed before, like creating markets, big markets, like for use in hog and farm feeds, those big market situations.

If you create a significant biofuel market and production level in different places -- It's very different on islands supporting that and using that for their areas, and it's a different thing on other entities beginning to go into say creating that and structure and then harvesting in the open ocean, such as in the Sargasso Sea. About five years ago, I saw a Japanese presentation on a group that was looking at doing specifically that in the open ocean and creating a mechanism to develop biofuels with offshore harvest of sargassum.

MR. BREWER: Just a follow-up to what Roger was saying. For us to go essentially from 5,000 pounds of harvest to zero harvest, how much work would there be for this body to take that action?

MS. SMIT-BRUNELLO: You would have to amend the fishery management plan, and I guess we would have to go back and look to see what the reasons were on why the Fisheries Service -- I can't remember whether there was a disapproval when it was zero harvest, but I can bring that to the next council meeting, but there were concerns about having a zero harvest. That was a long time ago, and maybe those concerns aren't there. I am not certain.

Also, no one, to my knowledge, has ever applied for a permit to harvest the sargassum, and so the individual who was originally harvesting it, Mr. Campbell, I believe, had not been harvesting it at the time that the council put the fishery management plan together. Then, when it was approved, he also, I believe, was not harvesting it, and I am 99.9 percent certain that no one has ever come to apply for a permit to harvest sargassum under the FMP.

DR. LANEY: This is one of those questions that just popped into my head, but, relative to David's comment about it being harvested off the beach and that if infrastructure developed around that harvest that it could carry over to the marine environment, who owns it when it's on the beach?

When it's in the water, I guess, it's a public trust resource. It's under the management of the South Atlantic Council when it's in the South Atlantic Council's jurisdiction, but, when a resource like that washes up on the beach, then I guess ownership then goes to the community upon which it washed up, and is that the way that works? Is it no longer considered a viable habitat once it's piled up on the beach?

MR. PUGLIESE: It would not be considered under our management plan in terms of it providing -- I mean, what you have, under normal years, is you have nutrient production for those systems that are part of the system, I'm sure, but it's not considered under our active management plan, because we're talking about pelagic, floating sargassum.

MR. PHILLIPS: I am not on the committee, but I have a tendency to agree with Dewey about making statements, like the shark fin stuff. I am also sensitive to what Wilson was talking about, about when it gets on the beach. If it's a detriment to tourism, I could see maybe some of those places may want to catch it before it comes onto the beach, so they keep their beaches clean. If we make it zero, then that would take that out of the possibilities. I don't think they would ever

do it, but I am kind of happy with where we are. I think it's conserved, and I'm happy where we are.

MR. HAYMANS: We have exhausted the time allocated to this committee, and we're also up against lunch, and I think this is a larger issue than we're going to beat around for the moment, and so I would like to suggest that staff, Roger, bring back some sort of issues paper to either September or December, whichever the timing is best, sort of laying out the pros and cons of setting to zero and the mechanism by which we would do that.

Then we can have a larger discussion at that time. Nineteen years and there's been no harvest, and I don't think we're going to jump on it right away. Do we need that as a motion or just a timing and tasks issue?

MR. PUGLIESE: Timing and tasks.

MR. HAYMANS: So we can make that a timing and tasks, that you would bring back an issues paper for us in September or December, whichever time? I know your plate is full already.

MR. PUGLIESE: Maybe we could have the SSC at least touch on it, possibly.

MR. HAYMANS: Okay. Roger indicated, off the mic, that perhaps the SSC would have an opportunity to at least comment on it as we move forward, and so it's certainly something we will put on our agenda to discuss. Wilson, did you want to add to that?

DR. LANEY: No, Mr. Chairman. I think that's great. Just one more question relative to Charlie's point. If it's about to wash up on the beach, it's in state waters, and so then it's not under council jurisdiction, I guess, technically, and so, if you set TAC to zero, that wouldn't be affected, right? Am I reading that correctly?

MR. HAYMANS: I guess that depends on how far out you're going to intersect. Monica, did you have a point?

MS. SMIT-BRUNELLO: Just a point, and sorry if this got brought up earlier, but, while the council is not -- It doesn't have jurisdiction to establish the Sargassum FMP into international waters, but there is a section of the regulations, under essential fish habitat, that says that, while habitat beyond the EEZ cannot be designated as essential fish habitat, councils may still describe, identify, and protect such habitat. What that means -- Well, I know what "identify" means, and I know what "describe" means, but I am not sure what "protect" means, but that is in the regulations, and so that might be something that Roger might want to throw into a paper as well.

MR. HAYMANS: Thank you. Dr. Freestone, thank you so much for your presentation. We have kind of looked at sargassum, over the time, as one of those things that we understand its importance, and we have elevated it to EFH, but we've put it aside, and so I didn't think we would ever come back to this plan again, honestly, but it looks like we are, but thank you for your presentation and your time.

DR. FREESTONE: Thank you very much for the opportunity to talk to the committee.

MR. HAYMANS: Any other business to come before this committee? Seeing none, we are adjourned.

(Whereupon, the meeting adjourned on June 13, 2017.)

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Amanda Thomas
July 18, 2017

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