SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT ADVISORY PANEL MEETING

Charleston Marriott Hotel
Charleston, South Carolina

November 15-16, 2011

Summary of Minutes

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Additional Attendees Attached

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The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council convened in the Charleston Marriott Hotel, Charleston, South Carolina, Tuesday morning, November 15, 2011, and was called to order at 9:00 o'clock a.m. by Chairman Pace Wilber.

MR. MAHOOD: I just wanted to welcome everybody. For those that don't know me, I am Bob Mahood, the executive director of the council. We just want to welcome you all to Charleston. We appreciate the good turnout. I think you know that the habitat issues we are dealing with in the South Atlantic are very critical to our mission of managing the fisheries resources.

Unfortunately maybe the only credit we do get is for the good work we have done with a lot of the habitat. We have had to be so restrictive here lately on the fisheries harvest and reducing overfishing and rebuilding overfished stocks that we have – I guess as of probably today there are fewer fish that you can actually pursue out there than I think we have had in the past.

We are not particularly popular with the recreational and commercial fishermen, but some of the things that have had its basis here with the Habitat Committee, such as some of the big area closures to protect the coral and the habitats off the coast, we have been getting some accolades about that.

I don't know if you are aware but we received an award out in – where was it, Duane? What was the award that you went out there to pick up out in Denver, Colorado. It was an award of the Professional Science Association, which was kind of nice, and that was relative to the large area closures to protect the deepwater corals off our southeast coast.

A lot of the basics that come out of this group here have had some very positive image effects for us whereas some of our management activities on fish have not had such a popular – provide such a popular image for us. I do appreciate the work you all do and I appreciate you taking time out of your busy schedules and coming here to the meeting. I hope you have a good one, and I know Pace and Roger will lead you through it.

MR. WILBER: Okay so before we get into the meat of the agenda, it would be good if we kind of went around the room and everyone introduced themselves and said who they work for; and since we will probably do this in kind of a U-shaped fashion, if Pat would kind of start us off we will go around the U.

MR. GEER: I am Pat Geer. I am from Georgia's Department of Natural Resources down in Brunswick, Georgia.

DR. REICHERT: I am Marcel Reichert. I am with the South Carolina Department of Natural Resources.

MR. WATTERSON: I am Carter Watterson, Naval Facilities Engineering Command, U.S. Department of Navy.

MS. LAWRENCE: Alice Lawrence, U.S. Fish and Wildlife Service in Athens, Georgia.

MS. DEATON: Anne Deaton, Marine Fisheries, North Carolina.

MR. PRATT: Terry Pratt, commercial fisherman from North Carolina, one of the ones that is dissatisfied with what Bob was talking about what he is doing.

MR. TROWELL: Steve Trowell with the North Carolina Division of Coastal Management.

MR. DUREN: John Duren, and I am the recreational fishery representative from Georgia.

MR. JONES: Tom Jones, but I am here with John.

MR. HARRIS: Duane Harris; I am a council member from Georgia.

MR. LANEY: I am Wilson Laney. I am the council representative from the U.S. Fish and Wildlife Service.

MR. WILBER: I am Pace Wilber from NOAA Fisheries, Southeast Region, based here in Charleston, South Carolina.

MR. PUGLIESE: Roger Pugliese. I am with South Atlantic Council staff who works on habitat and all our ecosystem coordination efforts.

MR. KELLISON: Todd Kellison, NOAA Fisheries, Beaufort, North Carolina.

MR. GIBSON: Terry Gibson, Florida Recreational Fishing.

MS. DREVENAK: Sera Drevenak, Pew Environment Group.

MR. ELKINS: Chris Elkins, North Carolina Recreational.

MS. UDOUJ: Tina Udouj. I work for the Florida Fish and Wildlife Research Institute in St. Petersburg, but I live in Arkansas.

MS. WENDT: Pricilla Wendt, South Carolina Department of Natural Resources here in Charleston.

MR. MIKELL: Jenks Michael. I am the conservation representative from South Carolina. I live on Edisto Island, about 50 miles away from here.

MS. HILFER: Susan Hilfer. I am the recreational fisherman from Beaufort, South Carolina.

MS. WHITTLE: Amber Whittle with the Fish and Wildlife Commission in Florida, in St. Pete.

MR. ELLIS: John Ellis, U.S. Fish and Wildlife Service, Raleigh, North Carolina.

MR. WILBER: Okay, we have a few folks in the back to introduce. David, do you want to begin?

(Whereupon, introductions were made from the audience.)

MR. WILBER: Okay, thank you, and again echo Bob's welcome to everyone and thank you for coming and participating in the advisory panel meeting today and tomorrow. This is actually the first meeting where I have been like the official chair, so I am sure I am going to forget all kinds of Robert Rules of Order kind of things, so feel free to point those out.

I also probably have a tendency to participate more than I should as the Chair. If I start to kind of yak too much, somebody just kind of give me the evil eye. I know some people in the room are pretty good at that, so feel free to go ahead and do so. The first order of business actually is to accept the agenda for today's meeting and the minutes from the previous meeting. I am sure you have all looked at that 145-page set of minutes and you have marked it up. You have got all kinds of typos that have been flagged.

MR. MIKELL: I so move.

MR. WILBER: I guess the agenda and the minutes have been accepted, first motion. Okay, so the next item on the agenda is for Roger to talk about the Implementation Plan Tasks and Products.

MR. PUGLIESE: First of all, I would like to again thank everyone for making the special effort to be with us today and tomorrow. I think it is going to be a very productive and forward-thinking meeting. What we want to do is try to focus on some longer-term efforts and tasks, opportunities that we have developing with our coordination with the council and with partners in the region as you see with the second day being integrating the ecosystem coordination meeting.

Today what we wanted to do was to highlight a number of different sessions; the first session being addressing essentially a step forward from where we were with the development of EFH originally and the original fishery ecosystem plan. The intent is to look at how some of the different things have progressed to address the EFH five-year review and then looking to the future for the next generation of a fishery ecosystem plan.

In addition, that would also entail looking into the development and the status of Comprehensive Ecosystem-Based Amendment 2, as well as some input on the preliminary stages of the development of Comprehensive Ecosystem Amendment 3. The focus of the first session today really is going to probably ultimately – the most important part is some input specifically on any recommendations on what is on the table, comments, thoughts, other items that the council may need to address. The idea is that we're at the early stages.

Later in the afternoon we are really going to get into discussions on mapping, research, and observing, and policy, and look at how a number of these different – get pretty much updates on the scopes of the different components within our region and provide guidance on really looking at where we need to focus efforts on mapping additional research and trying to build – to a great

degree a number of these different ones are really going to be setting the stage for some actions that we can integrate where we can work with individual AP members, individual state AP Chairs to look to some products in the future.

Then we are going to finish off the day with a discussion of how some of these are all being integrated directly into some of the web services, and then ultimately this digital dashboard that is developing to give more tools to the council, to our partners in the region to enhance habitat and ecosystem conservation. That is kind of the focus of what we want to accomplish today and with that I will pass it back to Pace.

MR. WILBER: Okay, the first part of the morning session really is to kind of just provide some updates on a few key items related to the execution of the EFH program within the council and the Southeast Regional Office and then transition into a discussion of what could be part of the Comprehensive Ecosystem-Based Amendment 3.

The first item, which unfortunately there is not a copy of in your briefing package, is the successful completion by the council of its EFH five-year review by the regional office. That review was done last year and Dr. Roy Crabtree signed off on the letter in January, indicating that the council had completed successfully its EFH five-year review and outlined some specific items to look to in the future that we would, as the Fisheries Service, look to help the council accomplish in time for the next five-year review, which is due I believe in January of 2016.

Much of those recommendations focused on trying to flesh out additional information about EFH with respect to specific life history stages of the managed species. Roger being proactive, as always, already had in place a program to start fleshing out that information and that is something that he will talk about a little later on today.

Another important component of that EFH five-year review was to complete the guidelines that clarify the existing EFH designation language. This group last November saw a draft version of those guidelines, and those guidelines I believe are Attachment 5 to the meeting materials that you received.

Since last November when this group had a chance to look at the draft guidelines, Roger and the staff at the council have updated the guidelines to include the latest information coming out of the CE-BA 2 process to make sure that the EFH designations in the guidelines for tilefish and so on reflect what the current status of those designations are through CE-BA 2. What we are proposing to do now is there are still a couple of little holes that need to be filled in there mostly relating to identifying spawning aggregations for snapper grouper species, but what we are proposing to do now is to open up the latest draft to comment from the AP members with a deadline of, say, January 15 to get comments in; and then ask for the AP to sort of empower Roger and myself and the state subpanel chairs to faithfully execute the final revisions to the guidelines based upon the comments that are received and to complete those guidelines by the end of February.

That is sort of our basic plan for how we want to do that. If there is some endorsement for that particular plan, we would like to hear that. If there is some concern about maybe that the

guidelines need further revision, we could have that discussion as well. Does anybody want to make a motion?

AP MEMBER: I have a question first; have we already received these guidelines to review or is that happening soon?

MR. WILBER: The guidelines are in Appendix 4 of the meeting materials that you received. I didn't really see much point in kind of slogging through it paragraph by paragraph during the meeting today. It is fairly short and sweet. Again, we did slog through it paragraph by paragraph by paragraph back last November.

The results of the comments that were received are captured in the version that is up there on the screen now. If after this meeting you guys had any additional comments you would like to make on it, please let us know, but we would like to kind of wrap this up fairly quickly. Our proposal is to take any comments we receive and then work with the state subpanel chairs and then wrap it up fairly quickly in January and February. Anne.

MS. DEATON: I just have a question then. These are the guidelines that affect CE-BA 2, right, but these are the guidelines on what exactly is EFH and EFH-HAPC, so does that then go to the council or you will just finalize it and that is the end of it?

MR. PUGLIESE: Well, the EFH designations stand as they do in the existing documents that have been developed to date. The specification for EFH under that individual FMP is the wording we defer to the original wording. What this does – and I guess guidelines might be almost a little strong sometimes with this because it is clarifying where you talk about where we have designated inlets, this gives you the specific refined – these are discussions that have been ongoing to make sure that we have that either uniform and standardized and then also resulting in the spatial footprints that are going to represent that.

I think most of those links have been identified already in here and we just need to refine. Some actually have to be developed but there are state designations that apply to those. The idea is that this really does provide that next tier where there is uncertainty, as Pace said, trying to make the EFH as operational as you can in the field and in the commenting activities.

The core ones are going to be fairly straightforward. It is when you get into some of the finer level that this is going to provide essentially that. We went through that at the last meeting and kind of getting there, as Pace said, added in those refinements and now we just need to finalize this and then really focus in on getting the spatial layers that the state has, or if we want to uniform those through the region and shore that up. As always, these continue to be modified as the state refines theirs and as we get better information.

MR. WILBER: I will actually provide like an example that I think kind of might jar everyone's memory from before. Roger, if you could go to the one on penaeid shrimp. The way the guidelines are set up is that the very first part under each fishery management plan is a direct quote from the EFH and HAPC designation language; absolutely no edits to it at all.

If we were going to make edits to it, we were going to have to run those edits through the council or through some more elaborate review process, but in some cases all we needed to do was simply clarify or provide illustrative examples that map back to that original designation language.

Great example, if you look down into the part there where it talks about clarifications, there is a reference to state-designated nursery habitats. At the time that the EFH designations for penaeid shrimp were put forward what was in most people's mind I believe at that time were the primary nursery areas that exist in North Carolina.

Those are very clearly unambiguously state-designated nursery habitats. They are codified to North Carolina regulations. There are zillions of maps and all kinds of information to support that. The question that we have at the Fisheries Service in implementing our commenting on projects is do state-designated nursery habitats exist in the other states. What we are clarifying through these guidelines is the answer to that question.

We can go down to Florida because it is the simplest case after North Carolina. Florida has state-designated aquatic preserves. If you look into the reason things are designated aquatic preserves in Florida and they talk about the value of those aquatic preserves, the word nursery habitat is used throughout all of that language. We feel comfortable in implementing this particular EFH designation to consider these state aquatic preserves in Florida to be state-designated nursery habitat, so we will comment on projects accordingly.

MR. MIKELL: In South Carolina estuaries, are they not considered essential fish habitat?

MR. WILBER: I will get to that in South Carolina in a second. South Carolina is the more difficult case so I will save that one for last. When you move to Georgia, Georgia is also a fairly simple case. Georgia has in its regulations a framework for outstanding resource waters, but has yet to actually designate anything an outstanding resource water or an outstanding national resource water. In Georgia there are no state-designated nursery areas under their existing regulations.

South Carolina, now we get to the difficult case. South Carolina has a rule under DHEC to designate outstanding resource waters and outstanding national resource waters. Those waters are listed in rule in South Carolina. What we propose to do is in actually one of the appendices to this; Appendix 1 – yes, Roger is going to pull it up.

These are the outstanding resource waters that have been designated in South Carolina within coastal counties. Again, the documentation behind each of these designations is maintained in a file at DHEC. Those designations have been examined, not for each and every item listed because it is a fairly long list, but for a representative subset. It is clear from those designations that the value of these areas as nursery habitat was paramount and figured prominently in that designation.

Again, in executing the EFH program in South Carolina, we feel comfortable designating these areas or viewing these areas as state-designated nursery areas. Now the challenge we have trying

to modernize these designations is that these are basically the description that you see in the right-hand column there, that is verbatim the description in its entirety in the DHEC regulation.

How to translate that stuff into a GIS and something that is easily mapable is a bit of our challenge, and we are actually working now with the NOAA Coastal Services Center to develop a GIS layer of these particular water bodies. Again, going back to the whole purpose of these guidelines, we are not changing the fact that state-designated nursery areas are part of the EFH designation.

We are just clarifying what state-designated nursery area means in all four of the states that the council intersects. Again, it was a no-brainer in a place like North Carolina; still pretty easy but still a little bit more complicated in Florida; and then as you move up to Georgia and South Carolina, so we are just clarifying things.

This is how we actually execute the program. Now state-designated nursery areas is a good example to kind of go through, because if you recall from looking at the EFH designation languages as that was reviewed at the past meetings, state-designated nursery areas is a phrase that is repeated multiple times in different fishery management plan EFH designations.

It occurs for the coastal migratory pelagic species, it also occurs for the snapper grouper species. Back in the good old days when red drum was managed by the council, it occurred in the red drum designation as well. Hopefully, that maybe jars everyone's memory of where we were at from the previous meeting and then actually the meeting last November reflected a couple previous presentations on this basic problem.

That is what we have done with this document, provide those kinds of clarifications. In the few cases where some change to the EFH designation was necessary, that has been part of CE-BA 2 and is on schedule to be approved with the rest of CE-BA 2, which I believe is going to be sometime in the spring, right?

MR. PUGLIESE: Yes, I was going to touch on that in a minute in a little more detail but final rules should be published toward the end of the year. On CE-BA 2, because of the Octocoral ACL, it has to be in by the end of the year. Hopefully by the end of the year, the actual implementation will be in 2012.

AP MEMBER: You are looking for a motion to accept or recommend acceptance of the guidelines at this point?

MR: WILBER: **What we are looking for is a motion to accept the plan to complete the guidelines, and that motion is to open it up for comment to the entire committee by January 15, and then for Roger, myself and the state subpanel chairs to finalize the guidelines based upon the comments received.**

AP MEMBER: I would like to make that motion. I am very confident in our subpanel chair to make any North Carolina specific comments and changes.

AP MEMBER: I second that motion.

MR. WILBER: All right, any discussion?

AP MEMBER: I just have a question. Because these guidelines are tied to other designations that may change every year, every few years I don't know, will we review these guidelines every year and update them or do they plan to just kind of stay in place for the next five years or so?

MR. WILBER: I would expect that these guidelines will be formally reviewed annually to determine if changes are needed. Literally these guidelines are in the hands of project managers inside the Fisheries Service and state people and are used daily. When things change out in the regulatory framework that is no longer coincident with the guidelines, we will know it much sooner than an annual review.

Then we will be able to assess what the appropriate action would be from that. I hate the phrase living, breathing document because you hear it all the time and I have yet to actually see one. But this is certainly our intent that by keeping this kind of outside the CE-BA process and outside the formal regulations, that this is the kind of document that we can respond and make changes to fairly quickly. We have a motion. Yes.

MS. HILFER: I just had a comment on the South Carolina listing, these ones in Beaufort County specifically because I am from Beaufort. It is almost like they skipped half the county in terms of some of these, because Beaufort County is just totally made up of water. It seems like they only – I know these are DHEC's sort of regulations on these. How do you comment on your taking it from DHEC?

MR. WILBER: Actually I could probably show you off during the break, but South Carolina is interesting because while there are about 60 or so water bodies that are designated Outstanding Resource Waters, they occur in three very dense clusters and then a couple little oddballs that are not in one of those three clusters. I don't know why DHEC did that.

The other thing to note, too, is that most of the areas that are designated Outstanding Resource Waters in South Carolina are way away from any development and really unlikely to have any significant development, but they are what they are. It is an extra tool in the toolbox to have. I don't want to say that the areas that are comparable habitats in Beaufort County that are not designated outstanding resource waters receive any kind of lesser level of protection. We just use other tools to get to that same level of protection.

MR. MIKELL: Not to get stuck on this point, but a lot of these creeks in Charleston County are great resource waters, but you can't eat the oysters out of them. I don't understand that. How can they be clean, clear waters when you can't eat the oysters?

MR. WILBER: Again, is somebody here from DHEC to answer that? Again, we are just trying to implement the state designations, not quibbling with the state designations themselves. I would guess though that in South Carolina DHEC goes through some kind of formal review of

its regulations on a schedule, and maybe that is the kind of the venue to bring that kind of an issue up.

AP MEMBER: I'll take that one. Because a stream or creek is closed based on bacteriological reasons, coliforms, it doesn't mean it is not a great nursery area for – in fact, it might be a better nursery area because you don't take the oysters out and you have got all that habitat. A perfect example is Morehead City; Calico Creek is wall-to-wall oysters. The boys go up there and fly fish for red drum in amongst those oysters. You have to understand that just because some dog or raccoon feces get washed in, it doesn't mean it is not a great nursery.

MR. PUGLIESE: Also one thing I think that there is some kind of overriding concern to that these areas are only the focused areas. We are looking at areas that are designated as Essential Fish Habitat Areas of Particular Concern, so it is a step up. As Jenks was talking about; a lot of these areas are under a broader umbrella of estuarine habitats that are EFH.

They have an EFH designation in the broader scope and capture most all the distribution. When you get to that HAPC designation and trying to refine it down to a state-tied designation, then it brings it – and provides a little bit more tools to get into permitting issues and commenting through that process.

MS. DEATON: I am thinking it sounds to me like if you don't feel the state designations represent or fully represent all your high-quality nursery areas, the avenue to go is to work with your state and you could get another area designated. Once it becomes a state-designated nursery area, then it would be included under this HAPC.

For example, in North Carolina we have those really high-defined PNAs but they are not the only high-quality nursery areas. We have anadromous fish nursery areas but they are not designated. We have the grass beds that are nursery areas, but they really were included with that. We would have to go as a state and get those areas designated.

MR. WILBER: Actually, Roger, can you go to the table and I will kind of explain. Actually in North Carolina, I kind of oversimplified it a little bit when I said PNAs. That whole top part of that table are the North Carolina designations that we view as HAPCs under the existing language. Primary Nursery Areas I think are by far, area-wise, and then counter-wise when that is most common to us, but we include the crab spawning sanctuaries, the oyster sanctuaries, and so on.

Now as far as Anne's question, if there is something missing in these designations, how do you go about making it an HAPC, one avenue is the one that she mentioned, and that is to work through your state process to make that designation happen. Once that designation happens, it will automatically cascade into this EFH guide.

The other avenue is the one that we will talk about later this morning, and that is the scoping for the issues for CE-BA 3. If we wish to add EFH or subtract EFH or whatever, something that will require a change to the existing designation language, CE-BA 3 is the next bus leaving the station where that can happen. If we have specific locations that we would like to add to the list,

CE-BA 3 could do that. It is probably an equally long, maybe equally difficult road to go down to effect that change, but it is another alternative to doing that.

MR. PUGLIESE: Yes, and to that directly, that is something that has been clear on the record from the original council deliberations on EFH, and specifically on the EFH-HAPCs with regard to state designations. There was a real desire to create something that provided that mechanism so that as the state added in things such as when North Carolina added in the strategic habitat areas, new efforts, that those would be umbrellaed, as Pace said.

There is a very clear record that the council intended that in the beginnings of when we created some of these designations. I think it is a real good opportunity to initiate that and proceed further to get any new ones that could ultimately be folded under this umbrella.

MR. WILBER: Any further discussion on this proposal? All right, so just to kind of recap, the proposal is that the entire guidelines are open to the entire committee for comments by January 15, and then the committee empowers Roger, myself and the State Subpanel Chairs to finalize the guidelines based upon the comments received. **That motion has been made and seconded, so now we'll take a vote if there is no further discussion. Everyone okay with it say aye; any opposed? So carries.**

MR. PUGLIESE: I think this is really an important thing because as we get into some of this other discussion about collaborations and cooperation with other efforts, as we get some of these refined designations, there may be a real opportunity to use some of the other partners to provide us identification of essential fish habitat designation within watersheds, within sub-areas so that we can ultimately be looking at how things change over time.

We are directly going to be connecting into having permit information connected to some of the EFH information so that you could look at where within a watershed there may be permits and direct comments by National Marine Fisheries, NOAA Fisheries on those, so we can get a better scope of it.

It will benefit the operations at NOAA Fisheries permit efforts, but also with the partners in the region, and maybe even get some tool capability to really connect that into the broader scope of watersheds, at river systems, and then maybe even into things that could collapse into connection to estuary-dependent species like gag or something that would look at changes over time, how efforts have changed, both water as well as in habitat distribution and changes in those.

MR. WILBER: The next item on the agenda is for Roger to review some recent funding that the council received on the Eco-Species Project.

MR. PUGLIESE: Let me jump in real quick and just touch quickly on CE-BA 2:. I was just going to run through a quick couple slides on where CE-BA 2 is in the process, because I think what happened is that when we first went down the road of CE-BA 2 all of these types of things were in massive long lists and the reality of really refining that deliberation, discussion and understanding that really these are umbrellaed under many of them; really refined it down to a

couple of the measures that remained in CE-BA 2 for finalization and the council did finalize this, submitted it, and CE-BA 2 is in review.

I just wanted to touch back on some of the essential fish habitat actions that were included. Under Action 6, the designation of the deepwater MPAs as EFH-HAPCs under snapper grouper; that was important because what we want to do is look at the entire context of these areas and not just the individual hard bottom structures but the habitat that combines that complex that makes up this MPA.

Also under Action 6 was the area that we had discussed earlier on that had essentially slipped through the cracks. I think all the information in the original habitat plan made it clear that the tilefish having such a fine distribution really constituted EFH-HAPC under snapper grouper, but it never got folded into the wording. The effort under a subpart of the amendments to snapper grouper designated the 150 to 300 meter area as tilefish EFH-HAPC.

In addition, to again build on this idea of complexes that are being designated have – complex of deepwater habitats, the Deepwater Coral HAPCs were also identified as EFH-HAPC. Again, it gets this idea of the structural components of hard bottom lophelia coral, and all the interconnected habitats constitute significant habitats in this complex; so the idea that this also would be designated as essential fish habitat areas of particular concern.

The last specific EFH designation was with regard to actually creating EFH for pelagic sargassum. The original sargassum plan, while being approved and prohibiting most all the harvest of sargassum in the region, did not have an EFH designation because we were looking at – the original designation was virtually the entire South Atlantic Region from the beach to the end of the EEZ.

This refined it down to the top ten meters within a Gulf Stream footprint that we had developed earlier. It actually picked up on a spatial area that was already designated as EFH for a number of other species. This shored up our sargassum designation. The other actions under CE-BA 2 included the modifying of the octocoral, discussions about that.

Actually what it did is it really – under the federal plan now there is total zero allowable catch for octocorals and essentially there is zero catch for any corals under the federal plan. What that was accomplished by was dealing with the octocoral area south into Florida. Florida will manage octocorals in federal waters under this.

The council still has EFH designations, has other mechanisms to do it, but under the federal coral plan essentially everything north is no allowable harvest. It finalizes that and meets the mandates under Magnuson with regard to specifying the ACLs. Under the federal plan there is zero allowable harvest of any hard bottom coral or coral reef or octocoral habitats.

Under Action 4 there is a modification of the SMZs off of South Carolina to limit harvest for snapper grouper species and coastal migratory species to the bag limit and with the use of non prohibited gears. The last action under CE-BA 2 is modifying the turtle release gear requirements for the snapper grouper fishery.

The timing of notice of availability I included in your briefing materials. It was published on September 26; comments are due by November 25. The proposed rule just came out November 8, also with comments due by November 25. Again, to meet the statutory deadline, the final rule will be forthcoming and hopefully implementation will come in 2012 to finalize CE-BA 2, which pushes us into the next generation with the development of CE-BA 3. That is it on CE-BA. One thing I would like to make a quick point about is hopefully you all weren't overwhelmed with the entire briefing package.

As usual these are not intended to be full review. A lot of the material is tied to especially with our coordination collaboration efforts with partners. You are going to have a lot of things to be able to refer back to with structural things, a lot of referencing mostly of the ecosystem coordination efforts of a lot of our partners tomorrow. The idea was to be able to have those available for use now and in for the future. That is all on CE-BA 2.

MR. WILBER: I jumped the gun there a little bit. Any questions about CE-BA 2 and its schedule? It has been a long time in the making. I think at one point the council had the idea that the CE-BA amendments would be done from start to finish in 12 months, but they are taking a little longer than that.

Really, just my personal opinion is that by far the most significant EFH-related action in CE-BA 2 is the co-designation of the Coral HAPCs as EFH-HAPCs. It would be getting fairly deep into the weeds to explain the difference between those two, but essentially as folks in the regulatory community we were struggling with how to treat Coral HAPCs in a regulatory context, because a lot of the regulations and stuff for EFH-HAPCs don't exist for Coral HAPCs; so by having a co-designation of the two kind of closes that gap and really makes it a lot easier for us to deal with.

It is also pretty significant, and that is, what, 25,000 square miles or something – 23,000 square miles of EFH-HAPC that is designated through this so it is a pretty significant thing. We will hear from our colleagues from the Navy later on about how that complicates their life for training missions. With that said, are you ready to go on.

MR. PUGLIESE: Yes, what I would say is that if individuals want to supply comments, as I indicated those comment periods are open, so I would encourage those agencies and individuals to support what you all have been working on. It helps the record. What I would like to move on to is the next generation is CE-BA 3.

As I mentioned earlier on, we are early in this process. We are in the mode to ultimately the council really would like to get to this point where we have these types of discussions through the middle of a year; come to the end of a year, identify what are going to scoping at the end of a year, go to scoping in January, February, and do a Comprehensive Ecosystem Amendment the following year. We are little by little getting closer to that and this is the next generation.

What I will identify is that some of these issues are resulting from issues that may have been raised earlier in other amendments, in other issues; they have been laid on the table by advisory panel or council members. We are in a real early process of looking at what may move forward.

Subsequently, the Snapper Grouper Advisory Panel and Coral Advisory Panel have met and have had a first preliminary look at this list.

The list right now identified as potential actions that could be addressed is protective measures for speckled hind and Warsaw grouper in the mid-shelf fishery; potential powerhead prohibition in the EEZ off North Carolina; potential expansion of the coral HAPC areas based on new information on coral distribution or combined habitats; consideration of expansion of the Snowy Wreck MPA; wreckfish fishery impacts on deepwater coral; and what impacts may be associated with deep-dropping for snapper grouper species. The first one is tied directly to action the council previously took.

The council had an amendment in place that had designated a 240-foot depth contour as a prohibition of deepwater species mainly to address the bycatch of speckled hind and Warsaw in the fishery. That was removed and the council is now looking at provisions that would replace that and have more of a focused effort to look at these species.

Some of the first discussions are how they relate to the species distribution relates to MPAs within our region, whether inside or closely associated with those, so the potential for expansion, modification, revisions of those, and specifically maybe spawning area closures where they can document very specific areas for spawning area closures, so the process of beginning to look at what the information is available and how to start that process; to just touch on some of the first levels from a habitat side and from an ecosystem that we have information on; touching on our IMS system.

We were able to look at information that was tied to the MARMAP data system, MARMAP/SEAMAP, and I doubt SEFIS was included in this data set. It has not been integrated into some of the original things; but just giving you relative distribution of some of the catch records, specific fishery-dependent catch records relative to the MPAs in the northern section of the area.

To give you an identification of one thing that became obvious is that actually a lot of the distribution of speckled hind was to a great degree inshore of the original 240 line so that will play in as the council looks at this. Another one was looking at one of the newer components of the South Atlantic Fishery Reviewer, which is ultimately going to have all of the fishery-independent programs folded in here; again looking at speckled hind distribution, now looking at relative to live hard bottom structure, and being able to look at where it is predominant and how it is tied to some of those habitat distributions. Those are first preliminary views of relationship to regulatory structure as well as some baseline habitat information.

The next item that was being addressed was powerhead use off North Carolina. The Division of Marine Fisheries issued a paper in January of this year looking at having some concern over localized depletion relative to snapper grouper species and the use of powerheads. Subsequently, a letter was provided to the council in March of 2011 specifically to address the prohibition and use of powerheads off North Carolina.

In the discussion the council has been looking at the whole scope, so it has been raised as, well, if North Carolina is looking at it, there may be a consideration or prohibition off of other states. Just as a note I indicated in 1994 the state of South Carolina specifically requested the prohibition of powerheads off of the EEZ in South Carolina.

That was driven a lot by some of the efforts that happened on targeted efforts on gag and areas on some of the reef systems in the state, but that did go through and was approved. The council is looking at what the possibilities are and how to address powerhead use off of North Carolina in response to the request from the state.

There were a number of potential coral habitat areas of particular concern, the deepwater coral HAPCs that were essentially just put in place not too long ago, but there has been continued effort and research. In preliminary review a couple of different areas have been focused on. Multi-beam data in 2010 looked at distribution relative to Cape Lookout and potential modifications of the Northern Cape Lookout, which is a fairly small CHAPC, and some areas were identified in the northern section.

The shallow water lophelia off Jacksonville was identified also in 2010. There is a recommendation – and this is associated with the western bound of the large Stetson-Miami HAPC. Then the potential for other areas of oculina distribution were identified also in recent dives.

Quickly, to at least get a scope on some of the areas they are discussing, this is Cape Lookout HAPC to the north. The preliminary capture of the proposal is to capture this corner point up in this area. As I will indicate is this is the first discussion of this, the first presentation of available information on it.

We need to go through and review what other habitat information is available, use patterns, fishery patterns, et cetera associated with all these things. We are at, again, an early stage of doing this. It was a long process and pretty intense to get these in place, so we want to make sure that the same type of effort is done.

One of the other areas I just mentioned was the potential for the Stetson-Miami Terrace, the large HAPC. As you can see, this is the actual area and the area of focus right now is this section in here. Embedded in it is actually the North Florida MPA, is right in the center section of this area. If you look at some of the mapping that has been done mainly by John Reed's work, and really the mapping area is here with some baseline areas as well as JSL Dives Associate.

When you look at the southern is a blowup or a reduction from a blowup to that area. This captures that entire area from 30 degrees 45 minutes north to I think it is 29-52 south. Now we do again have to look at how much other information is available. Some of this I think is really based on the potential speculation that some of these areas into the north also have some types of habitat, so that has to be taken into account.

Again, fishery operations, because I know just from working with the original data, especially under VMS information, that I would say that the fishery operates at least up through this entire region in the southern section that may be proposed.

(Question asked off the record.)

MR. PUGLIESE: This one right here? This is actually a blowup of this cruise that was done here, which would be in this little area right there.

AP MEMBER: What is it telling you?

MR. PUGLIESE: What it is telling you is there are deepwater coral pinnacles that have been found in here, here and here. There also are some coral habitats I think that are maybe flat-based hard bottom with coral on them within that region. It is just giving you a footprint of the bathymetries. This is high resolution multi-beam, and then some point areas that have been identified at pinnacle. The truth is I haven't had a chance to look at the details of some of these to see to what degree some of these areas may be impacted.

MR. WILBER: Just to followup, the interpretation of that is just that the warmer colors are shallower and the cooler colors are deeper, and where you see strong contrast between colors it is indicative of significant structural relief.

MR. PUGLIESE: That is probably what you were really asking, sorry. Yes, you are looking at – the bathymetry is based on, or temperature applied to what real bathymetries in that area are based on multi-beam work that was done.

MR. WATTERSON: Roger, may I ask a follow-up question? This is more detailed probably then is necessary for this, but it goes to what I was going to talk about this afternoon. The two boxes in the upper right, the light gray boxes that are mapped. Those are areas that John Reed has mapped?

MR. PUGLIESE: Yes, this got folded into a combination effort of what has been done to date. This, as I mentioned, was really preliminary. This was pulled right out of some of the presentations and did have the navy information integrated directly into it. We will get into the real details later on, but I wanted to at least kind of cobble together in a quick view some of the things that we see right off the bat as we are looking at the proposals on the table from the Coral HAPC.

In addition to those specific HAPC designations, there were discussions of a number of other – on that first list I show you the snowy wreck, and the snowy wreck was raised because there had been identified an additional – a deepwater wreck that was larger in designation, larger and also they had identified potentially some lophelia on the deeper section of the snowy wreck.

There was no specific recommendation from the Coral AP to move forward this, and essentially they are saying that they need to look – additional data and additional mapping need to be

accomplished to refine what that area really is like off of the Snowy Wreck MPA. Other issues that were raised; two gear issues that were identified were the issue of the wreckfish fishery.

This is a pushback to the original discussions in CE-BA 1; and actually before that in the original wreckfish plan document I think I had identified this as just needing to understand the operations. These are not bottom-tending gears but they are fairly significant gears; large 50-pounds weights with trailing lines on them.

But to date from as far as I know the Snapper Grouper or Coral APs were not provided any additional information on impacts, and I have not been able to identify any additional information that has been identified on identifying potential impacts of this gear. In addition, it is the same with some of the recreational deep-drop.

This was an issue that was raised earlier on in deliberations under CE-BA 1 and following that. So far again we don't have any specific detailed either studies or data that are showing what potential impacts, and as far s I know nothing was presented at the Snapper Grouper or Coral AP meetings.

On both of those issues, I would just at least raise those if anybody else in the AP or associated with these has any other information that would support even moving forward with this as an issue, because right now there is no additional information that I have been able to find to provide or access for the APs' deliberations.

AP MEMBER: Roger, just to my knowledge it is a knowledge gap. I mean. it is something that I think hasn't been addressed. A number of us have talked about how that – it is not an easy research topic.

MR. PUGLIESE: Yes, and again it is a fairly – especially the wreckfish fishery is a small fishery to begin with and even getting smaller from the last iterations from the ACLs that I understand. But it is an information gap, it was identified as an information gap earlier on in the original wreckfish plan, and the followup in CE-BA 1.

There just needs to be some work to really probably get some videos to see how they operate and how close they are getting to some of those ledge systems and put that into context of the distribution of those habitats, too. I think one of the other things that had been identified is that there was potentially a spawning aggregation for wreckfish identified on Miami Terrace, and the implications that would damage habitats or what that kind of broader implication may be, so I think it is significant research information for that fishery.

MR. WILBER: My question for Roger is how can this advisory panel help you sort through that handful of bullets to stay on schedule for what should or should not be in CE-BA 3 and help refine what actually might be in CE-BA 3?

MR. PUGLIESE: This is the time to at least look at this list to see if there are ones that from a habitat standpoint or ecosystem standpoint makes sense to have the council address under and go into scoping for the subsequent year, so are there ones that given the information may not be

worthy of actually an action to be considered or an alternative to be considered this time, but more of a research need.

I think any input guiding the council on what the efforts are – I think with regard to Number 1 with the speckled hind, Warsaw, the council, given the congressional mandates, has to move forward with this, identification of the types of information that could be looked at or maybe useful.

I just started touching on things, habitat and species-associated information to provide us either concentrations or spawning information I think is something that needs to be directed and we need to move forward with to get even more information on. It is fairly obvious that one is going to have to move forward. The request from North Carolina, concerns about – and actually that was one we raised earlier on about powerhead.

There have been comments about the implications from a habitat standpoint, ecosystem standpoint, and those kinds of comments I think would be useful for the council to hear because I know there were some specific comments. Anne may have raised this very specifically about it because there have been statements that, oh, there are no habitat-related impacts, and that was something very different from the last time we discussed this at the floor.

MR. WILBER: We have these six bullets up here for consideration under CE-BA 3. Maybe after we wade through these six bullets, we will then entertain whether there should be a seventh and eighth or a ninth bullet for other things. But, would it be useful to you at this point if we just sort of, okay you have given us an overview of each of these issues, maybe now we just start adding a couple of sub-bullets under the first one; maybe the first sub-bullet being, based upon current information that Roger has provided to us, does it seem like a smart thing for the council to continue to explore designating this area as EFH or an HAPC? And then ask getting the panel's input on what additional information they think would help further complete that exploration and then maybe go through each of the bullets in that kind of a fashion; would that be useful to you?

MR. PUGLIESE: Yes, I think so, because especially on the first one there is something I didn't mention that it has a direct tie to the EFH designation.

MR. WILBER: Okay, does it sound like a reasonable way to proceed? All right so are you going to take the notes underneath the bullet? I guess the first item is does the AP kind of feel this is a useful item to continue to explore for CE-BA 3 or is the AP generally just unsure about that based upon the information that is available?

MS. DREVENAK: I would say that it's something that needs to be there. I think that the implications of action for Warsaw and speckled radiate out to all of the other species that are managed by the council. I think that protections particularly in the mid-shelf for Warsaw and speckled are going to be protections for all of the species.

Anything that is on that mid-shelf break where we see the Warsaw and the speckled is going to have the consequence of protecting habitat that is essential to all of the animals that are managed

by the council. I do think it is appropriate for these amendments, and I think it is something that is vital that it is in there.

I think some of the things that are necessary to move forward, I know there are a lot of sort of parallel efforts right now to gather suggestions from fishermen about where these spawning aggregations may be. I know there has been varying success of getting that information from people and whether that information even exists.

It sounds like those are coming together fairly quickly, and so it seems like the timeline may be possible. I would suggest that information is vital to get information from the people who are on the water. Then we have that analysis of the speckled and the Warsaw, but I think it is important just to say over and over again that analysis was incomplete. It didn't sample any fisheries outside of, what was it, 240 feet, something like that, so those data are not extremely reliable.

MR. WILBER: I just have a technical question. These areas where the speckled hind and the Warsaw groupers congregate at the mid-shelf; what kind of information do we have about their use in that area? Is it simply that they are more concentrated in that area or do we actually have information that they experience superior rates of growth, reproduction, or survival at that location?

MS. DREVENAK: I think we know almost nothing. My understanding of what we know is just that there are reports of interactions with those species at those locations. All that means is that somebody filled out a logbook or somebody returned a MRFSS call indicating an interaction at approximately that area with one of those species, but there is no sampling in other areas.

There is a lot of evidence from people like Jerry Ault and these guys that there are aggregations of these species and that they do occur in that mid-shelf area, but we can only infer that the two are related, that the aggregations are related to these increased interactions with the species in those breaks.

AP MEMBER: St. Lucie and Martin County have a robust, probably too aggressive artificial reef program in my opinion, but they have got ample video with at least Warsaw and fairly large aggregations relative to what history would have looked like. That is available if you want to get it. But again, like Sera said, I don't think we know much.

DR. REICHERT: I have just got a quick question. Are these seasonal aggregations or spawning aggregations or do they seem to aggregate throughout the year; just for my information?

AP MEMBER: I would have to check.

MR. WILBER: Being an EFH person, the reason I ask is you guys have all seen the past meetings that triangle that occurs in the EFH regulation that talks about levels of information and the importance one should ascribe to an EFH designation based upon that level of information, and the bottom part of that triangle is presence/absence. The second level up is concentration. The third level up is superior rates of growth, survival and reproduction.

The apex of the triangle is recruitment into the fishery. Now while there is no hard requirement that a certain level of information needs to be attained in order for a designation to be an HAPC designation, there is sort of a general feeling that HAPC designations tend to be at the superior rates of growth, reproduction, or survival and not at simply the concentration level and definitely not at simply the presence/absence kind of level.

Now we don't necessarily have to be kind of confined by that, but that is sort of the state of the current implementation of the EFH program. One of the protective measures that could be done is to designate special EFH for speckled hind and Warsaw grouper. If we are going to do that, we need to know at what level of information that designation is actually going to occur and then decide if it will cascade up to a higher level of protection of being an HAPC.

AP MEMBER: Just my opinion that I think probably most of the information available for those species is at the presence/absence level and possibly there may have some understanding of relative abundance on the shelf versus shelf break versus upper slope on that. I think probably there is zero information on relative growth rates or survival across those three different broad habitat types for either of those species. I am not fully familiar with the literature so I could be mistaken about those, but that would be my best guess about where things stand.

MS. DREVENAK: Yes, I know and I agree with that. I just think that it is going to have to be on a pretty low information basis. I think these species are in pretty – from what we can tell they are at extremely depleted levels, and the council is mandated by law, appropriately, to do something. The alternative is everything outside of 240 feet is closed to all fishing. That is sort of this balance of management and science and letting the perfect be the enemy of the good is not necessarily always the best.

DR. REICHERT: I just wanted to mention a paper by Ziskin et al out of our lab. I think it is the most comprehensive study on speckled hind that came out I think earlier this year or late last year, and I can provide that paper. I think that is the most up-to-date and comprehensive information available on that species. Yes, Ziskin et al, and I can provide a copy to those interested.

MR. PUGLIESE: One thing that does tie this together is that under the EFH designations right now we actually have a line under snapper grouper that identifies EFH-HAPCs for species in the snapper grouper complex. If there are spawning locations identified technically, it is intended to – and actually the user guide alludes to that that was going to be done.

We started a process a while back looking at some of the baseline data from MARMAP where there was spawning fish identified and tried to look at coming up with some of these spatial layers, whether it be for the complex, for an area, or whatever. But that is a process that – the point is that technically under the designation right now it is specified that it can be an EFH-HAPC once that information is available; similar to what we did with the state designated areas.

I guess the next process is to look at what available information, if in the MARMAP and other information you do have at least a baseline of identifiable spawning fish in some areas, that you could begin to cobble those together into some type of an aggregate of an EFH-HAPC which

could be almost the broader footprint from which maybe there would be a regulatory component in that the council may move forward.

MR. WILBER: In my mind that comment about the spawning aggregations, which is specific in the EFH, also ties back to the Level 3 in that at superior rates of growth, survival and reproduction, so it all fits in that plan. We have sort of the guts of what an EFH designation might kind of be and at what level it might kind of be. We kind of understand some of the information that we would need to collect to kind of further this discussion. My question then is are there other protective measures for these species besides an EFH designation that the AP might want to consider further pursuing?

MS. DREVENAK: I don't think there is much left in the toolbag. There is a complete moratorium on harvest. We are down to the bottom of the toolbag, right, of things that we have available to us to sort of help. I think the EFH designations is one of the last good options we have got for these guys.

MR. WILBER: Okay, are we ready to move on to the next bullet? I see a few heads nodding. The next one is the powerhead prohibition in the EEZ off of North Carolina and potentially other states. Does the sort of gut first kind of feel; does the AP feel this is a good thing to continue to pursue?

AP MEMBER: Absolutely, and I would like to see it extended throughout the council range. We have a huge problem in Florida with the gag showing up and one or two boats out of Jacksonville coming down and shooting every last gag off the wreck as soon as it gets warm enough for them to appear in those waters. Additionally, people are going out and shooting Goliath groupers. They either can't tell the difference or don't care. A coastwide ban on powerheading could have a lot of cascading benefits for a number of species.

MR. DUREN: I can sure understand the issues about powerheads but is it a habitat issue?

AP MEMBER: This is a bit of an extrapolation, but I have had a number of conversations with Chris Koenig about spawning aggregations in the Gulf on gag groupers. They have a hard time documenting them even with a sub underwater because they are so noise sensitive, or so he says. There is at least a chance that the explosions could be disrupting aggregations of spawning groupers.

MS. DEATON: I was just going to mention that – I think I have said this before, but I think there does tend to be habitat damage if they are – when they are focused on this type of activity, they are not watching the coral and so there is that kind of physical breakage. In that way it relates to habitat.

I think what I saw in North Carolina was last year, which spawned that issue paper and everything, was South Carolina fishermen were coming up and doing this in North Carolina. Whenever you have a prohibition in one state it kind of, you know, the guys move around. I like the idea of everywhere having similar restrictions, but at least North Carolina does support restricting those powerheads, I believe.

AP MEMBER: Sure, I fully understand the concerns that are being raised, but my first question was the same as Mr. Duren's about under what is the relation to our task as an advisory panel, because this is something that is more appropriate for a Snapper Grouper AP?

MR. WILBER: Well, Duane might want to jump in here, but we call ourselves the Habitat Advisory Panel, but that is really like the short version for the Habitat and Ecosystem Management Advisory Panel. In that broader charge I think we are okay. I do feel there is enough of a habitat kind of foothold here that we can at least have the conversation.

I think like any good advisory panel our job is to try and push our boundaries, and it is up to the Habitat Committee to kind of say, no, get back inside your box. I think this is a perfectly appropriate Flexing of our muscle here. That is just my opinion.

AP MEMBER: On that note, Todd, you well know that groupers are major reef engineers. Those powerheaders are targeting the big males. They are sweeping off the reef, creating space for corals, and also shooting the biggest and best spawners. As we all know, small fish from the larval stage on up to a significant size are also bait for anything that is above them in the ecosystem. I think we are on solid ground here.

AP MEMBER: In the context from what I remember from last year's Marine Fisheries Commission, it was brought up that many of the divers are targeting hogfish, the larger males as well. If they are spawning and depleting a particular sex may affect that. That was the context of much of the discussion at the commission last year.

MR. DUREN: I think if we don't want certain animals killed, that is quite an appropriate measure to be taking, but I don't see it should be taken under habitat rules. I think it ought to be taken up under other aspects of the fishery management plan.

MR. WILBER: Do we know if other panels are considering this?

MR. PUGLIESE: Yes, this was brought up to the Snapper Grouper Panel and to the Coral Panel but I don't think there was a whole lot of discussion at the Coral Panel on this issue, but Snapper Grouper had some input. But, again, as early as this is in the stage, kind of the request was this is a list and the council has to move forward with this action. Duane may have more details on that because I did not see the specifics from snapper grouper on powerheads.

MR. WILBER: Along those lines, we have heard some anecdotal stuff about the habitat tie. Do we know of any reports or more formal studies that would get us beyond simply a collection of anecdotes?

MR. MIKELL: Pace, the bullet specifically says North Carolina, and I have heard I think Florida express an interest in this, too. If we are talking about it, why won't we talk about it from the whole South Atlantic side; because if North Carolina has a problem and they outlaw it out there, then they are going to move into South Carolina, and I don't want to see that. If they move into South Carolina and we outlaw them, then they move to Georgia. Why don't we just tackle the whole thing as the South Atlantic and not just North Carolina?

MR. WILBER: I think that is good. We are going to at least begin talking about this now, clearly talking about it as a South Atlantic thing and not simply something simply limited to North Carolina. Again, as Duane said, our charge as the Habitat AP would be to build the best habitat case for this prohibition.

The more we can get beyond anecdotes or maybe start formalizing the collection of those anecdotes, the closer we are to building that stronger case. This is something I guess Roger and the rest of the council will take into advisement and figure out how to move to the next level on this discussion.

MR. PUGLIESE: Some of these specific points right here, if we can begin to pull together what have been identified, sound issues, breakage, and disruption of sex ratio by harvest of larger individuals, all those on the habitat and ecosystem context are pretty significant. As you all have mentioned those, as Pace has indicated if you can identify any resources where it may begin to provide that type of technical background and input, that is going to be important to move that up the chain as this proceeds.

This is early in the process so I think we have got of latitude to not only go from what you know, but also now that this has been kind of clarified a little bit more about intent and what we are looking at, individuals can maybe look into other great literatures and other things that may provide more foundation for this action.

MR. WILBER: Okay, are we ready to move on to the next bullet, expansion of the Coral HAPC boundaries? A few people are nodding; I guess that is good. All right, so on to the next bullet. Roger, just kind of refresh our minds real quick as to where those expansions might be.

MR. PUGLIESE: Probably best to look at it in kind of three different contexts right now. Really, we only have two on the table as even consideration right now; the first being the expansion of the Cape Lookout HAPC. Again, on all of these we have to really look at other information beyond what the recommendation is. We have to look at the fishery use as well as other habitat information.

Right now there is a small area to the north that has been identified as potentially expansion of the Cape Lookout, so that is the first area. The second proposal was looking at a larger area, but again tied to the western boundary of the Stetson-Miami Terrace HAPC. Some of this has to do with a detailed survey that was identified plus some information that has been identified that has been provided by the Navy.

I think it was very clear from what I had heard is that the recommendation may be based more on potential habitat distribution than actually some of the detailed high-resolution or field-verified information. As we go through this process we will see some more detail from the Navy on some of their information as well as other information that the council has to review. Those are the two major areas.

The third one was the distribution of oculina north of the existing HAPC area. Right now there is nothing on the table. There have been some cruises that have identified – again some multi-

beam that have identified additional pinnacle system to the north, and we have to look at – I think John Reed may be providing a recommendation prior to the December council meeting. We do not have that in hand right now, so that is going to be moving forward.

I will identify that the council has known that there are some of those habitats to the north. The rock shrimp fishery – and it is not just the royal reds now – the rock shrimp fishery when you starts talking about oculina has been fishing some of those northern habitats pretty extensively for a lot of years.

I think that is also going to have to be taken into account as we go down that road to see what the impact of that fishery has been on those habitats, if they are recoverable. Those will be all in balance as the council looks and deliberates on it. Those are the three contexts. Some has more information, some is still in development, and again this is early in the process and we haven't even looked at the detailed use patterns yet. But those are on the table for at least consideration by the council for adding into the suites for scoping.

MR. WILBER: Any comments? I would suspect, again just my personal opinion, that the AP would have no issue with expanding the boundaries provided that the habitat is present in the expansion areas, and that we are pretty comfortable with the documentation of that; just throwing that out as a general statement.

AP MEMBER: I will just make a comment that my guess is that this is something that we should get use to; because as more mapping is done, I presume we are going to find more and more deep coral habitat.

MR. WILBER: Another question that I would pose along these lines is the way it is phrased, it is phrased as a Coral HAPC, and then I presume that the actual mechanics of the expansion would also invoke the language to make it an EFH-HAPC so we don't ever find ourselves in the situation again of having something designated a Coral HAPC but not an EFH-HAPC in creating that regulatory ambiguity about that difference; is that right?

MR. PUGLIESE: Yes, and actually I guess we could talk to some of the legal people, because right now the designations, once the bounds are put in place, the way the designation is moving forward, it is by name. I am not sure it is necessary – it is not going into the rule the EFH-HAPC designations under CE-BA 2. So just say if that did move forward to CE-BA 3, just clarifying that while the Cape Lookout HAPC-CHAPC is EFH-HAPC, this expansion essentially is also covered. What you are doing is you are expanding a designation that already exists, so just clarifying it in the record I think is going to be important within that document.

I don't think it is going to be as significant because you have taken the broader area already. It is like the Stetson-Miami Terrace HAPC; that will be a modification clarification. Then within the record building the case, you can also identify that I would assume, but this is something that we need to make sure.

I think that is the important point Pace is making; what you don't want to do is create something and then end up in the same place where you have a piece that is not also being looked at as a

significant EFH area, because that is where you get into some of the ability to get into the permitting review process more effectively by having the HAPC designation, also.

MR. WILBER: It would be feasible the next time the AP meets that we actually have maps and boundary coordinates for these expansion areas; is the information moving along fast enough to do that?

MR. PUGLIESE: Yes, if the council does look at this as for potential, I would assume there is going to be something that is going to be on the table for the scoping meetings in January/ February. We have got the buildings of potentially what the proposals are; and if they endorse those, we are going to have to at least look at the information that is available, other information that may be available in habitat on fishery operations for those scoping meetings in the future.

Of course, that would be the first level before it even goes to public hearing. Remember, the intent here is just to go to scoping. You would look at public hearings in the middle of next year for any action that the council may be deliberating. I would assume by that point we are going to have a lot more amassed in terms of habitat distribution, on characterization or maybe even refinement of some of those proposals.

MR. WILBER: Anything further to add to this bullet? All right, I am kind of sensing people are looking for a break time; you know we have been at it for about 90 minutes. We will take a break for 15 minutes.

MR. WILBER: Okay so the last three bullets that were in the potential CE-BA 3 issues all dealt with – well, the Bullets 4 and 5 dealt with wreckfish. The first one that we need to discuss is the consideration of expansion of the Snowy Wreck MPA. Roger, just refresh our memories on what exactly was being pondered there.

MR. PUGLIESE: There had been discussion about the Snowy Wreck MPA and the possibility there had been new work and identification of a new deepwater wreck and potentially they could expand the wreck to cover – the MPA to cover that new area. In addition, there had been some information that in the deeper section of the MPA there may be lophelia coral. At the deliberations with the Coral AP there was no specific recommendation other than the need to move forward with additional work, research characterization to really define the extent of the habitat within those areas, the coral within the area, and potentially how that whole wreck associates with the rest of the MPA. That is where that stands right now at least with the most recent input on the Snowy Wreck MPA.

MR. WILBER: Do you have a map just to remind us all where the Snowy Wreck MPA is located?

AP MEMBER: Roger, do you know if the lophelia was growing on the wreck or is there hard structure within the MPA?

MR. PUGLIESE: I think may have been on part of the – well, no, actually I think it is on the southern portion of the MPA, on probably hard bottom area.

AP MEMBER: I would be really interested to see the mapping results of that. My understanding before from conversations with Steve Ross, and I don't know if this was based on some mapping work he had done before, that MPA area was almost entirely sand except for the wreck itself. It would be great to learn more about that.

MR. PUGLIESE: That is the Snowy Wreck MPA, so you can see its relationship to Wilmington, et cetera, offshore. You are looking at it occurring mainly between, say 100, a little less than 100 meters and probably 300. Mid portion of it is at about 200 meters. You are getting into some deeper edges right on the outside deeper section of the snowy.

AP MEMBER: Mr. Chairman, from what I recall, when we were talking about making the Snowy Grouper Wreck an MPA, Michelle Duval, who is not here, told me that there were me areas neighboring to the MPA, and I don't recall that, that might have been actually a better than a sand bottom to include in the MPA. I would like to see – we probably need to look at that and get Michelle involved in this as well. I would like to see more information about this.

MR. WILBER: Okay, so we take that as an action item for Roger and myself to pull that information together and find a mechanism to either share it with the committee in advance of the next meeting or at the next AP meeting.

DR. REICHERT: I just want to mention that we have started monitoring the Snowy Wreck MPA for snapper grouper species. That wasn't sampled very often by MARMAP; but with the increase in efforts and SEFIS, we were able to start sampling the MPAs a little more. A couple years from now we will probably have a good idea what that does in terms of populations within the MPAs and outside the MPAs in nearby areas.

MR. WILBER: All right moving on to the next bullet, the wreckfish fishery impacts, the deepwater coral habitat; it sounds like a gear restriction.

MR. PUGLIESE: Yes, and as I indicated, unless other members have any other information right now, it started out as an information need and a research need from its original plan through CE-BA 1. As far as I know there still isn't any other detailed video or information document and any kind of impacts right now. As it stands, CE-BA 1 does identify it technically as a non-bottom tending gear, because it is elevated from the bottom in the way it is fished, but unknown quantity of what it does relative to the ledges or other habitats.

MR. KELLISON: Roger, are you familiar with the gear or is anyone in here familiar with the wreckfish gear, like how it is fished? I know that if you said heavy weights, some of those areas are high current areas. I know the same is true for the deep-dropping, which is that last bullet. A question is he said it is fished off the bottom, but how is that determine when it is close to the bottom; like how do people avoid – I would assume that they would maybe just drop it to the bottom and then pick it up off the bottom.

DR. REICHERT: I think that is correct is the heavy weights, that they drop to the bottom. I think the time those weights are on the bottom is relatively short, so they pull them up immediately.

MR. KELLISON: Right, so it seems that the potential impact would be the impact. Right, it would be a point-source impact.

MR. WILBER: Further comments? This looks like Roger said an information-gathering exercise I guess rather then something really on the verge of maturing into a proposed action. We move on to the next bullet.

DR. REICHERT: I have one question, and I am not sure what the procedures are within the Habitat AP, but I think it would be very strong if there is a research recommendation from the AP to get some information on that. I am not sure whether that was done already, but that may help with the research efforts.

MR. WILBER: Okay, so Terry seconded Marcel's motion.

DR. REICHERT: I am not an AP member, so I am not sure if I can make a motion.

MR. WILBER: Terry is going to make the motion.

AP MEMBER: I make that a research priority.

MR. WILBER: Is there a second from someone?

MR. GEER: I'll second it.

MR. WILBER: Thank you, Pat. Okay, any discussion of the motion that we should make a research priority the examination of wreckfish fishery impacts to deepwater coral?

MS. DREVENAK: Can we widen that to include deep-dropping as well. I don't know how similar the methodologies are, but it seems like as long as we are making that recommendation we could expand it a bit?

MR. WILBER: Terry, it is your motion; do you agree?

AP MEMBER: Agreed.

MR. DUREN: I think through this investigation is a good idea. I am curious how; would it involve rovers or how would we collect the information?

DR. REICHERT: I think the current idea is to attach cameras on the lines and document what happens at the bottom when the gear hits the bottom or if the gear hits the bottom. I think that is the current thinking about how best to do this.

MR. PUGLIESE: Yes, and on the wreckfish fishery that is going to be more straightforward because you are talking about using a 50-pound weight and it is pretty significant gear. They can drop down deep-dropping maybe a couple pounds or upwards of even more than that but nothing remotely close to that.

Plus, I don't think you are going to be dropping video cameras down on a standard deep-drop. It may have to be some type of a different avenue of trying to accomplish that. I think the wreckfish is definitely more straightforward in terms of trying to apply the technology to get the information.

MS. DEATON: I just had a question. Do they anchor; are they anchored out there?

MR. PUGLIESE: Neither one do they anchor on.

MR. WILBER: Okay, so are we ready to take a vote on making this a research priority or recommending it as a research priority to the council? **All in favor; those opposed. Seeing none, another unanimous vote here.** That probably takes care of the last bullet, too. The next issue – we went through the six bullets that Roger brought to the table for consideration in CE-BA 3.

Now the next is are there additional things that CE-BA 3 might want to contain, whether those are fishery management type recommendations or EFH recommendations; anything we feel that the current suite of regulations and EFH designations are not currently accomplishing that we could improve upon.

MS. DREVENAK: Yes, I would like to see some actions on forage fish as part of an EFH designation or a more general policy that the council would make. I think there has been a lot of action at the SSC on a national level in that direction, and I am not sure if it is totally ripe for action, but I would like to see us scope it.

MR. WILBER: Okay, this is not the first time this subject has come up. I will provide a little bit of background. It is the opinion of the legal counsel in the Southeast Regional Office of NOAA Fisheries that we cannot designate EFH for forage fish because forage fish themselves are not federally managed species. The backdoor way into doing that is that the quality or the level of service that various essential fish habitats provide to federally managed species is dependent upon the amount of forage fish inside those essential fish habitats.

For example, shad is not a federally managed fishery species. We can't designate EFH for shad, but the amounts of young shad hanging out in estuaries and are available as food certainly affects the services that estuarine EFH provides to the federally managed species. That is partly how we kind of hang some of this stuff on these non-managed species.

Whatever the AP wants to recommend is what the AP wants to recommend, but my personal view would be that pursuing this as an EFH designation would kind of lead us into those same old legal walls we hit before, but pursuing it as some sort of a policy document might be a wonderful thing to do. Exactly what that policy document might say is something we can talk about. Any other comments on that proposal?

MR. DUREN: The ASMFC has ongoing active programs to reduce harvest of shad, river herring, and menhaden, and they are being fairly aggressive at trying to improve management of those forage fishes. I think it is really good. I have been thinking how do we find a place to

hang something habitat related on that? I can't see how to do it, but certainly there is a substantial emphasis right now on doing a better job with management of the forage fish, which is good.

MR. WILBER: Yes, I will just bring up for those who might be unaware of it, but there has been a petition – and I forgot the name of the NGO group that did it – to the Fisheries Service to list blueback herring and alewives as protected under the Endangered Species Act. The Fisheries Service has agreed to look at that fairly carefully.

Now my crystal ball is not nearly good enough to tell you what the outcome of that might be, but it is a fairly interesting proposal. It is getting a little bit more serious consideration than a lot of those proposals that are made to the Fisheries Service. Coincident with that is also the Fish and Wildlife Service is now reexamining its two-year-old or three-year-old determination not to list American eel to determine if that was actually the correct decision and whether they should be protecting American eel as well.

It may be that a couple years from now through the Endangered Species Act and the critical habitat designations that usually are accompanying an ESA designation or ESA protection, we might be getting blueback herring and alewives and American eel. With a pending final decision on Atlantic sturgeon and already having shortnose sturgeon, a lot of the diadromous fish will already kind of be covered through another avenue.

AP MEMBER: I would like to respond to John's comment about ASMFC and other states. The fact that river herring are even being considered as coming under the ESA as an endangered species is an embarrassment to the states and ASMFC. The fact that they are finally getting into it, I wouldn't give them credit for that.

MS. DEATON: For ideas to consider for scoping, I feel like more information is needed on the nearshore hard bottom use by the snapper grouper species, because in general we say it is the secondary nursery habitat and nursery habitat, a lot of these, but we don't have any details on how much they use them or which species use them. They are the most threatened by beach nourishment activities at least in our state. I don't know how to word that but I think we need more information on pinning that down.

MR. WILBER: I think that is an excellent thing to throw into the list. Terry.

MR. GIBSON: Anne you just tickled the cockles of my heart. I have sued those people a number of times, and I am going to again as soon as possible. Ken Lindeman, he had a lot to do with the EFH regulations, and several other scientists just did an incredibly robust study of what lives there when at what age and why. They did it for the Florida Department of Environmental Protection. If you don't have that document, I can give it to you.

MS. DEATON: But also that is off of Florida, but off of North Carolina and maybe Georgia and South Carolina, too, we need that type of information, but I haven't seen that yet.

MR. PUGLIESE: Yes, to that specifically, the material you are talking about with Ken and a lot of that went directly into the FEP, and a lot of it was also guiding some of the policy work on sand removal because of the nearshore hard bottom designation. We specifically designated those nearshore hard bottoms off of Florida because of the critical life stages for grunt and snappers that that provided. I think that was excellent information on that, but again it gets to this point that we don't have that level of information for some of the other states in our region, because it is at some of the most critical areas.

MS. DEATON: And there is zero visibility usually.

DR. REICHERT: Just a point of clarification, although it may already be defined, it is probably going to be good to define what nearshore is especially if this leads to research recommendations or monitoring recommendations.

MR. WILBER: Along those lines not only would nearshore benefit from being clarified but also the amount of relief would help in clarification as well, because much of the nearshore hard bottom in Florida is relatively low relief hard bottom. A lot of discussion occurs over the frequency of its emergence and burial and how that affects its potential value and whether eroding shorelines mean that we have more of this nearshore hard bottom than what we have had in the past and all kinds of stuff.

Just as a personal anecdote, I did beach nourishment permitting 25 years ago when I first got out of college, and I am doing beach nourishment permitting on the same projects now and it is the same issues 25 years later. It would be really nice if some really focused research kind of clarified some of this stuff. Okay, any other issues that folks would like to see go into scoping for CE-BA 3? Have we got all of the HAPCs we possibly need, every darned creek?

DR. ELKINS: I know this may be a little out of the realm of our purview but snapper grouper, especially gag, they are found inshore in estuaries. Is there some way that we can touch upon that for inshore protection of habitat or is that untouchable by this group? I am speaking of oyster reefs and that kind of –

MR. PUGLIESE: Those are a part of the essential fish habitat designations, and I think one of the most powerful things we have in our region is the fact you have a species like gag that use oyster reefs in North Carolina or in South Carolina and Georgia as settlement zones, sea grasses in North Carolina and Florida, all those become part of its critical life stages. I think routinely those species are identified in the EFH consultations and comments. It is not only important but I think it is pretty critical to emphasize.

DR. REICHERT: Just for your information, under SEAMAP we are monitoring gag ingress in those creeks in collaboration with North Carolina Commission and Georgia DNR, in North Carolina, South Carolina and Georgia, and we have done it for a number of years. There is a monitoring program in place to look at the ingress of gag juveniles and larvae in a number of estuaries. I think the current number is eight or ten estuaries.

MR. WILBER: To follow up on Chris's comment, generally speaking in the fishery management plans for the South Atlantic they tend to designate EFH aggregating across life history stages; and in the case of the multi-species fishery management plans by aggregating across species.

Sometimes an inadvertent consequence of that multiple levels of aggregation is that some really important habitat species associations, individual species associations that are particularly well documented and particularly well known kind of slip through the cracks a little bit. There are some parts of the EFH designation that does call out a specific habitat for a particular species.

One thing that could be done under the snapper grouper designation is to call out some of those specific estuarine dependencies for particular species like gag. That is something that would be within the character of what is done across the other designations.

MR. PUGLIESE: Actually, there are some specific cases where we did it with – I think it was Spanish mackerel where we had some more detailed information about locational distribution from I think the original ESI work in Georgia potentially. We have done that and I think as the information is available it is well within the purview to add those types of various species specific as I think it gives it even more power. You can fold that into – even though you have those designations, it can be part of the overall designation, add that in just like you are adding individual state designation or any refinements that we are able to collect.

AP MEMBER: Well, if the information is available, which it appears it is, I certainly think that we need to have that in front of us so if necessary future actions can be made upon it and make an informed decision.

MR. WILBER: Okay, so do we want to take that as sort of an action item to continue to explore that or are we ready to even maybe go up a notch as an AP and recommend that that be part of the scoping for CE-BA 3?

MS. DEATON: Okay, I will make a motion that we support that research as a priority research.

MR. WILBER: Okay, you all know what comes next, right, somebody has to second it. There we go. All right, let's make sure we have the language right on that, Anne. Maybe after research, insert "and EFH designations"; is that okay, Anne? It's your motion.

MS. DEATON: Okay, so are you including the hard bottom part above it or are we just doing it in general?

MR. WILBER: I think the way the conversation has kind of moved is that we had kind of gotten past the hard bottom discussion and moved into this, but if you wish to amend that to include the hard bottom we certainly can do that. That is what it might look like.

MS. DEATON: Yes, I think I would say particularly nearshore hard bottom or something like that because to me that is a big gap for the snapper grouper complex, so that is good.

MR. PUGLIESE: Yes, and it parallels exactly what we did with the nearshore hard bottoms off Florida. We are kind of crystallizing down to what the intent was.

MR. WILBER: Okay, so this is our recommendation?

MS. DREVENAK: I wonder if in addition to this it might be helpful – I mean, it would be for me if the next time we meet if we could, I don't know, have a presentation about the science that exists on this issue and what the possible actions are. It seems like there is a lot of interest in this area and I certainly think this AP it's within our realm.

MR. PUGLIESE: Yes, getting to that, I think one of the directives that came out of the EFH review was to begin building species-specific habitat information. I think we have already initiated work with FWRI in the state of Florida to begin building an eco-species module.

I think what we are trying to do is build on information that we have from the habitat plan that went into the updated fishery ecosystem plan then ultimately into an interactive system for individual species, refining habitat, and then also creating as part of that process – I didn't even get a chance to touch really into the details of it – individual species characterizations that are going to be done. The first one Florida is going to be doing is red snapper to develop in advance of the next stock assessment.

The idea is it is going to get similar to what was done for individual species in other regions but to get to this, and that may be the feeder that really does give you some more specific areas and locations. There is real opportunity to address exactly what we are talking about. I think we are going right down that road right now to get more information because it is going to be useful.

MR. WILBER: Okay, so we have the motion to support research and EFH designation of habitats associated with specific species use of estuarine, nearshore hard bottom or other habitats. Do we have a second on that? Thank you, Terry. If no further discussion all in favor; any opposed? Three in a row; that is great.

Okay any other items we want to take to scoping? I will throw out a really crazy one just to see if people are paying attention this late in the morning. We are hearing more and more proposals now from the Corps of Engineers to build these multimillion cubic yard silty sand berms offshore and describing those as fishery habitat.

They proposed it for a Savannah Harbor Expansion Project, they are considering it for the Charleston Harbor Deepening Project. Similar berms like this exist in the Gulf of Mexico and up around Chesapeake Bay. Does anyone have anyone have any feelings on those types of activities? Should we be supporting those kinds of things, opposing them, opposing them to the point that we want policy statements or are they wonderful things that we should designate as essential fish habitat? They are constructed out of what most people would call spoil.

DR. REICHERT: What do other people call them?

MR. PUGLIESE: Let me jump in there real quick, because this is not a new issue because I think we addressed some of this when there was that whole effort in Georgetown on creation of habitats from spoil banks and trying to build systems. I know we have touched on some of it in one of the policy statements, so that is an avenue to refine this, especially as more and more are coming online and being touted as habitat efforts.

AP MEMBER: Just out of curiosity, Roger, having not been here at that point, what was the Habitat Advisory Panel's stance back then when you addressed it originally?

MR. PUGLIESE: I think we were to a great degree opposing some of those efforts originally, and I think that guided some of the policy statements because there was other – I think part of it had to do with potential re-suspension of bad materials in the areas plus the success rates that may occur on creation of some of these habitats if they actually were successful or if they basically just eroded away.

There were some of those original discussions in some of the early efforts that were done and concerns about moving sand sources in areas that may be highly dynamic or spawning locations or different things in inlet mouths and different places that might be really potentially a lot more damaging than people would understand.

Just trying to dig back into some of the initial discussions, I think we can go back into the policy statements and work its way back to see where that might be worthwhile reinvestigating because it was a big issue. Especially if a lot more is going to be done, it is probably something that at least should be resurfaced to clarify some of this.

MS. DEATON: Yes, I was going to say at the very least it should be site-specific. I know some of the berms in the Gulf, a major one is causing severe seagrass die-off, which we certainly don't want.

AP MEMBER: I would say is it EFH; absolutely not. Should we support it; I don't. If you are going to call them a habitat, you have to start looking at artificial reefs as well. It is an artificial material that you are artificially creating something. I think over time at least in Savannah we felt that it was going to dissipate and you aren't going to have these structures anymore; the sediment was just going to move. No, I don't support them.

MR. KELLISON: When we are talking about EFH, we are talking about federally managed species, so certainly whether they would be a federal habitat should be a concern but are there any federally managed species that we believe would utilize sand berms as habitat if we created sand berms?

MR. WILBER: I believe the limited research that has been done of the one off in the Gulf of Mexico showed that red snapper hang out there. They look at how the eddies slough off of the berm and create little feeding areas for red snapper.

MR. KELLISON: That does make sense, I guess, and perhaps we don't know that much about red snapper, the smaller juveniles, because I know in the Gulf the juveniles tend to be associated

with non-structured habitat, so that could be true in the South Atlantic as well and we don't have that information. Unfortunately, that is a big gap.
I would note that last year, 2011, our fish-independent survey group spent some time looking for hard bottom habitats and map off of northeastern Florida, and we used a predicted model that a guy named Daniel Dunn – he was one of Pat Halpin's students at Duke – created. It was up to the model to predict hard bottom distribution based on just a few inputs.

A lot of the places where the model predicted hard bottom distribution, it appeared that there were just basically big sand mounds. We went out and found – this is pretty far offshore, but those habitats do I think appear to exist to a pretty good extent within the South Atlantic, which is interesting to me. In some cases some pretty strong vertical profiles are associated with it.

AP MEMBER: I would just say the policy we need to make sure that the creation of these, if they are going to do them, doesn't damage other well-established essential fish habitat. I can tell you a number of stories starting with yesterday. I was fishing at the river for red fish up around Hilton Head. Those geniuses from Great Lakes Dredging Dock were bringing in their cranes and their dredges in.

The tide was a seven-foot tide yesterday and they put this huge barge right on top of an oyster bed that was submerged. We just sat there and caught red fish after red fish and just waited and watched and drank beer and laughed at them because they were high and dry. But they literally put about 300 feet by 50 feet of barge on top of an oyster bed yesterday. Then they tried to push them off for hours with their tucks.

I can tell you story after story after story in the Southeast Florida Inlet where they have thrown perfectly good beach sand in the inlet somewhere offshore and not put them on the beach. Then they have gone into the Intercoastal and dredged up God knows what in terms of silt and muck and pollution and thrown it on the beach.

I have caught them time and time again falsifying data information. We won one major lawsuit from them doing that. They cannot be trusted, period. They just can't be trusted to just willy-nilly go out and create a sand berm that might provide some ephemeral habitats. I hope that you all would support some fairly strong language, maybe even a letter to the Corps saying that if you think you are going to snowball us, you are crazy.

MS. WENDT: I don't know whether this has been considered before as part of a policy statement, but we might want to broaden that issue to consider all so-called beneficial uses of dredged soil that involves open water disposal of dredge material, whether it is marsh creation or berm creation, but that may be too broad, I don't know.

MR. PUGLIESE: It actually isn't. What I will do is we have got a specific policy statement that was trying to capture a number of these. I remember the original one that came forward and then we expanded that, because I think we may have termed it as like coastal engineering. It was to try to address a whole suite of those.

What I will do is I will make sure – it is available on the website; what I can do is just e-mail what policy statement I am thinking of and then that can be the beginnings of the foundation to address these. I think that is where it is encompassed, at least some of it. It may not address all of the concerns and especially the newer ones that are going on now.

MS. DEATON: I was just going to add that there is a case where the Corps right now is doing a feasibility study looking at Curry Tuck Sound and how to improve habitat work hauling conditions there. Based on their results, it looks like there has been a loss of submerged aquatic vegetation because of primarily vetch.

It is not because of the waters nutrients, which they thought at first it was nutrients, but it elevated suspended sediment, and they are talking about creating possibly these islands out there to be windbreaks to reduce vetch. I mean, there can be positive uses of this at times, so I think the policy needs to be careful not to restrict some beneficial uses as well, to be valid.

MR. PUGLIESE: Yes, I think what we need to take a good look at is this original policy; protection and restoration of essential habitats from beach dredging, filling, and large-scale coastal engineering, because this is getting to beached dredging and fill activities in the coastal zone. I have got to go back and look if it addresses all of the types of areas that we are talking about, because it does get into at least some of the specific activities that we have been talking about, and the zones from inlets to offshore; the way the policy says, if you all are familiar with, tie it back to individual and managed species or complexes.

MR. DUREN: I think one of these marine engineering projects would require not only the Corps to make its assessment and approve the project, but also U.S. Fish and Wildlife Service; and if it is in state waters probably the Department of Natural Resources or whatever is an equivalent body. I am not opposed at all to careful management or regulation of it, but I am just asking how could we do something that would require or lay more management or regulation over the structure that already exists.

AP MEMBER: I think we might be getting lost in regulations here. I think it is good for all of you to realize as scientists what me and Jenks know from personal experience. The natural process of nature dictates what we are going to have. If the Corps is depositing sand or someone is making a development that changes something or in North Carolina PCS Phosphate is going to dig up a creek and go over here and make I don't know how many thousand acres into what was a riverine swamp, they are spending thousands and thousands, hundreds of thousands of dollars to do that and all they had to do was plug the ditches, it would have done it by itself.

I would not support anything that is going to alter what to me is the only way to describe it the natural process of evolution. If Curry Tuck Sound is going to go devoid of vegetation as it once was, so be it. I fished in Albemarle Sound without vegetation; I fished in Albemarle Sound when vegetation is as thick as that table. I caught more fish with none. When we decide to oppose a Corps position, I think we would be on solid ground by saying we intend to perpetuate the species as best we can through our management and through manipulation of processes that affect the natural order of things.

MR. MIKELL: I am curious; does it make any difference whether the berms are parallel or perpendicular to the beach?

MR. WILBER: My understanding is that when the Corps intentionally builds these mega million cubic yard berms, that they do extensive engineering and modeling studies to investigate the permanence of the berm and to investigate how it interacts with the currents to try and see if they can visualize those eddies and other things that might attract fish-feeding areas.

They generally are parallel to the beach, but I wouldn't say that – to my knowledge I would not say that they have ruled out a perpendicular berm. But the ones that I have seen constructed and the plans for the ones that I have seen that were not constructed, all were parallel to the beach.

MR. MIKELL: Well, that would be like when you look at the Mississippi Delta or Charleston Harbor and the Washington Folly Beach, all those things were Corps engineered. I just think they need to have some restrictions or some eyeballs watching them from time to time.

AP MEMBER: I just want to address Mr. Duren's concerns. I guess it is not really within the authority, if I understand the law right, for us to create regulations, but we can create support for regulations. I have been in a number of these fights where the council has sent letters and it has helped to bolster NMFS and NOAA's opposition to bad projects.

Theoretically, although I have never been involved in having to support a good project that was using beneficial spoil where there were any questions about whether it was beneficial or not, we had to do that in two cases in the Lake Worth Lagoon where we used spoil off of a spoil island to create marshes, and they were wonderful things. But it gives NOAA some backup, some reserve for us to tell the Corps, hey, I am going to elevate this if you continue to be dishonest or overstate the benefits of this or whatever they typically do.

MR. WILBER: Okay, just to put a little wrap on this – I didn't intend the conversation to go this long – was we do know that the Corps of Engineers, Charleston District, is considering these options for the spoil disposal for the deepening of Charleston Harbor. There are a few of us in the room that are part of the working groups that the Charleston Corps of Engineers has put together to kind of further flesh out how the deepening of the harbor might go.

So we now understand what the general consensus of the advisory panel is about whether it is a smart idea to build a 5 million or a 10 million cubic yard berm off the entrance of Charleston Harbor, I think that is valuable to have. Roger and I will take as an action item going back to that 2003 policy statement to see if there is any augmentation of that that might be feasible to kind of maybe solidify that kind of feeling that was expressed today; and if so, we will make a motion to do that at the next AP meeting.

MR. MIKELL: Let me ask you one more question. What is wrong with the spoil area they used for the last dredging?

MR. WILBER: Again, keep in mind that the Charleston Project is still in its infancy so we don't really know exactly how it is going to flesh out; but when they deepen to 50 or so feet they are

going to have to extend the entrance channel seaward to get to the 50-foot contour. The Corps is looking at options that don't require them to move that material all that far.

If they can create some kind of big berm adjacent to that newly constructed channel and orient that berm in a way that they believe it will act as fishery habitat, then they have some incentives in their process to pursue that option. Of course, if we don't agree that it would provide that fishery habitat value, then actually the Corps will probably pretty quickly stop pursuing that option, as Pat could probably attest. Once the opposition to that proposal happened down in Savannah, it got taken off the table very quickly.

MR. DUREN: This is just for our information or maybe if we are going to investigate we can add it to the list of things to look at, but there is a marine engineering company that has been promoting and has actually built several berms out of basically plastic fiber super sacks filled with sand. By putting the sand in the bag and then placing them out in front of the beaches there, their hope is that they will last longer and not be eroded by the current. If we are going to look at artificial berms, we probably ought to look at that method of creating them as well.

AP MEMBER: I have seen that done with those bags and as quickly as they could fill them, the currents washed around the bags and pretty much washed them away. That was behind Ocracoke Inlet in Big Foot Slough, a half a million dollar project that lasted about a month.

MR. WILBER: Any other items folks want to throw onto the table for discussion in CE-BA 3? If there aren't any, we can break for lunch and resume at one o'clock.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Charleston Marriott Hotel, Charleston, South Carolina, Tuesday afternoon, November 15, 2011, and was called to order at 1:00 o'clock p.m. by Chairman Pace Wilber.

MR. WILBER: We've got some information about ongoing mapping efforts at both the federal and at the state levels. The goal here and what the subject of our discussion at the end of this afternoon's session will be to advise the council on any critical gaps we see in these mapping efforts. Gaps would be something that should be mapped that apparently is not getting mapped, but would be important to have mapped or maybe to identify some technical comments or some technical leverages or synergies between these mapping efforts. The first of these presentations is going to be from our colleagues at the Navy.

Each of these presentations should be about 30 minutes long including questions, right, so we can stay on task. While we are waiting for the projector to turn on, I will tell you what I know about Carter. He is a mathematician at heart. He used to send me these comment letters that were full of equations and statistical probabilities and stuff like that.

I didn't really understand any of it, but David McDuffie, who was his colleague from the Norfolk Office of Atlantic Fleet Forces Command, assured me everything was okay, the Navy has got it under control, not to worry about it. That was good enough for us so we just signed off, so that was it.

MR. WATTERSON: I have worked with several of the people in this room in the past, but for those of you that don't know me my name is Carter Watterson. I currently work for the Naval Facility Engineering Command, which is a component of the U.S. Department of the Navy. Two years ago at this same meeting Dave McDuffie and I were here and Dave gave a presentation on at that time the Navy's upcoming bottom mapping efforts that were going to take place off the coast of Florida.

As we promised at that time we have come back today to give a presentation on what the results of those bottom mapping efforts were. We were concerned primarily with two different areas off the coast of Florida, off the east coast of Florida where we went out to collect hydrographic and groundtruthing data.

The first was the Undersea Warfare Training Range. Now this range is not currently there; it has been proposed. The final EIS or the EIS has been finalized and we are in the process of designing the range, and implementation of that range will probably begin within the next couple of years.

The intent of that range is to be used for anti-submarine warfare exercises and will consist of approximately 300 different nodes placed on the bottom throughout the range. Now these nodes are passive acoustic detectors, and they can monitor the ships and submarines operating in the area during an exercise and basically play back the exercise for those operators following the exercise and give them an idea of how they did.

Now between each of these nodes there are going to be interconnecting cables, and some of these cables depending on the area will likely have to be buried to prevent disruption particularly in areas where there is fishing such as trawling. The second area we surveyed was what is known as the Charlie-Charlie Gunnery Range, and this range has been used for the past several decades for training with non-explosive practice munitions and high-explosive ordinance.

As you can see here this is a map of the East Coast and Gulf of Mexico and all these little red outlined areas along the coast represent different operating areas that the Navy currently uses for training and testing exercises. On the east coast, the very southernmost operating area there is what is known as the Jacksonville Operating Area.

As I mentioned, the two areas we surveyed are located within that. The blue area is the proposed Undersea Warfare Training Range. The line connecting the range to the shore is a corridor that was called the Trunk Cable Corridor. This corridor will actually contain a cable running from the shoreline facility at Naval Station Mayport out to the range itself. This area has also been surveyed, but we only recently got the results of that and it won't be included in this presentation. Just to the north of that you can see the three ranges together.

Those are what the Navy calls Alfa-Alfa, Bravo-Bravo, and Charlie-Charlie. Those are three gunnery boxes that have been used for the past several decades. The one that tends to be most heavily used is the one to the furthest east, which is the Charlie-Charlie range. We decided to do the survey within that range and try to determine basically what type of habitats are present

within that range and what level of noticeable impact we have had on that range over the past several decades of use.

Normally we wouldn't have been able to do the survey of the Charlie-Charlie range, but because we were already doing the survey, we were able to leverage a lot of the same equipment and vessel time. By doing the two concurrently, it enabled us to be able to do so. There are a lot of different things we have to take into account when operating down off the coast of Florida, particularly in this area. The first is the right whale critical habitat that occurs along the shoreline. This critical habitat is for right whales that are typically calving down in this area during the winter months.

Also, along the continental shelf there is a series of artificial reefs and areas designated for artificial reef development. The little green dots represent artificial reefs that are already out there. A lot of these belong to the state of Florida. The little light green boxes you see are areas that have been permitted for artificial reef development by the city of Jacksonville. As you can see, the little kink we have in the Trunk Cable Corridor we had to put in there to avoid impacting any of these artificial reefs that are currently out there or proposed to be out there in the future.

We also have a lot of potential live hard bottom that occurs off the coast. Now this data is actually SEAMAP data that we were able to get off of the South Atlantic Fishery Management Council EFH Website. I guess Roger can probably explain this better than I can. Back when they originally started doing mapping, this was one of the areas where they originally thought the lophelia distribution, the extent of the lophelia distribution was, but it was never officially designated.

Then as we were in the process of finalizing our environmental impact statement for the Undersea Warfare Training Range, about two years ago the National Marine Fishery Service and South Atlantic Fishery Management Council actually finalized their marine protected areas. It just so happens that the North Florida Marine Protected Area falls nice and neatly right in the northeast quadrant of our Undersea Warfare Training Range. In addition to that, just last year the council and National Marine Fishery Service designated the Deep Sea Coral Habitat Area of Particular Concern.

The western boundary of that Habitat Area of Particular Concern lies just to the east of our proposed Undersea Warfare Training Range, and it actually coincides with the eastern portion of the Charlie-Charlie range. To give you a little more information about the ranges themselves, the Undersea Warfare Training Range will be approximately 500 square nautical miles in size.

During the survey we also added in a 200 square nautical mile buffer to the southern end of the range that was surveyed in case for some reason we needed to move the range further south to give us a little Flexibility. The survey itself was conducted from December 2009 to May 2010. The survey components that were used – and remember the intent of the survey was to gain some information about the different types of habitats and bathymetry within the range to enable the navy to plan out the design and development of the range itself.

The different survey components that were used for this was multibeam sonar to collect the bathymetry data; a sub bottom profiler, which gives you information on sediment thickness; a high-resolution video collected with a remotely operated vehicle, or an ROV; benthic cores and bottom grabs.
Now for the Charlie-Charlie Gunnery Range this box, as I showed you previously is a little to the northeast of the proposed Undersea Warfare Training Range, has approximately 220 square nautical miles. The survey dates coincided with that of the Undersea Warfare Training Range. For this particular survey all we were interested in really was determining what types of different habitats were out there.

We didn't need all the same level of survey components as used in the Undersea Warfare Training Range. For the Charlie-Charlie range we used multi-beam sonar, high-resolution video and bottom grabs. Just to give you an idea of how this was all configured off the vessel, you can see the sub bottom profiler was mounted in a gondola on the hull of the ship. The net collected a swath of bathymetry data.

At the same time we were also towing off the back of the boat the sub bottom profiler, which is the little yellow thing all the way in the back. This is actually sent an acoustic signal down into the sediments. It got a first reflector at the water sediment interface and then another one further down where it actually hit hard substrate, so that gave you an idea of how deep the sediments are.

During a follow-up groundtruthing survey, we were using off the back of the boat, if you can see that, what we called a sea cast. This was a cage that contained two bottom grabs and a video camera. That was to collect surface sediments. Then we also would deploy a gravity core, which actually penetrated into the sediments and gave us a core of the sediments down to approximately a meter in depth.

Off the side of the vessel we were deploying the remotely operated vehicle. This was actually a tether management system, which I will show you in more detail later. The tether management system, which is essentially a big cage, would be lowered down off the vessel to approximately 50 meters off the bottom and then the ROV would actually be deployed from that.

The ROV was on a 200 meter tether and could be controlled or piloted from the vessel itself. As I mentioned, the multi-beam echo sounders were housed in a gondola on the hull of the ship, as you can see here. We actually used two different multi-beam systems for the survey; Reson SeaBat 7125 for the shallow waters of less than 100 meters, and a Reson 7150 for the deeper waters.

I don't know how well you can see it, but on the right of this slide you can see the results of the bathymetry data that were collected. The red colors represent shallower areas while the blue colors represent deeper areas. The Undersea Warfare Training Range itself encompasses portions of the Continental Shelf, the shelf break and the Continental Slope.

The red areas you see on the map are primarily the entire Continental Shelf. Then the orange area right in the middle that runs down there is actually a ridge system that runs down the center

of the range. That is actually the shelf break. That ridge system is actually composed of high relief rock outcrop. Beyond that it drops off down onto the slope and out in the deeper waters.

The slope as you can see it is fairly flat. Then as you get in the deeper waters you end up with a lot more features, which you can see right off of here. You can see right along the eastern edge of the range you start getting into some mound like features. These are actually deep sea coral mounds.

Just inshore of that you don't actually have mounds, but there is a harder substrate there and you end up with these – I don't know how well you can see it from where you are, but you end up with these furrows that run from the north to the south. We were really curious about what these were so we did some literature investigation.

It actually turns out that they are most likely iceberg scours from back during the ice age. The ones that are documented in the literature previously had only been documented as far south as North Carolina and South Carolina. These actually represent the furthest south these features have been documented.

MR. PACE: Carter, may I ask the relative depths of those – not relative, the actual depth of those, like the deeper areas where the mounds are and the areas where the scours are in there.

MR. WATTERSON: The range itself runs from along the western edge. It is about 33 meters in depth. Then as you get out to the eastern edge of the range it is about 336 meters in depth. Right there where the deep sea coral mounds are is probably around 300 meters.

MR. PACE: And the scours then are probably 250, 200 meters.

MR. WATTERSON: A little less than that, yes and I can give you exact depth later on. I just don't have them with me at the moment. We also collected the same data for the Charlie-Charlie range. As you can see the red represents where the Continental Shelf is. There is a much smaller amount of the Continental Shelf contained within the range.

Again, the orange represents the shelf break, and the ridge system running along there. Then you gradually move off further onto the Continental Slope. Again, in that yellow region you can still see those same furrows. Then once you get off to the deeper waters on the Continental Slope, which are indicated here in blue, you can start seeing a lot of deep sea coral mound formations.

Also I wanted to point out there is a little area all the way to the east, this little piece that sticks out, this is not actually part of the range but we inadvertently collected some of the multi-beam data there when making turns. What we found is there is a ridge line right there just past the edge of our range and it drops off very significantly after that.

We actually provided this information to Andy David at the National Marine Fishery Service so they could go back and further investigate this area in the November survey they did last year that was subsequent to this survey. I forgot to mention the Charlie-Charlie range on the western

boundary is about 40 meters in depth and it runs to a depth of approximately 680 meters on the eastern side.

In addition to the bathymetry data that was collected with the multi-beam, we were also able to collect SeaBat acoustic imagery data with the same system. This data allows us to do additional – it provides us a request line C-4 sediment types in locating sensitive habitat. The brighter areas you see there indicate levels of higher reflectivity seabed.

This is relatively indicative of coarser, harder material, whereas the darker areas indicate sediment such as silts or clays that have a much less level of reflectivity. As you can see on the Continental Shelf, which is there to the left of the map, you get a lot of the medium and coarse sands, which had the high reflectivity. There along the shelf break you get a high reflectivity too.

Once you get beyond that, you can see that it tends to get darker, which indicates different areas of fine sand, silt and clay. Then once you get out to that harder sediment on the eastern side of the range, you end up with the higher reflectivity again. We collected the same sort of data for the Charlie-Charlie range.

This is an example of the sub bottom profiler that was towed behind the boat. Here they are actually in the process of deploying it. The sub bottom profiler data, as I mentioned, allowed us to determine what the sediment depth was at different areas. This aided later on when we were doing the habitat characterizations and determining what the different sediment types in the range were.

In the map itself you can see the yellower areas represent portions of the range where the sediment depth was less than a meter deep and then that extends down to the dark blue areas where it was greater than 5 meters in depth. The gray areas represent areas where we do not have any data and that was the reflector was either at the surface or too deep to record.

Now as part of the groundtruthing survey we used three components on that, as I mentioned. The first was the bottom grabs. As you can see here we have a cage. In the front of that cage on the bottom there are two bottom grabs, and above that was a video camera mounted. This would be lowered down to the seafloor and the video camera allowed us to take still photos and video of the seabeds surrounding where the bottom grabs were taken.

The bottom grabs would be triggered and we would get a sample of the sediment surface. The data that we collected with this helped in the seabed characterization and the groundtruth, the seabed imagery or snippet data and the sub bottom profiling data.

This is an example of one of the sediment samples we got. As you can see we can take the sediment sample, and analyze it further to look at the actual composition. We collected 20 bottom grab samples throughout the Undersea Warfare Training Range. In that picture there you can get a better idea of the setup for what they termed the sea cast.

The two bottom grabs can be seen on the lower front of that and the video cameras mounted above. On the Charlie-Charlie range we had intended to collect several samples as well, but due to adverse weather conditions and time constraints we were only able to collect two samples. We ended up focusing the rest of our time primarily on trying to get the ROV dives in.
We also collected gravity cores. These were collected only in the Undersea Warfare Training Range. As you can see there this consisted of a long metal pole. We lowered it to about a hundred feet off the bottom and then let it go. It penetrated into the sediments. We were able to get a core, which is contained here in a plastic sleeve.

We could then remove that core and section it to look at the differences in the sediments down to typically about three feet. By looking into that, we could determine what the different sediment types were or if there were any layers. Now in the Undersea Warfare Training Range we collected 20 different gravity core samples throughout the range.

The final piece of the groundtruthing survey was the ROV dives. For these dives we are using an Inspection Class Mohican ROV System that was deployed off the side of the boat. You can see it there. That is the tethered management system that was lowered down, and the ROV is actually in the lower portion of that.

During the ROV dives we actually used the similar methodology as the National Marine Fishery Service was using for their dives where we would lower the ROV and collect continuous video footage, but every two minutes we would stop the ROV, angle the camera straight down and take snapshots of the seafloor so then we could use those later on to help characterize the different sediment types.

Within the Undersea Warfare Training Range we conducted 19 ROV dives. As you can see in the picture here on the left, it gives you a better idea of what the ROV looks like. The whole thing is a tether-management system that is lowered down to approximately 50 meters off the bottom, and then the ROV is the little thing below that that actually propels itself out of the cage, starting with the yellow top there and at the bottom you can see the cameras and lights mounted on it.

That has a 200 meter tether then, and it was able to be controlled directly by the pilot on the vessel. We also conducted 12 ROV dives in the Charlie-Charlie Gunnery Range. By combining the ground truthing data with the bathymetry snippet data and sub bottom profiling data that we had collected, we were able to develop these habitat classifications for the range. Within the Undersea Warfare Training Range we identified 9 distinct bottom types, ranging from silt and fine sand up through pavement and rock outcrop.

Now for this first part, I want to draw your attention to the westernmost portion of the range where the Continental Shelf is. This area was composed primarily of different areas of coarse and medium sand. Just to give you some pictures that illustrate what this looked like, these are large expanses of sand; very little fauna encountered. There were the occasional sea pens.

Here is a flounder. As you got closer to the shelf break, you did have areas of pavement. Visually these areas of pavement didn't look a whole lot different than other areas of the shelf

break because the pavement still had a fine veneer of sand over top of it. It is likely that the sand moves northerly along the Continental Shelf; and as it does so these pavement areas that are depicted on this map will get covered up and other areas will get uncovered through time.

Now next we have right down the middle where you have that pink line going through the range, that represents the shelf break, which is high relief rock outcrop. This presented a particular challenge to designing the range layout, because the engineers; one, it is difficult to go through this area where you have a lot of high relief rocks because you don't want suspended cables; and, two, we didn't want to impact that habitat because it is particularly sensitive habitat for a lot of different fish species.

Fortunately we were able to find within the range, right about here we found a gap in the ridge system where there was no high relief rock outcrops that we could run all of the cables through from the western portion of the range onto the eastern portion and not actually interfere with the range itself.

Although it doesn't really show up on here, there is also a much smaller gap to the south that we also identified, although this isn't quite as nice a gap. Along that shelf break you have a lot of varying degrees of attached fauna. This was also the only spot in the range where we identified oculina. In front of the oculina is actually rip coral.

You can see little oculina interspersed with other attached fauna. We also saw large sponge growth through there in addition to a rather healthy population of lionfish. That is I think around about 60 meters. Now once you get beyond the shelf break and get onto the Continental Slope, you can see that the sediment types transition into more of a fine sand, silt or clay. Throughout that region there really wasn't a whole lot of fauna, so it was primarily just sand or silt patches, although we did note throughout this area several tilefish burrows.

As you can see, here is one here. There is the burrow right there and the fish is right in front of it. Here is another image of a different one, with the burrow right here. These were actually found on a dive that was pretty much right here and not far from the shelf breaks. Now once you get over into the eastern portion of the range, the bottom gets harder and you end up getting into these areas of extensive rubble, and as I mentioned, the areas of the furrows, too.

The furrows were interesting formations because you would have sand leading up to either edge of it and then you could go down into the scour, and along either side of the scour you could see where the rocks had been churned up on its sides. Then in the center of the furrow, or the scour it had pretty much been filled in with a layer of fine sediment or sand, so it was just smooth sand at the bottom of those.

This is the type of rubble that you would see in those areas; just scattering of rubble intermixed with typically medium sand or fine silt sand. This one was actually taken from the edge of one of those furrows. Blackbelly rosefish were very prominent along the edges of those furrows, along this rock habitat.

AP MEMBER: Did you take samples of the rubble?

MR. WATTERSON: We did not. Then finally along the eastern edge of the range there is that series of coral mounds that you begin to get into. We surveyed a lot of these coral mounds, and the vast majority of them we found little to no actual live lophelia, although the sediment on most of these coral mounds consisted of dead coral rubble, as you can see on the bottom here.

It also consisted of these larger kinds of coral formations, which were primarily all dead coral at this point, such as here, but they were still used as refuge for fish. Then when we did see lophelia, it typically was in these little small colonies that were sparsely distributed, as you can see here and here.

With a notable exception of two different areas that we observed in two different dives, the first was up here, which actually happens to be in the North Florida Marine Protected Area. We did a dive where we started into silt and worked our way up over this ledge and onto this hard bottom shelf. During that dive, we encountered several lophelia thickets or areas of fairly dense lophelia.

The second was – and I will have to actually correct Roger here – on a previous presentation he attributed the pinnacle down in the southeast portion of the range, which is actually right about here, to the National Marine Fisheries Service. We actually discovered that pinnacle during our survey in May of 2010 and provided the National Marine Fisheries Service with the coordinates for it so they could further investigate it.

We had been working close with Andy David at the Panama City Lab and provided the data to him. That is also where you guys got the imagery that was on the earlier slides. We also found -- at the top of that we have found – and I apologize for the dark picture, but we found a lot of lophelia there as well. The pinnacle in question actually rises about 35 meters above the substrate, and in that particular location there was really no mounds anywhere around it.

It was pretty much a lone pinnacle over a silt bottom. We also found – and I didn't include any slides of it because they actually turned out to be very boring, but there are three sink holes or depressions located in a row down here. We drove the ROV down into these, but there was really no transition in sediment type. It is pretty much all silt; not really any fauna.

We collected similar data for the Charlie-Charlie range and broke this into eight different distinct bottom types that are very similar in nature to what was observed on the Undersea Warfare Training Range. I won't show you any photos from that to save some time. One of the purposes particularly in the Charlie-Charlie range was to try to determine in a range that has been used for several decades what kind of impact the military's use of this range has attributed to it.

In the Use Witter Range we found only a single example of a military expended material, which was this one right here, which is an MK058 smoke float. This was actually found right along the eastern edge of the boundary in the darker blue area, in an area of coral rubble. You can see on the bottom all around this smoke float there is coral rubble.

You can see the smoke float itself if you look at it from another angle. It actually has a series of sea anemones that are growing on it. They have colonized this smoke float and are using it as a substrate for growth. You see there is actually a lot more anemones on the smoke float itself then there are in the surrounding coral rubble.
If you notice they are all typically on one side of the smoke float. That is the side that was facing to the south because this area is in the Gulf Stream, so that is where all the nutrients are coming from and the current flow. If you zoom in, you can actually still read the end of the smoke float. Here is a different example. This was up in the Charlie-Charlie range.

Out of all the surveys we did in the Charlie-Charlie range, we only found three different pieces of military-expended materials. This particular one is a 76 millimeter cartridge casing. The projectile that was originally in this would be further down the range. If you zoom in, you can actually still read the writing on the side of the canister. This particular one was what they call blind loading plug. It was a non-explosive practice munitions.

It had actually blackbelly rosefish, of which you can see one here, are very highly structure oriented. They are typically not found over the open bottom; they like some kind of habitat or structure. This particular one had adopted this casing. As we drove by and disturbed it, it swept right into the casing for protection.

We did encounter several – in just about all our dives we encountered different levels of marine debris. All of it was non-military related. We found extension cords, fishing lines, metal bands from barrels. I put these last two slides in just to give you some idea. The fate of marine debris in the environment really depends on the type of environment or the type of habitat it falls onto.

We found this on the southern portion of the ridge system in the range. It is non-military; we are not sure what it is. It appears to be made of metal, some type of platform. It was sitting on the high relief rock outcrops. You can see it has obviously been there for a while and it has pretty much been colonized by whatever the dominant forms of fauna were in the area and to the point where it is almost indistinguishable from the surrounding environment.

Whereas we also have something like this, this was found in the deeper waters on the Continental Slope in the Charlie-Charlie range. This is an area that gets very little disturbance. There is very little to no attached fauna in this area at all. We found what turned out to be a coffee mug sitting on the bottom. It actually looks like it was dropped there yesterday. If you zoom in, you can actually still read the writing on the bottom of the mug.

It says Grace Line. Well, Dave McDuffie did a little research and found out that Grace Line, which is also known as R.W. Grace and Company, was a passenger steamship company based out of New York that was in operation from 1882 to 1969, so that mug has probably been down there a minimum of 40 years, and it looks like it fell over yesterday. I just wanted to draw your attention to the fate of these different things when they fall in different types of environments. That is pretty much all I have if anybody has any questions. Yes.

MR. WILBER: That was a really nice presentation, Carter. Is it safe to say that aside from the CC Box and the Use Witter Box, I think you called it, that the only additional information that might be available is that line to the shore?

(Answer given off the record)

MR. WILBER: But that is sort of it for the South Atlantic, but at least you would have to kill me if you told me that there is additional stuff. Okay, all right, thank you.

DR. REICHERT: Have you guys ever looked at fish populations? I think besides giving a lot of information on habitat, I think it could potentially be a great source for looking at populations of fish. You mentioned a healthy population of lionfish. Have you guys looked at any of the other species that were on your videos or cameras?

MR. WATTERSON: We actually have an entire list of all the species we observed on each of the dives. We have a data base that we can make available.

DR. REICHERT: I think that could probably be very valuable for stock assessments.

MR. WATTERSON: Absolutely. We also, on the Charlie-Charlie range, I don't know how many of you are familiar with the Golden Crab Essential Fish Habitat Designations, but there is pretty much seven distinct habitats that are designated as essential fish habitat, ranging from a whole variety of different sediment types. We have pretty much got different snapshots and pictures of a lot of those different habitats that we can make available.

MR. WILBER: Thank you. We're ready for our next presentation from Marcel.

MR. KELLISON: Marcel, will you let me go next just because some of that stuff in my talk dovetails with Carter's. It actually might be a more natural order if we talk about habitat stuff first.

MR. WILBER: An on-the-fly correction to the agenda, we have Todd now speaking.

MR. PUGLIESE: I would like to again thank Carter for the excellent presentation, and also welcome him as the newest AP member, because he formally is a member of the Habitat Advisory Panel. I think it shows the commitment of the Navy to really be at the table and provide and collaborate on a lot of the good work we are doing.

MR. WILBER: Just one thing while Todd is getting his presentation ready, I am going to pass around the sign-up sheet, around the table; so if you haven't actually signed in yet, please do so. I know the council is anxious to have a complete record.

DR. REICHERT: I also e-mailed the Ziskin Paper about speckled hind to Roger so he can share that with you guys. I think I already e-mailed it to Terry.

MR. KELLISON: Okay, good afternoon everyone and sorry for the upheaval there. I just thought given what I had planned to talk about in this presentation, it seemed like it might dovetail a little bit with what Carter just talked about. It seems like it might actually provide a nice maybe intro to what Marcel is going to talk about.

Roger had asked me to put together a presentation about Habitat Mapping and Ecosystem Research in South Atlantic waters. I have kind of just narrowed it to habitat mapping, but I will talk a little bit about the implications for ecosystem research. Part of the reason for that was just in the interest of time if what I was going to cover. I didn't want to take up too much time.

I've put a lot of names up here, and these are all people that have contributed to the information in this presentation. I will go ahead and warn you that there is not a bunch of good pictures like Carter has. One other note that I will have about the title, I put habitat in parentheses. The mapping work that I will talk about is really acoustic mapping, mostly multi-beam. I just wanted to note that there is a difference in what I tend to think of as mapping, which is going out and collecting the data with multi-beam, or split beam, or single beam, or whatever acoustic gears we have.

As Carter talked a lot about, there is a significant subsequent effort to post process data and analyze the data to create actual habitat maps like Carter put up his own. There are two very distinct processes and the second one of those entails some very significant costs as well. I just wanted to make those distinctions.

So beginning why do we want to map, and I just put up a few bullets of why we might be interested in doing that and really improve knowledge of the distribution of habitats can lead to improved fishery-independent survey designs. An example of that, which is in the Florida Keys – and I used to do some work down there – they have a reef fish visual survey.

They do scuba-based fishery-independent surveys in the Keys. That survey had been going on for about 30 years, but over time they have been able to – with their increased knowledge of the distribution of habitats and by stratifying their survey design, they have been able to increase by about 4 or 500 percent the precision of their estimates for indices of abundance for some of their focal species. Knowledge of distribution of habitats can result in very real, very significant increases in the precision of the output of fishery-independent surveys, and that, of course, can lead to improved stock assessments.

Mapping can also improve our knowledge of the location of vulnerable habitat such as deep corals. Carter just talked a lot about that and I will touch on that a little bit in this talk. It can also improve our knowledge of the relationships between habitat characteristics and fish distribution in abundance.

That sort of gets to the sort of ecosystem level research that I won't really go into here, but once we have a better understanding of habitats and better understanding of how the habitat characteristics relate to what fish are there or how many fish are there and so on, it really increases our management capability, our ability to enact effective marine spatial planning, for example; so many reasons why it is valuable to understand what is where under the water.

Our system is the South Atlantic, really from Cape Hatteras to – mostly what I will focus on goes down to about St. Lucie Inlet, there south of Cape Canaveral in that slide and sort of three systems that I will touch on are the Continental Shelf, which is the area mostly that is shaded in gray, not the land but the water part of the shaded in gray; and then what I call the shelf break, which is sort of where the bathymetry lines all get close together, and then the slope and the upper slope, which is to the east of that.
Most of what I will be talking about today is Continental Shelf and shelf break, because that is where the group that I oversee mostly works. I will also touch on some of the work going on in the slope. When Roger asked me to put this talk together, I should confess that I am not a mapper. I oversee a research group in Beaufort that focuses on the South Atlantic.

One of our groups, the Southeast Fishery Independent Survey Group, does do some mapping, and so I asked some people in that group to help me put together some figures. I am not sure that we have all the available information, but we estimated that the Continental Shelf area is a little less than 80,000 square kilometers.

From the sources of acoustic maps data, mostly multi-beam of which we are aware, we have totaled that to maybe about 4,700 square kilometers, so less than 5,000 square kilometers, and that includes that big chunk that Carter just talked about, which is, Carter, I did the math and 900 square miles equates roughly to 31 or 3,200 square kilometers.

The naval data represents about 60 percent of that known area that we have mapped so those two big chunks that they did represent about 60 percent of the information of which I am aware. Many others in the room might be aware of information that I don't have. I would suggest that without that naval data that we would have about 2.5 percent of the shelf area mapped.

Those sources that went into those totals included the Navy, any information from the National Geophysical Data Center, which is where all federally funded mapping data should end up there, and then personal communications with people from National Ocean Service, Office of the National Marine Sanctuaries, and then our group and Andy David in Panama City.

I suggest we don't have very much at least of the Continental Shelf mapped, and I am sure that is true for the Slope as well. I don't have specific figures for that. Our group, which is a fishery-independent survey group – and we work very closely with Marcel and his MARMAP/SEAMAP survey, and with Roger, we are predominantly interested in reef associated species. The federally managed species that we are interested in are typically reef associated.

There are also pelagics and tilefish, which are not reef associated, but we are typically interested in reef-associated species, so we are interested in finding hard bottom. That is typically why at least our group is performing mapping. We have a number of sources that tell us about the distribution of hard bottom. Those include Marcel's MARMAP/SEAMAP data base, which he will talk about some after in his presentation, and I will show you a slide of that sampling universe in a moment. A SEAMAP database, which Roger could speak to you, but that was a study – Roger, can you remind me when that was published, maybe 2000 or 2001?

MR. PUGLIESE: It was when we were doing habitat. It was right when we finalized the original habitat plan it came out.

MR. KELLISON: So if you are not familiar with this, this is a study that SEAMAP funded, which was to try to go out and look at all available sources that would indicate the location of hard bottom, and they did that throughout the South Atlantic. We can also gain information from commercial and recreational fishers, from fishing maps, and information from researchers and state agencies.

These are things that have helped build our current knowledge and we are continuing to collect that information. I will also mention our group; our acronym is SEFIS, but it is the Southeast Fishery-Independent Survey that was initiated in 2010, so only two years under our belt. Each year we have gotten a little bit of NOAA ship time, and during that time we have been performing fish surveys during the days and traps and videos, but we map at night.

We have 24-hour operations, and during the nighttime hours we map. I wanted to note that our mapping is designed to identify new hard bottom areas. We are kind of prospecting for hard bottom, and it is not necessarily to provide nice boxes that could be added on with other efforts, and I will show an example of that in a minute and to some extent that is problematic.

This is an example of the MARMAP/SEAMAP sampling universe circa about 2008 or 2009, and, Marcel, please correct me if I am wrong. The red circles are trap sampling sites. I think the green circles are the short purple longline sides, is that correct, Marcel, and the blue are their tilefish sites?

DR. REICHERT: I think it is the other way around. The blue are short bottom longlines and the greens are the long bottom longlines, which are specifically the tilefish grounds.

MR. KELLISON: Then in this slide the blues and the reds are basically hard bottom. This would indicate the knowledge of fishery-independent sampling programs of hard bottom circa 2008 or 2009, or at least the sampling universe. Marcel, how many sites would you say, like more than 1,000 in the trap-sampling universe?

DR. REICHERT: 2.500.

MR. KELLISON: Okay, so those red dots, if you zoomed in, there would be many, many, many more red dots, because some of them are very close together so essentially there are roughly 2.500 of those, even though it doesn't look like there is near that many in there. But you can also see there are some areas like down in here off of Southern Georgia and then North and Central Florida where there is not a lot of information, and that is true also up in this area between Cape Lookout and Cape Hatteras. How might we fill that information?

That might help us prioritize areas for mapping efforts. Here is an example of some different information sources, and I won't ask you to read the legend there, but I certainly can't read it from here. But some of these, the red dots in here, there are a lot of red dots in here, those are all point sources provided by Rusty Hudson. Many of you may know Rusty. He is a retired

commercial fisherman and he has very graciously provided information that he built up over his career, areas that he fished.

We can get information from fishers. There are some blue dots up in here that were provided by Georgia DNR; thanks, Pat, to some from your group. The green dots down here are also provided by commercial fishers. The black and white coverage in here is the predictive hard bottom map model that I talked about earlier that Daniel Dunn created.

We can sort of bring a bunch of sources together and maybe look for areas that a number of different sources suggest that there might be hard bottom in one area. Those are the things that have been guiding, at least within our group, our mapping efforts thus far. I will zoom in on this central circle here just to give you an example.

This is in 2010 off of the Nancy Foster. We multi-beamed this area in one or two nights. The red dots there again are those sites that were provided by Rusty Hudson, the commercial fisher. In this one the blue dots are where we actually ended up deploying trap and video survey. In our operations our goal is to – we are prospecting for hard bottom, we map during the night hours, and hopefully I can identify hard bottom during those mapping efforts, and then the following day we will deploy trap and video gear on those hard bottom sites.

This is just sort of an example of how we utilize other information to guide our prospecting mapping efforts. Then this is an example, so what you see here, all the little postage stamp areas are areas that we mapped in 2010 and 2011 off of Georgia and Northern and Central Florida. Our point in putting this up is that just again that we are not mapping neat squares that can easily fit together. We are just literally out prospecting and trying to find areas of hard bottom.

It is helpful for us in doing this, but it is not really helpful from the standpoint of trying to piece this all together over a longer term and fill in all the gaps. Some of these you see colors in, particularly over here. Some of these areas are black. That is because these were collected from the NOAA ship Pisces, which has a multi-beam unit called an ME 70, which outputs data that is a little more difficult to process than Reson Units on the Foster.

When we created this map, we had not processed this data yet. These show basically our collective mapping efforts from 2010 and 2011. Our group had 35 days at sea of which we again mapped at night during those days in 2010, 12 days in 2011. We have 30 days on the calendar for 2012. We hope that those actually become days. Our schedules kind of go up and down with the vagaries of NOAA ship planning.

We are hopeful that we will have those 30 days in 2012. I am just estimating this next to the last bullet here that on average we might expect to map anywhere from 2 to 400 square kilometers a year from our group. Given that the total area of roughly 80,000 square kilometers of the Continental Shelf, that is less than one half of one percent a year. Just with those efforts, I just want to make the point that it would take quite a long time to fill in all our gaps in knowledge.

Fortunately there are additional groups that are mapping in the southeast; and as Carter mentioned, Andy David, who is with the National Marine Fisheries Service at our Panama City

Lab, has been leading efforts by coordinating with lots of others to map predominantly the shelf break MPAs, the council's deepwater MPAs and the Deep Coral Surveys.

This slide, Andy and Stacey – Stacey Harter; he works with Andy – sent me. This just shows some of their mapping efforts, but it also includes the naval efforts. These are the areas that Carter talked about. The areas in black here are the areas that Andy or colleagues have mapped with the exception of the naval data there; excuse me, not the areas in black, but the areas outlined in black.

You can see this is the Snowy Grouper MPA. That is a North and South Carolina MPA, the Edisto MPA, which has been mapped I think by other groups. Anyway, all this yellow or orangish areas are the Deepwater MPAs. Then Andy's group is also – I am not really talking about the Gulf, but they have also mapped some of the Madison-Swanson and Steamboat Lumps Reserves, and I think this is Pulley Ridge down here at the bottom.

Then this green area, as Carter mentioned, is a Deep Sea Coral Habitat Area of Particular Concern, so that is another giant area, and Andy, the navy obviously, Steve Ross, Andy Reed, are some people that have been doing some mapping efforts in there, but I would wager that the sort of area covered is similar to that on the shelf.

They are probably less than 10 percentile of area mapped. That would just be an educated guess. Other efforts going on, so Leslie Sautter and Scott Harris, correct, collaborated at the College of Charleston to perform mapping work. Our group has been coordinating with Leslie, and I think we had the beginnings of some coordination over lunch today with Scott, so I look forward to continuing those conversations, making sure that different people are aware of who is doing what.

The National Ocean Service, the National Center for Coastal Ocean Science, some of their centers, and also the National Marine Sanctuaries have some ongoing efforts. I don't know, Carter, if there are additional efforts planned from your side of it.

MR. WATTERSON: No, not at this time.

MR. KELLISON: Then I very well may be unaware of other efforts that are going on, so I would be happy to learn about those as well. I asked a question at the bottom how do we prioritize future mapping efforts and at least within our group we tend to again look for areas where we have gaps in knowledge of the distribution of hard bottom.

I have showed before how we have started to fill in some of those gaps in 2010 and 2011 off of Southern Georgia and Northern and Central Florida. In 2012 we hope to spend those 30 days at sea up in these areas where we could certainly use additional information. Because of that or in anticipation of that, members within our SEFIS group have been compiling information from a number of sources to help guide those surveys potentially, including thousands of sites that were provided by sea bass fishermen, which have been really helpful.

To conclude, in terms of the shelf and shelf break, I would say we had much to map in it, and I really think that equates to the slope, those deep sea coral areas as well. As I have tried to cover in the second slide, mapping has many, many benefits; assessments, protecting vulnerable habitats, our capability to perform single-species and ecosystem-based management.

But it is quite costly; it takes a lot of cost and effort to go out and collect the data. It takes additional cost and effort to interpret the data and create habitat maps. I think it would be really helpful to continue to strive to have maximum coordination among all the different groups that are performing mapping efforts, predominantly so that we don't map on top of each other; so that groups are aware what other groups have been doing and go out and map the same areas.

It would really be helpful if we could find a way to discuss and prioritize and agree on areas for additional mapping efforts. With that I will just briefly cover some of the additional efforts. I mentioned Andy David's deep coral work, and I really won't present much of that except to again say that almost all these efforts here, the red is the Oculina HAPC, these are all deep coral efforts here. That is ongoing.

I also wanted to mention some work that is in the Florida Keys that I have been leading with Chris Taylor from the National Ocean Service and some of our colleagues from the State of Florida's Marathon Lab and a faculty member at the University of Miami, where we have been looking at reef fish spawning aggregations and doing a number of different things, but one of the questions that we have had is whether there is certain geomorphological characteristics that are consistent with the areas in which these spawning aggregations are reported to occur.

Here is just an example of some data that we collected using split beam off of Key Largo. We have been working off of Key Largo and the upper Keys, off of Key West and the Lower Keys, and hopefully with funding we will be working off of the Middle Keys in 2012. This shows that previously available data from NGDC, which is a 90 meter grid bathymetry, and this is the results of the mapping that we have been doing.

What we are finding is that we have these in waters from about 50 to 80 meters, these drowned or outlier reefs, many which have exposed hard bottom on them that appear to be present at all the areas where these reef fish aggregations are either known to occur or reported to occur. It occurs that there are some distinct bathymetric features that are present at all these reef fish spawning aggregation sites.

That is more or less what is going on in the Keys. I was just going to end there. This is an image that Andy David and Stacey Harter sent. It is the Oculina Mounds surveyed off the NOAA Pisces in 2011. I will try to take any questions or I don't know if we might open this for some discussion about next steps. Thanks for your time.

AP MEMBER: Could you go back one. What was the resolution on the right? You said 90 meters for the NGDC data?

MR. KELLISON: Yes, so this is – I think it is safe to say, what is the correct term, Kreig? We go out and collect this with – yes; it is interpolated, that was what I was looking for. It is

collected with split beam where the covers of that beam is about 12 percent of water depth. It is not full coverage.

MR. WILBER: Todd, just out of curiosity, I know BOEM is getting ready to release some calls for information and requests for information for five boxes off of North Carolina that might or may not be future wind facilities. If you were presented with the coordinates for those boxes, and BOEM at this point can actually prioritize the boxes as to which ones are more likely than the others; would they be able to influence your decision about where to map in 2012?

MR. KELLISON: Certainly, potentially. I am a little embarrassed to say I am not aware of the exact locations of those boxes, so I am not sure –

AP MEMBER: Well, we can give them to you.

MR. KELLISON: No, I am sure they are available.

MS. DEATON: I brought the map.

MR. KELLISON: Okay. I guess my question would be where in terms of depth do they lie? Our resources are necessarily targeted towards reef fish surveys. We really don't have the Flexibility for our ship time to move them out into water where those resources don't occur, but that doesn't mean that we might not try to find additional capability to try to fill that need.

MR. WILBER: Well, we can get you the map and you can decide better.

MR. KELLISON: Coincidentally, well, maybe not coincidentally, but I have a note – one of the to-do lists on my calendar that screams at me every time I open my computer, and following up on that very issue is one. I had a discussion with my supervisor recently about that. It is not an issue that I haven't been aware of, but I do need to inform myself on it.

AP MEMBER: When you said resources and ship time; is that talking about what you can afford to do versus if funding from BOEM was available for you to do that work?

MR. KELLISON: The reason that we have ship time is because of data needs for reef fish, predominantly red snapper, because when the fishery was closed, monitoring the hopeful recovery of that species became entirely dependent on fishery-independent data. Before we did not have ship time; once that happened we did have ship time.

I guess what I was saying we really don't have the capability of now going to focus on something else. These are obviously important issues, so it is certainly within the realm of possibility that we could acquire more ship time to accomplish those goals. Can I ask a final question? Is anyone aware of other mapping efforts that I didn't touch on today? It doesn't have to be answered now, but if you are, if you think there might be, if you think I missed something, I would love to know about it. Thanks.

AP MEMBER: This may be getting ahead, but with all these mapping exercises and wind and such coming in and the National Ocean Policy being implemented, have we even begun to think about how through a marine spatial planning program or something we would put these data on a larger map? What is the mechanism? I don't understand this new thing very well.

MR. KELLISON: It is a very complicated answer to your question, because the states in the South Atlantic vary in their degrees to which they are embracing Coastal Marine Spatial Planning. It is a very complicated thing, but people are pulling together websites that are sometimes issue-focused, sometimes more just geographically focused on the various data sets they can get their hands on that they feel either characterize that geography or characterize that issue. There is more and more of that coming on line.

Much of it is being funded through wind farms both in South Carolina and North Carolina anyway that I know of. I am not really sure about the funding in Georgia and South Carolina. This stuff, it is happening; perhaps not as organized as it should, but it is happening.

MR. WATTERSON: I was just saying it is a huge issue. When we started our survey in 2010, it was important for us to try to figure out what habitat information was available, and there is not necessarily a single source that we can go to to find that, so it would be great. I would have liked to have come and put up a map of everything, and I could have put more on a map.

It is hard to see because so much of it is little postage stamps that if you look at it at the large scale it is hard to see all of it, but there is certainly information; for example, Steve Ross or Andy Reed that we don't have access to their data. It would be nice if there were some source. I think in the end maybe NGDC, the National Geophysical Data Center should be that source, but not all data end up there.

MR. PUGLIESE: To that directly, that is one of the things that we have been working on in the background over a number of years through our building of the web services, et cetera, to compile that information because a lot of that went directly into – the detailed information of every source we could get went into the Deepwater Coral HAPCs, support for information, on background support for the MPAs.

Some of the things we are going to be discussing today and tomorrow are getting to exactly that regional presentation of habitat distribution information, species distribution; all trying to compile it for our deliberations and work with our partners in the South Atlantic Region. We have been moving in the background.

There is a number of those information that are still in services that are not public access right now just because of trying to figure out ways of making them permission for researchers. We have been using it in management but not necessarily distributing it out fully at that level now. To some degrees, we are talking very specifically about that now.

That is one of the reasons is to try to go further, expand it further, and not only have it available, but then have the ability for a focused effort to identify where a priority area is, the areas we

don't have information on species or distribution, and how to target; how to collaborate on targeting new work, a very intended effort right now.

MR. WILBER: Marcel, you are finally up.

DR. REICHERT: Thank you for the opportunity to update you on the fishery-independent monitoring. This is a presentation – a large part of this presentation I gave to the Snapper Grouper AP meeting, and a large part of this presentation was also given by Todd to the South Atlantic Fishery Management Council.

This is a combination of the efforts by MARMAP, SEAMAP, South Atlantic, and SEFIS all focused on reef fish. In particular, I updated you in one of your previous meetings on the activities of MARMAP, so I largely skipped those details, and I focused mostly on what the new fishery-independent monitoring efforts have done to the available data.

Those efforts were a direct result of a workshop that was held a couple of years ago in North Carolina because of the decreasing availability of fishery-dependent data because of increasing stricter regulations on the fishing. That workshop had diverse participants from state, federal agencies, North Carolina, South Carolina, Georgia and Florida.

That provided the recommendations for the future of fishery-independent surveys and how to approach those surveys and what levels of effort were needed. It was recommended that the need was over $10 million to fully implement the recommendations of the workshop. Of course, we fully realized that was probably an unrealistic goal.

It led to the creation of the Southeast Fishery-Independent Surveys, as Todd mentioned, and Todd is heading up that effort or SEFIS in 2010. The specific objectives of that program were to provide additional data mostly in support of stock assessments for reef-associated species, but the effort was clearly on red snapper at the time and particularly because of the closure of the red snapper fishery in the regions, the Continental Shelf area and the shelf break area.

It was very important that that was cooperative with the ongoing MARMAP/SEAMAP reef fish programs to make sure that we are joined at the hip and we were not interrupting any ongoing surveys and indices. It was predominantly to increase the number and spatial distribution of the samples and to address some criticism that MARMAP and SEAMAP have had which were a result of practical implications, numbers of sea days in particular, to fill some gaps in the spatial distribution.

Also, one of the outcomes of the workshop was to use additional techniques, in particular video recordings as a survey gear to develop indices of abundance or relative abundance to address some trap selectivity issues; in other words, to collect data on fish that we encountered in the traps less frequent than the abundances would indicate, and also to provide some hard bottom habitat mapping to improve survey designs – Todd mentioned some of that in his presentation – and then in addition to that to do some more research to improve survey methodology, and also to address management issues and to assist the stock assessors with stock assessments.

As I said, there is very much a cooperative effort. Great care was taken to use identical methods. In particular we choose the Chevron traps which MARMAP had already been using for a couple of decades but add video camera. MARMAP staff trained and participated – trained SEFIS staff, and participated in field sampling, and we are still participating in field sampling.

Currently all the video processing and analyses are done by SEFIS and MARMAP is continuing to process all the life history samples, in particular the otoliths and the gonad samples. We are striving to create one combined data base. We are actually having a workshop on Thursday to evaluate the sampling season of last year and to continue the collaborative research efforts.

As I mentioned, a lot of this is important to provide the SEDAR stock assessment process with data and analyses. Our sampling universe has basically remained the same from just south of Cape Hatteras to roughly the St. Lucie area in Florida. We are sampling generally the Continental Shelf and the shelf break to about 90 meters depth. In the 90 meters those are the Cheuvront trap data that I am concentrating on, but we are still sampling with the short bottom longline, and those samples are taken to about 200 meter depth.

Then we also have a tilefish survey over muddy bottom areas in between 200 and 230 meters. The tilefish survey is mostly off of South Carolina. To give you an overview of the increase in effort, MARMAP in general we collected around 500 samples annually. The green dots is an example of our sampling regime in 2000; and as Todd mentioned, each of those green dots may actually represent a deployment of several Chevron traps.

The pictures I show here are pictures that we have taken with our still camera that we started to put on our traps in 2008. In 2006 we received some additional funding to complement the MARMAP Reef Fish Survey through SEAMAP, so the reef survey is now a MARMAP/SEAMAP Reef Fish Survey.

That increased the annual samples to a little under 700, so that was already a significant increase. Another significant increase in the data collection was the addition of still cameras. Those still cameras take a picture every five minutes, and we use that to verify bottom. That was a tremendous help in identifying live bottom habitat in addition to the bottom mapping.

It also allowed us to potentially develop some indices of fish that we usually don't catch in our traps. Also, it helped us to look at what we call trap behavior. If the wave action was severe enough, traps would bounce off the bottom, and that, of course, affects the catchability of the traps. That gave us a lot of additional information we previously did not have.

Then in 2010 the SEFIS program came online and this sampling season 2011 was the second year of the sampling, and it dramatically increased our collections to just under 1,500 collections a day. You can see the increase in the number of dots on the map. This is the 2009 and 2010 sampling station, so we were able to fill some gaps in the geographical range.

It also dramatically increased the number of Chevron trap deployments to just under a thousand, so we expanded our sampling area. Currently because of logistical reasons, the SEFIS group, in terms of the reef fish sampling, is focusing on Georgia and Florida, and MARMAP/SEAMAP is

focusing on South Carolina and North Carolina. On Thursday one of the things we will discuss if that was something that worked out well.

We now have the additional video survey that can help us with some bottom mapping; and as Todd mentioned, in addition to the reef fish survey, SEFIS also did some bottom mapping and it allowed us to do some additional analysis that will hopefully in the future make our sampling even more efficient.

The sampling approach for SEFIS, as I said, was the Chevron trapping identical to MARMAP, videos, multi-beam habitat mapping and the research. This is the video camera that is attached on top of the trap and it is facing away from the trap opening. SEFIS currently is using one or two video cameras. Here is a smaller video camera sitting next to the big video camera.

MARMAP is still using still cameras, so we have the video camera facing away from the trap and then we have a still camera facing the opposite side. It gives us a little more information, because sometimes you may have a wall in front of the trap and a complete sand flat behind the trap, and now we have a little bit more information. That provides us once again with more habitat information than we previously had.

The 2010 results, 63 days by SEFIS, 75 by MARMAP; and as I mentioned in my previous slides, significant increase in the total number of traps deployed. At that point almost all of the traps of SEFIS were deployed with a video camera. In addition to that, 37 areas were mapped, and that was the research that Todd covered in his previous presentation.

Then in addition to that, SEFIS was able to do a red snapper longline survey, and I can provide some details if you are interested after my presentation. In 2011, I would call that the first full year of the implementation of SEFIS. We had a significant increase in the number of sea days, 12 days on NOAA ships and then 40, and respectively 56 days on the RV Savannah, and the RV Palmetto; both vessels we used as our research platform.

We did some additional longline efforts. The tilefish longline efforts were done by the R/V Lady Lisa. Palmetto and Lisa are the South Carolina vessels; R/V Savannah is a Skidaway vessel. As I mentioned earlier, we had close to 1,000 trap video samples, and we hope to continue that in the future. That was actually more than 100 percent expansion over the recent South Atlantic sampling efforts.

Currently both SEFIS and MARMAP have a video on every single trap that we deploy. The video was very important. It was recommended by the workshop and it created additional indices. It also helped us to study and address the trap selectivity issues. It was a method that was used in Florida, but they used it in a separate frame not attached to a trap.

The criticism of that was that greatly reduced the number of biological samples that we were able to get, and the stock assessors were continuously asking us for more biological samples because a lot of the current stock assessment models are based on age. By putting the video cameras on the traps, that allowed us to collect both video information as well as the biological samples.

We had never used the video as a sampling gear. We used a video to look for bottom to verify some bottom, but we didn't use it to develop an index. This is what I mentioned in the previous slide. This is the frame that is used in the Gulf of Mexico, so it is basically a frame with a bunch of cameras in it, stereo cameras. We are not currently using stereo cameras, but in the Gulf of Mexico stereo cameras are used, and that helps to actually estimate the length of the fish on the video cameras.

That is something that we are contemplating potentially for the future. Then in the Gulf of Mexico they were able to create indices of abundance of red grouper, gag, scamp, red snapper, mutton snapper, vermilion snapper and gray triggerfish; and all that information was actually used in stock assessments. The advantage of the method that they were using is that they have length information available.

That was very encouraging and that was one of the reasons that we decided that this was probably a good method to use to get some information in our area. This is the setup of the trap with the camera facing. This is the opening of the Chevron trap so that the camera is actually facing away from the opening. We started using the video. Because we could only use the video on the Chevron traps, there was a bit of a limitation to the depth that we are sampling. The depth we are sampling is between 10 and 90 meters.

However, because we are not using stereo video or laser beams, we don't have length information yet. We may do that in the future. The SEFIS group did the analysis with only video cameras. This is quite an effort, and currently they are looking at a number of priority species. It's still quite a high number of species, 107, but there are additional species on the videos that they are currently not focusing on.

I will leave the video clip until the end of the presentation so that we can run that while I entertain questions. Counting fish sounds easy, but it is fairly complicated. There are various methods that you can deploy. Your objective is to get a linear relationship between the fish counted and the true relative abundance around the trap.

The methods that were used were to count all fish you see in the video, time it, count the time of first arrival, maximum number seen in a single frame, and mean number seen in a single frame. Based on some research, the method that was chosen was the mean number of fish seen from a series of frames in a video.

The videos are generally around an hour in length, correct, Todd? It varies a little. Not the entire videos, not every video is read in its entirety at the moment. I realize that some of these species are a little difficult to read, but a first analysis was done looking at the comparison of traps and videos, and that analysis was done based on the 2010 data from Georgia and Florida. There were 247 videos that were good enough to read.

Looking at presence and absence only, it was shown that a lot of species occurred in the videos in relatively higher numbers than in the traps. That created an idea that information on the videos was very useful to create indices of relative abundance. Some of them are a no-brainer;

for instance, the nurse shark is on there. Well, obviously we would never catch nurse sharks in our traps.

But it is an indication that the video actually widens the range of species that you can potentially use the data for index of abundance. Other species we know, we catch a lot in the traps. For instance, black sea bass we actually catch more in the traps than we see on the video. The first analyses are very encouraging for the development of additional indices of abundance, for in particular the species that were listed here.

And, of course, the red snapper and scamp, vermilion snapper and red porgy, gray triggerfish and the jacks, those are recreationally and commercially important species. In essence, a number of species even with the additional video information we still don't get a lot of data. For instance, gag grouper and red grouper are some of those we would like to increase our sample size. Potentially with the inclusion of now the North Carolina and the South Carolina data we can potentially increase the number of species that we can develop potentially reliable indices of abundance for in the future. Of course, there are a number of important challenges of using underwater video. The two pictures here give you an indication.

Sometimes you simply don't have enough light or the turbidity is very high, so changes in turbidity and light availability may limit the use of the videos. There are various ways of dealing with that. You can exclude them, and we are also trying to develop an index of visibility and include it in the general linear models. We are currently working on measuring the visibility directly and use that data to develop those corrections. Of course, as with every gear, traps or video, you have issues of selectivity.

In the video you miss the smaller fish and also the cryptic fish are difficult to observe. Video cameras are expensive and can be lost. Traps are getting stuck on the bottom every now and then. I would say we lose on average about two traps a year, so that is not a lot of traps but if you have expensive video equipment on top of it, that can be very expensive.

That was also the reason why we chose currently not for the setup that was used in the Gulf of Mexico, because the cameras that they are using are a lot more expensive, but we will definitely look at some changes in the future if that would help us to get additional information. Then a very important constraint is that the reading of the videos is very time-consuming, and thus you need a lot of personnel support to do that.

On average, looking at one video takes between one and eight hours so you can add it up if you think about the number of samples we collected each year. Of course, although we have remedied that by putting the videos on traps, you don't collect the biological samples. If your setup is good enough, you can get some length data, but that is about it.

We hope that the video will help us create additional index of abundance or index of relative abundance for a number of species; very likely red snapper, which is very important in this area, but also for vermilion and red porgy – both are on the SEDAR schedule for next year – and gray triggerfish and black sea bass and other groupers.

As I mentioned earlier, I hope we get some additional species with the comprehensive sampling starting in 2011. What is also very important is it provides us a direct image of habitat information both in looking at new habitat and also in looking at temporal changes, because we sample annually roughly the same area, so we can look at changes in habitat type over time.

In conclusion, a large increase in sampling efforts, including the biological samples, an increase in the expansion of spatial distribution in sampling, more information on habitat type, underwater video helps us to develop indices, but also we must be very realistic about our expectations. Still what we are doing now is a lot better than what we did in terms of the data that we provide, but is still below the recommendations of the workshop.

We also have to be realistic of the number of species that will benefit. Species with a very low relative abundance, we will probably have a difficult time to get sufficient data for a full age-based stock assessment. As I mentioned, the reading of the videos are very labor intensive. We will have to have patience because for new indices it takes a couple of years to develop a robust index. I threw this slide in a little while ago because someone mentioned lionfish; one of the species that we have not caught a whole lot of in the traps or at least not by any means relative to the abundance, but the still cameras provided us a means to develop a CPUE.

This is part of the work that Don Glasgow, who is sitting in the back of the room here, did for a masters thesis. Between 2006 and 2010 you can see there was a dramatic increase in the CPUE in lionfish, which probably will surprise no one, but I think we had very little information relative to the CPUE of lionfish so far. This is an example of how this has helped us to develop new indices. With that, I will entertain any questions.

MR. HARRIS: Marcel, you said you are catching lionfish in Chevron traps?

DR. REICHERT: We do not; although in the last couple of years we have started catching them actually. We are now catching about two or three a year, which is a hundred percent increase from what we use to catch.

MR. HARRIS: I didn't think they trapped.

DR. REICHERT: No, but actually they do trap. It is just you have to use live bait, which we are not using. James Morris in North Carolina has had good success in catching lionfish. He uses Chevron traps but a different bait setup.

AP MEMBER: Actually I had two questions for you real quick; so you are baiting the traps?

DR. REICHERT: Yes, we are.

AP MEMBER: I was involved in some of the early work in the Gulf of Mexico with the video traps back in about '97. One of the criticisms they got about baiting the traps was that it was artificially attracting fish to the area that wouldn't normally have been there or that you wouldn't normally observe, and therefore increasing your fish counts. Have you thought of a way to deal with that?

MR. KELLISON: I am just saying that the goal of these surveys is not to actually provide an exact count of the number of fish that are there, but it is to provide a relative index that is consistent over spacing and time. We recognize that there are going to be effects of the bait there. It is debatable about whether it is better or not to have the bait.
For us, because the cameras are mounted on traps and we want to continue the trap and time series and the traps have always been baited, it wasn't something that we could really consider removing the bait. I mean, your question is whether that affects the number of fish that are going to be around the camera, and it most certainly does, but what we want to do is measure relative changes in those numbers over time, which hopefully will be consistent with relative changes in the overall population levels.

AP MEMBER: The second part of the question was I guess you had no real way to account for fish that are kind of circling the camera and the trap in terms of double counting or counting them multiple times the same fish.

MR. KELLISON: Well, our group has thought a lot about the best video metric to use, and what we are using is a mean count. I apologize, Marcel, if you have covered this. I was responding to something here so you may have already covered some of this.

Even though the videos are in some cases 90 minutes long, we tend to read – we take 20 minutes of video, and I believe that they start five minutes into the videos, so we let five minutes adjust and we start five minutes into the video.

Then we consider the next 20 minutes of video and we take a snapshot reading every 30 seconds; that gives us 41 frames. From those frames we count the number of fish for each priority species within each of those frames; and then from those 41 frames we calculate a mean, and that number is the number for that species for that trap sample. What we've found is there are lots of different ways that you could do a count.

You could just do total counts, which are right, and then if you have a fish swimming around the trap and the camera gets counted however many times it circles around. In the Gulf they use a minimum count, which is they also read 20 minutes now, but they use the greatest number of individuals observed within a given frame, which is kind of confusing why they call it a minimum count.

They know that there are at least that many fish around. If they observe 20 minutes of video and at one point they saw four red grouper within a single frame, then they would use the number four for theirs. What we found is that minimum count value tends to reach an asymptote with the actual number of fish that are in the environment.

It tracks pretty linearly with an actual number of fish up to a certain point. If you can imagine like the true number of fish on the Y axis and the minimum count on the X axis, it kind of levels off. At really high abundances, that count underestimates the true number of fish there, and the mean count that I described does a better job of tracking linearly at even higher abundances. That is the metric that we are using.

DR. REICHERT: One additional comment is that there is a tradeoff in terms of using bait or not using bait, in particular looking at the number of samples that you get for your biological and your age information, so that is another consideration in terms of bait or not.

DR. DUVAL: Marcel, I just wanted to ask a quick question. I am Michelle Duval; I am a council member from North Carolina; a great presentation and I appreciated the presentation we got at the September meeting. I think it is a great effort. I know you said that you were going to be meeting I guess Thursday to talk about sampling priorities for the upcoming year?

DR. REICHERT: No, this is not about sampling priorities. This is discussing that previous sampling season and talking about data and making sure that we are creating one consistent data base.

DR. DUVAL: So the 2011 sampling that occurred in North Carolina, that went up to Cape Lookout or around about there?

DR. REICHERT: I think this year we actually were able to go north of Cape Lookout. We have plans to expand the sampling north of Cape Lookout in 2012. We did expand our sampling off of North Carolina, but we hope to get even more north of Cape Lookout.

MR. KELLISON: Just following up o that; I am not sure if you were in here when I was talking, but we have those 30 days planned on the Pisces. Assuming that we get those days, we plan to spend a lot of that in Long Bay, so between Lookout and Hatteras. During the day we would be performing trap and video surveys. There are things that we need to work out about whether those are sort of exploratory surveys and whether those get included in the survey data base at least initially. We should have a considerable amount of trapping and video effort up north of Lookout in 2012.

DR. DUVAL: I only asked that because it has historically been such an under sampled area. I know you all are well aware of that and it doesn't sound like you really have plans to take the survey north of Hatteras. I know North Carolina is kind of this weird black hole when it comes to some of these surveys.

I mean, e-map doesn't come far enough down to really get to some of the species that occur north of Hatteras. We have a tilefish fishery that occurs north of Hatteras; and not that there is going to be any extra cash anywhere anytime soon, but I would totally support moving this effort north of Hatteras.

DR. REICHERT: You are actually right, and that is why I mentioned that we are not anywhere near the effort that was recommended by the workshop, because the workshop was very aware and very cognizant of the fact that in particular the northern and southern range were undersampled, and that is a funding and logistical issue; more funding than logistical, actually.

MR. KELLISON: Yes, just following up on that, Marcel quoted a 10-plus million dollar figure that workshop estimated was necessary and that included survey efforts north of Hatteras.

MR. DUREN: I just have two questions; did you use lights on the sled? Okay, and then the other question was is this information that you are collecting from SEAMAP surveys, is it being used by the various teams doing species stock assessments?

DR. REICHERT: Oh, yes, the MARMAP/SEFIS reef fish data for a lot of species it is the only fishery-independent data source, and for a lot of species it is the only data source available. Yes, it is used. We are one of the big data providers for the SEDAR stock assessments, and we actually participate in the data workshops and other workshops. And the lights, yes, we have used lights on our television camera to look for bottom, but there are no lights on the trap cameras.

MR. MIKELL: I've got a question, lionfish, what are we doing to try to eradicate them other than encourage people to catch them and eat them? Are they showing up still like they were a year or two ago; just what is the situation there?

MR. KELLISON: I would say that they are not eradicable, I don't know if that is a word, but, yes, they are absolutely here to stay. I think a presentation maybe I gave last year, but in 2010 they had a number of remotely operated vehicle surveys on shelf break reefs, and they are easily one of the top five or six most abundant species out there. In some places with shallow water, clear waters like in the Caribbean, maybe in the Florida Keys where there is not much reef area and most of it is reachable by divers, it is potentially feasible I think to keep them under control and maybe get them somewhere close to rare. They are easy to spear and they are easy to collect by divers.

But when we have a system where – you know, those things have been documented, I don't know how deep, up to 1,000 meters. Off of North Carolina it is 75 miles out to even the shelf break, and they are everywhere and trying to find a way – I mean, the best thing that could happen if there would be a way to easily exploit them in a fishery.

Marcel indicated some people have had some success in trapping them but it has not been a great success. They don't appear to take hook bait, so they don't appear to be susceptible to hook gear. Until we find a way to – I mean it is a little ironic; the things that we want to get rid of with fishing and we can't; and the things that we want to keep around, we don't do such a good job of. Until we can find a way to find a gear that they are easily susceptible to, I don't think there is any chance of knocking numbers down, but right now they are very, very abundant on shelf and shelf break waters.

MR. MIKELL: Do they have a predator?

MR. KELLISON: Yes, that is a good question. People in the Caribbean have documented like tiger grouper and red grouper, like single or a couple instances of finding them in stomach content so it is possible. In the Keys people are hopeful that the Goliath grouper, which have recovering populations, will maybe keep them in check.

There are certainly not any natural predators. James Morris, who Marcel mentioned, who is with National Ocean Service, he works at the same facility where I work in Beaufort, has done a lot of work with potential natural predators, just putting them in tanks together and starving the predators for a while. Most of the predators won't even go near the lionfish or will take them and spit them out, so we'll see. People in the Caribbean have found films like morays eating them occasionally, potentially sharks.

DR. REICHERT: Part of the SEAMAP efforts are the diet studies, and we are looking at the number of groupers because some have indicated that they may be eating lionfish, and we are trying to gather some information and see if there are species that are actually eating them. I don't think the current knowledge is encouraging.

MR. WILBER: Thank you, Marcel. Brian from BOEM is going to talk to us about the renewable energy research agenda.

MR. HOOKER: Good afternoon, everyone. My name is Brian Hooker. I am with the Bureau of Ocean Energy Management – that is our new official name today – formally the Minerals Management Service; formally the Bureau of Ocean Energy Management, Regulation and Enforcement. I work in the renewable energy group in Herndon, Virginia. We just changed the name of our branch to Environment Branch for Renewable Energy within the Renewable Energy Program Office.

This is pretty much my first foray into the South Atlantic Region. We have been most busy in the Mid-Atlantic and New England areas. I am anxious to begin our work down here as far as education and outreach because that is pretty much where we are at this point, and hoping to just have a dialogue, talk a little bit about our environmental studies program and just about our general process for how we site wind farms.

I am primarily today just going to talk about offshore wind facilities and not so much the marine hydrokinetic part. We don't really have that much interest in marine hydrokinetic on the Atlantic coast with the exception of one. Florida Atlantic University has some interest in a test bed kind of east of Fort Lauderdale.

This is going to be kind of a whirlwind tour here. We are no longer the BOEMRE; we are just BOEM. I will go over the OCS wind-siting process, and we are not going to talk about New England or the Mid-Atlantic. Then we will go into environmental studies. As I just mentioned, the Bureau of Ocean Energy Management, Regulation and Enforcement just recently split in October to two agencies.

The Bureau of Safety Environment Enforcement and BOEM, the Office of Renewable Energy Programs is housed entirely within BOEM. We have generally four stages to the OCS wind-siting process. I apologize for those of you that sit in task force meetings. These slides will probably look very familiar to you. Just shout out if you are confused or think I am saying something that may be different from the North Carolina Task Force.

I think that is the only task force we have active right now in the South Atlantic. Basically stage one is planning and analysis. That is pretty much where we are everywhere is in the stage one where we are just engaging the task forces, the stakeholders and the public, publishing our planning notices, and then eventually getting down to the point where we announce an area identification, which is our famous wind energy areas, or WEAs, or just the polygons that eventually make it onto a map that we consider for leasing.

The planning analysis can be started in two different ways. It can either be started by a developer just submitting an unsolicited application for a certain area. In the South Atlantic we do have – the situation is mostly we have interim policy leases off of two states, off of Georgia and as I mentioned off of Florida. Those leases were issued prior to – OCSLA was amended in I think 2005, and that is what gave us our implementing regulations. Those leases kind of were grandfathered in what we call an interim policy lease prior to those regulations taking force.

Those interim policy leases only allow for installation of meteorological towers or buoys and the collection of data. They are not for any type of commercial-scale development. We have that function where a developer or an interested party could submit to us an unsolicited request or we issue the planning notices, and that is basically what we have done in the Mid-Atlantic and in New England.

We just are wrapping up in the Mid-Atlantic an environmental assessment looking at site-assessment activities. Once again, that is just the installation of MET towers and the collection of information off of the states of New Jersey down to Virginia. That process is also underway in Southern New England, south of the Cape. I don't want to bore you with too much of this. Stage two, we eventually – after all that planning and analysis is a leasing process.

They can be competitive or non-competitive. Basically if more than one developer expresses an interest in an area, then it is basically competitive. Then there is an auction process that we are developing to issue leases under that process. Non-competitive means that no one else is interested in developing the site. Throughout this whole process we engage the public.

There are several FR notices that go out throughout the process. Once they actually get the lease, the developer has a lease; they have a five-year period to collect site-specific data that informs the preparation of the construction and operations plan, or their COP. The COP is the kind of the meat and potatoes for any commercial-scale development.

Right now what the site assessment is is their SAP, their Site Assessment Plan. That is what we are currently reviewing under NEPA and through our biological assessments and through our EFH consultations is just the SAP component and not the full build-out component. Then in stage four, this is when we finally get into commercial development.

A lease would be probably about a 25-year period, 30-year total if you add the five years of site assessment prior to that. For those an environmental impact statement will be prepared, and those will most likely be on a project-by-project basis. After those 25 years, they can allow it to expire and decommission or they can renew the – they have the option to renew the lease.

During all four of those, there are opportunities for public comment and engagement. As you are probably aware, the task forces that we have set up for each state are elected positions or federal or state agencies, or people appointed by those agencies are allowed to sit on those task forces. However, they are public; and so if you are not a member of the task force you can listen and our general standard operating procedure is to have a question-and-answer session for the general public following the wrap-up of the agenda for the task forces.

Currently none of the councils have a seat at the task force table. That was a quick run through of kind of where we are. As I mentioned, there was just a North Carolina Task Force meeting that is just starting the identification process and a planning analysis of trying to winnow down some areas for further consideration off of North Carolina coast.

Southern Company has an unsolicited application under their interim policy lease which is just looking at installation of a MET tower in federal waters off of Tybee Island, I think approximately. Then also in the South Atlantic is Florida Atlantic University's interest. They have an application in with us now looking at a test bed for marine hydrokinetic devices, basically an underwater turbine.

That is the status of things as far as the planning and analysis stage. Where we are and my primary reason for being here today is to try to get solicit input on – you know, we have an environmental studies program. We get about $35 million a year; 4 million of that is for renewable energy that is split. That is not only in the Atlantic.

We share some of that with the Pacific, but the bulk of the renewable energy effort right now is in the Atlantic so we do get a sizable portion of that 4 million. We want to identify what studies need to be done early in the process so we can have the data ready by the time we actually get to a construction and operations plan where we are having to do an EIS. Some of the data is collected by the developer as part of their site-assessment activities.

But what we would like to do is kind of have a regional focus and if we identify a real need that a region needs that perhaps an individual developer on an individual site may not be able to answer, that is where our environmental studies program is kind of geared to. That website up there is where we have our current – we have a new website but the old links still work, so it still says BOEMRE.gov; however, if you go to BOEM.gov you will eventually find its way there. We are transitioning to a new website so bear with us in that process.

Here is just a quick list of some of the studies we have. A lot of what we are doing at the early stage you will see in here is a lot of data search and literature synthesis, basically trying to identify what the body of knowledge is currently. That is how we really identify our data gaps and then go forth with an actual data collection study.

One thing to highlight here that is one of the larger items is the AMAPS which is Atlantic-wide. That is between Navy, BOEM and NOAA. On the marine mammal side there is a lot of interest in noise issues associated with primarily not the operation of a turbine but the construction of offshore wind facilities, so a lot of them are geared in that direction.

On fish and fish habitat the largest thing that really comes through is the electric magnetic fields that are emitted from the transmission lines. We have direct current and alternating current. Most of the inner array cables connecting the wind turbines together would be alternating current. However, there are some proposals for – if you are further offshore you really need a direct current system and a direct current system produces a little bit larger magnetic field around it as opposed to the alternating current so we are looking at that.

We have had some lab studies that we have just completed, and now this year on the Pacific coast we have our first In Situ Study where we have a control with a dead cable and a live cable, that they will be doing in water studies. Also, marine mammals aren't the only ones that could be affected by pile-driving sounds and so we have another study on pile-driving sounds in fish.

Then also the cable burial depth, which is of interest not only for fishing to stay out of the way of bottom-tending mobile gear, but also the deeper the cables are, the less of a magnetic field will be above the surface. Avifauna, I am going to skip over that. I don't think everybody in this room has too much of an interest in birds.

Sorry, Wilson, I knew you would be the one to raise the issue. And some just general monitoring studies here. On the social and economic and cultural resources, we do a lot of visual impacts of historic properties, a lot of our siting is driven by how far we can get it to shore without making everybody on shore mad.

The visual evaluations are especially important in North Carolina with the National Park Service. They have a lot of interest in maintaining that visitor experience – I think that is how the National Park Service likes to talk about it – and not being able to stand at Hatteras and look out at a couple hundred wind turbines blinking on the horizon.

Another one we have that is just wrapping up is an analysis of space-use conflicts. That was a national study looking at both coasts. It is hopefully going to point us in the direction for some best management practices especially regarding other OCS users, primarily commercial and recreational fishers. Then we also have some other ones that are looking at historic wrecks and that sort of thing.

Todd brought up earlier some of the – BOEM does have some studies that we do in partnership with NOAA, so you are probably aware of them through NOAA because generally we don't have our own fleet of ships or anything like that, but we do help fund a lot of the NOAA stuff. Some of the canyon surveys, the lophelia cruises, we're a big funder in those.

Those aren't really on the alternative energy side because they are too deep for where we are looking, but there was I guess some oil and gas interests at one point that funded those. Once again, here is a link to that if you want to see the latest report on the EMF and undersea cable report. I am in the middle of procurement right now. Actually the request for quotes is out that we have with four vendors to develop a series of meetings up and down the Atlantic with kind of a – it's a workshop that will be between commercial fishers and wind developers to try to identify best management practices for the siting of – from the commercial fishery side we hear a

lot of interest in maintaining alleyways continuously throughout any wind energy areas so that areas can be continued to be fished even with the facility in place.

That will be over the next two years we will start to see the results of that study. We also are kicking off another study that will actually look at the economic impacts from wind energy facility siting to commercial and recreational fisheries as well. All that will help us pretty much more down the road in our environmental impact statement development for the construction and operations plan.
I think I just talked about most of these. The last bullet there was the one I just mentioned on economic impacts. I guess in the interest of time I don't really necessarily want to go into the whole environmental assessment scenario for how we do it, but basically we are in the process now of developing these environmental assessments, and as I said previously they are just for site-assessment activities.

They will not assess impacts from full commercial build-out, but we do look at all these issues in the analysis. We do an EFH assessment; but primarily because you are only looking at temporary structures such as buoys – that wouldn't even be a structure, but a temporary placement of buoys, and the construction of maybe a couple MET towers.

The benthic impacts are not generally that great considering the large area that they are over. They are great actually underneath the anchor or meteorological tower but not in the grand scheme of things. Roger I know included in your packet I think where we are in the actual process, so right now we are in the process of developing our studies profiles for fiscal year 2013.

In the spring we will bring those study profiles to our scientific committee for their review and their input, and then eventually they will make it into a national studies list by the end of the fiscal year 2012. That is kind of how our annual funding cycle works. Right now we are in the process of identifying the studies, writing short profiles that we will then eventually present to the scientific committee in the spring, and then develop them further if it was a solid study, or modify or drop studies as that goes along.

What I did here is I kind of – just to give you an idea of what kinds of things we are looking at, these are publicly submitted study topics for consideration and they are just in random order. Obviously, identifying discrete areas in the Atlantic for fishing, because obviously habitat impacts are one thing, but also displacement and economic impacts or any kind of money lost due to lost fishing opportunity is another.

We have kind of two approaches. One is identifying the fishing areas and another is also identifying sensitive benthic habitats. That goes on to the second bullet there. Down to Bullet Number Three, the other large areas of interest that we have had from public comments is the identification of hazards and mitigations to navigation within wind turbine arrays.

Obviously, if you are trying to navigate by radar alone, it is not going to be all that useful in the wind turbine array with lots of things reflecting your radar. Anyway, look at the study of what

perhaps that impact is. There is obviously – for fishing you probably won't be able to fish inside a wind turbine array 365 days a year even if you were allowed to fish 365 days a year.

But because of the – you probably would only do it on clear weather days and days where you could actually have a vigilant watch and be able to have someone on lookout be able to make sure you are navigating correctly within the array. The other issue that has come up is this one, what the impact could be of a lot of wind facilities up and down the entire Atlantic; what type of oceanographic response there would be from having different monopiles throughout the area?

Could it just disrupt some circulation patterns, some eddies and larval disbursement, which then could impact negatively or positively fishery reproduction. Obviously, the AC and DC electric cables continue to come up. We don't currently have an in situ study planned for the Atlantic at this time.

Then there is just fisheries baseline data collection and this feeds off what was some of the other presentations we just had. One of the ideas is that we could have the developers do very site-specific trawl surveys or video trap surveys or what have you to try to identify the fishery resources in the area that they would like to develop.

However, we also could have the opportunity to augment perhaps NEAMAP OR SEAMAP or some of these other surveys to get a broader regional picture of what the fisheries resources are in the wind energy areas. There could be some tradeoffs there as a result. You may not get the various site-specific survey information if there is that well-designed regional study that is in its place.

Just the last bullet, this one I think was probably more based in more the Mid-Atlantic, New England, basically the scallop resource. It is the benthic invertebrate baseline collection. It is trying to identify scallop resources that are in those areas to make sure that we are not impacting a significant seed area or something along those lines, although there are lots of other invertebrates that are important as well. At this point I would really just like to open it up for discussion or any input that you would like to give BOEM as we kind of go down the line of identifying what studies to fund in FY-13.

MR. MIKELL: Has anybody run a study on the difference in the cost between solar and wind or sea power per kilowatt hour?

MR. HOOKER: I am sure someone has. Our office doesn't do a cost-benefit analysis of whether or not the energy source is cheaper from natural gas or solar or what have you. That is not really our job, really.

MR. WILBER: Much of what I hear about wind facilities is within the context of Smart from the Start and the state task forces. In the South Atlantic the only state task force we have at this moment is North Carolina, and that might be true for several years. What is BOEM going to do about South Carolina, Georgia and Florida and the potential for wind energy in those areas given that there isn't that state task force structure?

Are we sort of like automatically low on the priority list because of that? What avenues are there now for people in those three states to kind of contribute to BOEM's process given that there isn't the state task force venue like there is in North Carolina and in the Mid-Atlantic and New England?

MR. HOOKER: That is a very good point. Obviously, our priorities will be in areas where there is interest in development. It is possible even without a state task force, even if a particular state doesn't have a keen interest to develop the offshore wind resources, it is still a federal program, it could still happen. It is just not the way that we have chosen to go at this point. We prefer to work closely with the state in the identification of the areas. But I see what you are saying, as far as like the allocation of resources to –

MR. WILBER: Like South Carolina has a very keen interest in developing its offshore wind energy resources, but South Carolina being South Carolina has a very keen interest in doing things on its own and not in close partnership with the federal government, so this whole notion of doing it through a BOEM Task Force is what is kind of the issue in South Carolina.

It is not the lack of interest to develop the resource, it is not a lack of expression of interest by potential wind facility operators, it is just we have this state/federal thing going on. What is the avenue for getting in and shaping – I mean, do you have any advice on how to kind of shape how wind farms are developed in these states that really, for whatever reason, don't have an interest in establishing a task force?

MR. HOOKER: I don't think I have an answer for you, I am sorry. Obviously, if you get a developer who is interested and has the financial backing to really do the work, then I think it would proceed.

But if it is coming from the other direction where there is an interest in the communities in developing and having the jobs and that type of thing, I think it is a harder hill to climb than if you had a developer that came in and said, "Hey, I have all this money, wind resource looks good off your state, I would like to develop." That is a much different scenario.

MR. PUGLIESE: Pace, to some degree I envisioned the solicitation from BOEM to the councils because they approached all three Atlantic councils on some collaborations and opportunity to at a regional level provide some very specific recommendations for what we really need to know at a regional level to move forward so we could integrate what is being done at the task force, what the states are doing, and at least try to in another level of input to them provide in this mechanism here some guidance on what really needs to be accomplished for research.

That is why it is kind of woven into this discussion on fisheries and mapping and everything else is that this is an opportunity to maybe do what we were just saying before about really identifying what priorities would advance to getting that information, which is going to be right in line with the types of information that are going to be necessary to really see any of these alternative energies, specifically wind development occur in the South Atlantic Region. At least that was the hope of the solicitation of the councils and then our partners in the states on how we

can at least make it work on a regional level, but we need across these things really understand these before we can really get down.

MR. WILBER: Just let me ask; the council though is not a member of the North Carolina Task Force; and that is due to some kind of set of rules inside BOEM, correct?

MR. HOOKER: Well, yes, it's the Federal Advisory Committee Act. It went between the Solicitor's Office and General Counsel at NOAA to try to – basically the lawyers said, yes they are not a federal entity to be able to be exempt from the Federal Advisory Committee Act.

MR. DUREN: I think it was Jenkins that asked about cost. The Department of Energy actually has a table on their website called Estimated Levelized Cost of New Generation Resources, and this is the cost per kilowatt hour of produced power. They have got about 20 different options. The lowest cost is $63.00 per kilowatt hour, and that is from an advanced combined cycle, natural gas turbine generation.

The highest cost is solar thermal, which is $312.00 per kilowatt hour. Advanced coal with sequestration would be $136.00 per kilowatt hour; conventional coal is $95.00; wind power onshore, $97.00, land-based; wind power offshore, $243.00 per kilowatt hours. It is pretty high in the mix of things. It is probably not likely anybody is going to build one of those without substantial subsidies or incentives of some type of other.

There have been enough built in terms of information collection. From our habitat point of view, there have been enough of them built offshore already in the world that we should be able to get data on what environmental impacts might have occurred from construction, from operation, and then interestingly from them being there in the water. We find other types of structures in the water tend to attract all kind of marine life and probably they will to.

MR. HOOKER: To answer your question, you are absolutely correct. The UK and primarily the Netherlands have a lot of wind facilities in place and operating. The UK is continuing to build out. Their environmental conditions are a little bit different. We can look at some of the general species type, species group, family-type interactions to kind of get an idea of what some of the impacts might be.

But as far as like a coastal shelf environment of what we have along the Atlantic Seaboard, there really isn't an exact equivalent in Europe. We are taking as much as we can from their studies and they have been very helpful. They have come and given us presentations, and we have all their publications. That is definitely part of the body of knowledge that we have going forward.

AP MEMBER: I guess the questions I have had is in regards to like all the mapping we have heard from previous presentations; and being from North Carolina and seeing the areas that are proposed, thinking how someone said earlier there has not been as much mapping there north of Cape Lookout, and then up north of Cape Hatteras where I believe two of the blocks are for North Carolina; I'm just wondering kind of what is going to be the breakpoint between what BOEM does prior to opening up blocks for leasing compared to what then the perspective wind developer that gets the lease, what level they will be needing to map. Some areas have lots of

mapping already; are you guys going to do more to get a baseline in there before they even start to give them some information?

MR. HOOKER: Right, exactly, we kind of have two approaches we have; stuff that we fund through our environmental studies program, which is about a little under $4 million a year, and then there are the requirements, the protocols that we give the developers for what they collect during that up to five-year period they do their site assessment.

We actually have two different studies that are trying to – we have solicited feedback; we have gotten feedback from NOAA and Fish and Wildlife Service on previous draft guidelines. We are having additional studies now on really kind of fine tuning those guidelines and those survey protocols that would be not only from marine mammals and sea turtles and protected species but for fisheries as well.

Unfortunately, that is not out yet but it should be out soon. We do have some draft ones that we hope to make public even prior to those official studies coming in. In general, they do have to do diligence in identifying what is there, what resources are there.

MS. HILFER: I am looking at your website on the Cape Wind Project in Nantucket. Has that been there long enough to do an environmental impact, or is that something your office does, or is that when you turn it over to the – you continue your studies, right? You matched your expectations for the studies before you granted the lease.

MR. HOOKER: Right, Cape Wind is an interesting one. It kind of came about prior to the secretary's current initiative and prior to BOEM even having the authority to issue the leases. The Army Corps of Engineers was actually the lead agency when that first started. It is a little bit of a different animal.

On that one we did a full life cycle environmental impact statement from the beginning. They haven't built anything. We have accepted their construction operations plan. The only thing that is on site is a meteorological tower. There is currently ongoing litigation with that proposal. You can look at that EIS to get an idea of what a construction and operations plan EIS would cover.

I wouldn't necessarily hold that as the standard for what future construction and operations plans and EISs will be just because that has been the first one to kind of go through and it has been in a bifurcated process under two different agencies and different regulations along the way. Does that answer – but if you are looking at an EIS, there is long-term monitoring that is being done.

We work closely with – for habitat there are some before-and-after control sites that were done along the cable burial route from the site-to-shore studies that have to be done for the monitoring of the buried cables and the base of the foundations. There is an avian bat monitoring plan that is in place as well. There is a monitoring program that would kick in if and when they would actually build something.

MS. HILFER: What is the depth of that project?

MR. HOOKER: That is really shallow; it is I think around 60 feet. It is diver depth.

AP MEMBER: Quick question; Brian, you said the avian monitoring was after they built it; what about prior to construction, any?

MR. HOOKER: No, there were several avian and bat studies done prior to the construction as well. Although you might have a better sense of – we have an avian biologist on staff that has a better sense of what studies were done on that end.

MR. WILBER: Okay the next item on the agenda is a break. Fifteen minutes and then we will resume with an update from the State Subpanel Chairs on the habitat mapping efforts within their states. And just as a forewarning since I tend to be geographically oriented, we usually go either north to south or south to north. If you are from Florida or North Carolina, one of the two of you is going to be first.

MR. PUGLIESE: Quick point, Jennifer Dorton wasn't able to be here early today and she is actually going to be online for the discussions during the eco-partner coordination meeting. I will touch on a couple points why I had included some discussions of a SECOORA relative to mapping and relative to efforts after the break.

MR. WILBER: We actually have a lot planned for this last hour and fifteen minutes or so, so it is going to be important to kind of stay on schedule and I might become a bit of a taskmaster. But, anyway, to pick up where we left off, Roger is going to speak for a couple of minutes on SECOORA and how they are engaging stakeholders and identification of fisheries oceanography needs. Then we will transition into the presentations from the State Subpanel Chairs, beginning in the north with North Carolina. Thanks.

MR. PUGLIESE: Okay quickly, I wanted to at least highlight what I was trying to get Jennifer to touch on with regard to SECOORA, Southeast Coastal Ocean Observing Regional Association. The organization, you will get a lot more detail about that tomorrow during the eco-regional partner meeting.

One of the things that I thought would be good in the context of this discussion of mapping and efforts and coordination was the fact that the organization is in the process of building a ten-year build-out plan. That intended to provide the oceanographic capabilities, new buoy systems, new monitoring systems, and as part of it I serve as a member and also on the board, so I have been really successful at trying to get fisheries integrated into our observing capabilities in the Southeast Region to a greater degree.

And in this first iteration of a draft build-out plan, they have included not only expansions of arrays to cover things such as our marine protected areas and deepwater coral HAPCs, placements associated with key habitat areas or regulatory areas, but also even adding in things such as applications of the need for mapping through the entire region. I worked with Tina Udouj and FWRI.

We had taken the SEAMAP data at least for a baseline identified in these major habitat distributions amounts of area that had some information in where we really were lacking. Now this didn't include a lot of the more detailed multi-beam mapping you have seen in terms of the amounts of areas, but what it did is it set a stage from which to identify how much area, which became a lot in each one of the different categories.

We have included in this area the shelf, shelf edge, shelf break, shelf offshore, and then the deep, which is basically greater than 300 meters. We came up with aerial distributions of those with the intent that this would actually be worked out in the national plan that will cost out the effort to map all these areas using either AUVs, ship-based efforts or other types, shallow water or deepwater AUVs; similar to what we did when we had the Eagle Ray that used to be with NERC in North Carolina and is actually back in the Gulf of Mexico at the University of Southern Mississippi.

The relevance is that there is a real opportunity to again provide more refined information on the distribution, what we know footprint as well as the longer term, and through this process potentially get resources to expand what we know in our region. SECOORA is going to be going through a more extensive process of engaging stakeholders, including fisheries organizations, fishing community in general.

I wanted to at least get it on the table for the panel to know that this is moving forward and has significant connections in what we are working on. As I indicated, the more detailed discussion will be on the organization and where it has come from, where it is going will be highlighted tomorrow during our eco-regional partner coordination meeting, but it has very significant relevance to this discussion on mapping and long-term research.

I guess the other facet of it; the only one last facet is the ability to connect in the oceanographic aspects of everything we have been discussing. We have been mostly talking about physical, on species distribution, on habitat distributions, but linking these together with understanding how the oceanographic characteristics are really having variations in species and in habitat distribution themselves is going to be really critical. This is a real opportunity to expand that kind of information.

MR. WILBER: Okay, thank you, Roger. We are going to transition now to the updates on the mapping efforts within states. While I haven't seen those presentations, I suspect they will be much more inshore oriented than the ones that we have seen since lunchtime today. Again, the whole goal here is after these individual state updates, we will have an open discussion quickly about what gaps we might see as a panel that we might want to make some recommendations for filling. Usually starting in the north and heading south, we will turn it over to the North Carolina Subpanel Chair, Anne.

MS. DEATON: All right, as far as updating mapping information, since we last met was a year ago, end of 2010, December, the last version of the Coastal Habitat Protection Plan was finished and approved. You can go on our website and access the plan and it has all of the updated information we know of on the structured habitats within North Carolina.

That includes what has been completed so far as far as shell bottom and submerged aquatic vegetation wetlands hard bottom. The hard bottom information is just what you already have from SEAMAP and the Moser and Taylor study. But since then there have been a few additions to the mapping that is not within that Coastal Habitat Protection Plan.

One is that the Division of Coastal Management is in the process of doing some mapping the shorelines, digitizing our shoreline. In that process they will be identifying all the different shoreline types, whether it is marsh, swamp forest, whether it has a sediment bank. They have got it down to about six general wetland or non-wetland type shorelines.

They are also going to digitize any structures along there, so bulkheads, hardening structures or perpendicular structures like docks. They have already finished 15 of our 20 coastal counties. Five are completely done, like they have been quality control checked. They expect to be done with that at the end of this year. That will be a good addition to have.

Then the other new information is since we last met we have finished the new map of the submerged aquatic vegetation that was done with a multi-agency effort. DMF was just one partner; Albemarle/Pamlico National Estuary Program sort of coordinated the effort. They worked with NOAA, U.S. Fish and Wildlife Service and a lot of the other state and federal agencies.

They pooled their money and we all actually chipped in the staff to do the groundtruthing. We tried this effort of mapping the whole coast in one shot. North Carolina has a big coast. It was kind of a challenge to get the right weather conditions everywhere. They did do it though and it came out to being 139,000 acres that they quantified.

They have concluded not to do it that way again; because the low salinity grasses, we really spent a lot of time figuring out the best method and the best window where both types of grasses would show up. Those low salinity grasses just are so much harder to see. This was the first time we had mapped areas south of New River, so we did gain a lot of new information for the southern counties.

But we could tell just from what we know is on the ground in some of those riverine systems that it underestimated in those lower salinity areas. But at least we have a snapshot of all the SAV in our coast and from here we are in the process of planning how to do this on a regular basis, but in a couple of chunks; rotate maybe north, central, south, north, central south, like that so we can continue on and develop a monitoring strategy.

The other major habitat we mapped is the shell bottom. DMF has a bottom mapping program. They are like 95 percent done mapping our entire coast, but they have been doing it probably over two decades. The only thing lacking is a small area in Brunswick County. But, this last year with the budget, they lost I think four positions within the bottom mapping program.

Right now they are not even trying to finish that county because it is not near where the staff is so that is ongoing. The other major gap as far as shell bottom is the deeper subtidal bottoms, and mostly that is Pamlico Sound in our state, the oyster beds. That is where historically we used to

have a lot of oysters. There was a large loss back in the early 1900s and it just never has recovered. One of our top priorities is to get that mapped, and that is done with different methods. You would use side-scanning sonar to do that. That is something we would like to try and do.

The other thing is we have been working on analyzing strategic habitat areas. I think I presented at the last meeting, maybe region-wide, which is Albemarle Sound, and we did finish the second region which includes Pamlico Sound and the Neuse and Pamlico Rivers, so we have got that done. That is more than two-thirds of the coast, so we have got two more areas to do.

The last thing I was going to say that has already been talked about is the Wind Energy Task Force, which have been several steps. It started out with the Institute of Marine Science that UNC put together a report on wind energy, and they compiled a lot of the data layers for that with Dr. Peterson charging the way, because he was a big proponent for it. We have provided all the habitat information to him. He also got fishing data.

From there that has moved on to other groups in this task force, and they have also combined that with the military conflict zones, fishing concentrations, and now they are still in process of looking at navigation conflicts. Then they are doing a visual assessment to see how close could it be and not be seen.

All that information is getting compiled by BOEMRE. They have got five possible areas for North Carolina that might be compatible for wind energy development from the south to the northern coast. I believe, Brian is still here, I think they are going out – isn't it in December you are going to have a request for information.

MR. HOOKER: Yes, a Request for Information, that is one of the public documents. I am not positive on when that is supposed to be released. I know they are actively working on it.

MS. DEATON: I have the website. They have a website which might be of interest to you guys because it compiles all those data layers, kind of like South Atlantic, your IMS Mapper. Hold on and I can give it to you. Okay, it is www.explorer.arcgis.com. If you go to that you can – does that sound right? That is what I have written down, and then there is a whole bunch of numbers.

MR. HOOKER: Yes, I believe it is at the Multi-Purpose Marine Cadastre. It should be readily accessible I think off the new BOEM webpage, if you just go to boem.gov. The Multi-Purpose Marine Cadastre should be there. Just a quick little background on that is a joint effort between the NOAA Coastal Services Center and BOEM to get as many data layers as we can up there. I will leave it at that.

MR. WILBER: I just have two questions, I think. On the shoreline that is being digitized what is it being digitized from?

(Remarks made off the record.)

MR. WILBER: No, just I guess relatively recent aerial photographs is what you're –

(Further remarks made off the record.)

MR. WILBER: And when all that stuff is done, does it end up on a DMF website or is it on the NCEGIS website?

(Answer given off the record.)

MR. WILBER: Any other questions for Anne before we move to the great state of South Carolina?

AP MEMBER: Did you say Dr. Peterson, Pete Peterson?

MS. DEATON: Dr. Pete Peterson. He was somehow doing the study. It was in the legislature to do a wind study and then – but since then there was another task force.

AP MEMBER: He did fisheries and ecosystem mapping?

MS. DEATON: Yes, he compiled all the data layers that he could find. He included the fisheries information, the military conflict information, habitat information, the wind, the wind speed.

MS. WENDT: Well, hot off the presses just in the last few weeks is a final report that was completed by the Marine Resources Research Institute with the South Carolina Department of Natural Resources. This is the only comprehensive state-wide spatial mapping effort that I am aware of that has just recently been completed.

It was funded by the South Carolina Energy Office with a grant from the U.S. Department of Energy. The grant had several objectives, but the one that is relevant to the mapping effort was this creation of a regulatory task force for coastal clean energy; so there is a task force in South Carolina, but apparently it is not the same kind of task force that the other states have in connection with the BOEM effort.

But in any case, the objectives of this mapping effort were to compile the latest updated spatial data and metadata that is already available from DNR and other agencies, state and federal agencies. It includes the data sets, and this is all contained in that report which is Attachment 11, I think, on your little flash drive.

But the data sets basically fell into three categories, biological resources, habitats and habitat features, and human uses. There are lots of data sets that were included in this. Some already had geospatial reference data associated with some other data sets. It had to be developed for them. The entire list of data sets that were included in this effort is shown in Table 1 of that final report, along with the agency that provided that data set.

You can see that there are lots of different data sets there. It covers not just aquatic resources but upland and inshore and freshwater wetland, all sorts of land use cover. There is lots of

information, but there were some data gaps that were identified, and those are shown in gray. The avian migration routes, they were unable to compile that information in the time they had to develop this data base; and also marine mammal migration routes I believe; and there were some others in there, I can't remember what they were.

But in any case all the data sets, or not all of them but most of them are downloadable and they can be found on the DNR Website. The two main contacts for information related to this mapping effort are Bob Van Dolah and Jessica Boynton, who is our GIS guru. I think, Roger, you have all that contact information and the links to the data sets. I think I sent that to you. You could send those out to the rest of the group, I guess.
I don't know if those links are contained in this final report or not. In any case, that is the only effort that I am aware of. It extended from 30 miles inland to the 200 meter contour offshore – that was the project area – and from 32 degrees to 34 degrees north. It was basically the entire coast of South Carolina, but it also did go slightly into Georgia and North Carolina. Of course, this is all related to the wind energy investigation off the coast here.

MR. WILBER: Any questions for Pricilla?

MS. WENDT: I have a question, but not for me. To what extent does BOEM interact with the Department of Energy in terms of funding various efforts like this so there isn't duplication of effort?

MR. HOOKER: We do have a memorandum of understanding, a memorandum agreement with the Department of Energy to collaborate on such things like this. We sit on each other's various reviews for projects and things of that nature. We do try to coordinate as much as possible. One of the things we try to do every year too is have these Atlantic Wind Workshops – I know Roger attended the one this year – where we kind of all gathered back again in the same room and say, okay, this is what we got and this is what we are going to do forward, but that is everybody and not just the Department of Energy.

MR. WILBER: Okay, are we ready to move on to Georgia and Pat?

MR. GEER: Okay, I will start up with our non-game section, which is in our Wildlife Resources Division. They have done a pretty good job of doing work with turtles. They have a shrimp trawl aerial service they do every two weeks that shows effort distribution across the coast. They have their nesting sites and strandings.

You have already seen some of the right whale work that they are doing. They also have a pretty good GIS data base on terrestrial species. They are looking at mammals, amphibians and reptiles, just upland a little bit. Within our Coastal Resources Division, our Ecological Services Section, they are the people that do most of the permitting and the mapping they do is for most of their permits.

They have just completed their coastal inventory for the new national wetlands mapping standards. They work very closely with the South Atlantic Alliance who we are going to hear from tomorrow. They are working on maps for sea level rise, shorelines, and they are working

with spatial planning, and a lot of regards that way. They do most of the permitting and management of those habitats.

On the fisheries side we have had a little bit of problem with our habitat program over the last five years. It seems like every time we try to get it up and running, something happens. It should be a staff of three biologists and two technicians; we are down to two technicians now. We just recently hired someone to run that program and they suddenly passed away.

We are in the process of trying to fill that position. What we are hoping that person will be able to do is collate all our fisheries data that we have. We have a lot of surveys; a lot of surveys we work with SEAMAP. We have longline surveys and trawl survey just like every other state, oyster restoration projects, artificial reefs, and try to collate as much of that information as possible. It is there but it is not together; we don't have a plan.

It seems like every time we get somebody new in and we say this is what needs to be done and somewhere along the line it falls apart because of budget cuts or some other reason. That position closes next week, so if you know anybody is interested please let me know. Some of the things we have been doing with the artificial reef program; we have been using side-scan sonar to get detailed maps of the areas, the individual structures that are out there.

Until that person comes on board and we can start revamping this program again, I am looking forward to it because I don't know how many of you knew Gabe Gattis, but he was the one running it and he was really excited about it. We were just looking at some of the things that they were doing in North Carolina and South Carolina and sort of reinventing the wheel, and look at them as models.

MR. WILBER: Any questions for Pat? Okay, seeing none, we will quickly move to Florida, which I understand, first, does not have a State Subpanel Chair. Somehow we are going to have to fix that, right, Roger?

MR. PUGLIESE: Yes, Dave Palandro had left FWRI, and Amber has moved into the position. At the last advisory panel meeting the decision was made to some degree that what we would like to do is have the subpanel chairs be the state representative because it provides a direct link for day-to-day or kind of long-term operations, so there may be an opportunity.

Amber has stepped in just as her first meeting as the representative for FWRI. We have a real close long-term relationship with the state and with FWRI and operations. Hopefully, that may be amendable to the Florida Subpanel, which we don't have a lot of our members here right now.

MS. WHITTLE: I could add one or two things that I know about since I got invited here two weeks ago. I know that my group just published last week a report that is called the Seagrass Integrated Mapping and Monitoring, so it is for all of Florida, both Atlantic and Gulf side.

All of the mapping that has been done in the monitoring, and we are hoping to do another full report every six years. That is out there and then I know that Dave was finishing up and his

replacement will finalize an integrated reef map that includes the northern reef and the sanctuary for corals.

MR. WILBER: Thank you. All right, the brief discussion we wanted to have before Tina demonstrates the EFH web services thing, I guess that is what you are calling it, is real quickly are there habitats that you feel should be mapped that are not currently being mapped either in offshore or inshore areas?

If there is a lot of support for some of those particular ones, particularly if they cross state boundaries, we can formulate them into some recommendations from this advisory panel to the council. Is everybody content with all the spatial data they have got; they don't need anything else?

AP MEMBER: I would say places where BOEM is looking at potentially leasing and working with folks in that area as well as potential cable routes back to shore, similar to what the Navy did as they were looking at laying out their submarine array.

MR. WILBER: To ask a question, when we talk about offshore coral and hard bottom kind of mapping and things we would like to see the Navy continue to do and NOAA continue to do, and things like that; as resource managers here in the room, what is the minimum mapping unit you would like to see in those data that you are going to be basing your resource management decisions on? I mean, if the map captures everything one acre or larger, is that good enough, or does it need to be a tenth of an acre or larger or a hundredth of an acre? What is the minimum mapping unit you want to see in an offshore hard bottom map?

AP MEMBER: From our fishery-independent survey group standpoint, it doesn't have to be very big at all. I am not sure if I could give you exact spatial dimensions, but anything that identifies hard bottom habitat is helpful. It could be a very small patch.

MR. WILBER: The whole point of this is what is very small? How the equipment is deployed and how the data are processed results in very small translating to different acreages. When you are trying to advise folks on how to conduct a survey for a wind farm or something like that, what is the minimum mapping unit that you use in making a decision? I am just posing that as a question.

MR. HOOKER: I am not a member of this body, but I can just throw out there that the lease blocks and what we like to recommend as the minimum size is three statute miles by three statute miles; that is the size of an individual lease block. Now we do and can lease what we call aliquot parts of a lease block, but at a minimum having things on a scale of a single lease block is helpful for our planning.

AP MEMBER: To make sure I follow you right there, when you are saying that be your scale, as in like it is has hard bottom, doesn't have hard bottom type, an X/O type thing or what is that three-mile level?

MR. HOOKER: At a minimum. I mean, obviously when we really get down into it, there will be fine tune mapping that will have to get done, but not just for habitat mapping, but for other resource type information, too. If things are available at at least that scale, that is a good starting point for us.

MR. WILBER: Nobody wants to bite on the minimum mapping unit question? Okay, I can understand that. I will just tell you for practical reasons inside the Fisheries Service we use a hundredth of an acre for shellfish and seagrass and hard bottom. We use five-hundredths of an acre for salt marsh. If someone gives us a map and they weren't able to detect things that were at least that small, we reject the map as being insufficient for making a management decision; just as an example.

MS. DEATON: One criticism I have heard on the SEAMAP data that we have now is that because it includes trawl data, like you have these lines, but that just means somewhere along that trawl line they found something that indicated hard bottom. We need something better than that. That is my minimum; something more site-specific rather than the trawls.

DR. REICHERT: But that is only the SEAMAP data are one-by-one minute. There are a number of occasions where that trawl crossed that particular line. The lines you see on that map are a number of points along that line that were observed. Does that kind of answer your question or not?

MR. WILBER: Well, I think putting it in the management context is you would use the SEAMAP data to identify areas off of North Carolina where you think hard bottom might occur; and then in through the BOEM process and the regulatory process to site a wind farm, you would say if you are going to go into one of these boxes that SEAMAP says hard bottom might occur inside this box or in an adjacent box, then you need to go out there with some kind of acoustic type sampling program and you need to map hard bottom at a certain spatial resolution.

What is that magic spatial resolution that we are going to advise folks to use? We have kind of come at this question rather than specifying a spatial resolution like in the sense of a scale, we have come at it by specifying a minimum mapping unit. We have told folks whatever you do you have to be able to detect something as small as one one-hundredth of an acre for hard bottom.

MR. GEER: Don't you think that would vary from distance from shore versus going up river? In our surveys I think we are doing our longline, which in the open ocean is – and it is half mile by half mile, but as we come into the estuary it goes quarter mile by quarter mile. The creeks are probably fifty meters by fifty meters, the grids.

MR. WILBER: I do think it does vary depending on where you are in the landscape not only because the habitats themselves change, but the technology as to what is practicable also changes as well. In the sense of offshore 50, 100 feet of water kind of thing, what is that magic kind of balance between what is practical and what you want to make a management decision on and what is the number? That is the question I always ask people, what kind of number do you use?

MR. MIKELL: It depends on what the situation is. Nine square miles, is that what you all use? It's a huge piece of property but it is not in the ocean. My question is this; when we get involved with lease holders, are we leasing the surface, the water column, or the bottom; and will that leasor be able to dictate who comes into that area?

MR. HOOKER: You had a couple questions in there. Our authorization is through the Outer Continental Shelf Lands Act, so it is only the lands, it is not the water column or anything, and it is a structure then that would sit on the land. As far as your other question about access or being able to get in, generally it looks like it would fall into Coast Guard and their safety regulations if there was a safety hazard posed by a structure. As to whether or not any access would be limited, BOEM would not implement those safety measures.

MR. MIKELL: Yes, it does answer the question but it is probably so far off into the future we will probably be all dead and gone by the time that happens, but I just see it as a possible problem.

MR. HOOKER: Absolutely, that is one of the reasons that we are here and we will have to do more of this.

MR. GEER: Are you concerned that those areas would be totally off limits to everything?

MR. MIKELL: Who is to say it won't be?

AP MEMBER: I guess a question back to mapping experts; does the scale that Pace has mentioned seem like something that is doable in the waters from three miles out? What was it one, one-hundredth of an acre?

MR. KELLISON: I don't what that actually translates to. For the stuff we mapped for the onshore or the on shelf areas, we had it down to a five meter resolution and I think off the shelf we had it at a 15 meter resolution. Basically, what that means is like on the shelf you could detect objects that were 5 meters or larger. Anything below that, you didn't have sufficient resolution to adequately detect.

MR. WILBER: When you say 5 meters, that is like a square 5 meters on a side? Okay, so that is a little bit smaller than a hundredth of an acre; just a little bit, so that is about right.

MR. KELLISON: But that will change depending on whether you are talking about on shelf or off shelf. Obviously off shelf it is a lot harder to detect those smaller objects.

AP MEMBER: Right now you are pretty much just looking on the shelf, correct? Everything else would probably have to be floating if you are off shelf, I imagine.

MR. HOOKER: That is correct, due to the engineering constraints currently in place we are primarily looking on the shelf. However, there are some developers that have some floating turbine technology that is interested in a testing phase.

MR. WILBER: Another way to kind of illustrate this problem with a data set that I have actually touched is South Carolina has an amazing data set on inner-tidal oyster distribution. It was done with state-of-the-art, very high-resolution digital photography. Its pixel size is a quarter of a square meter.

If you can take those data, which are now available from DNR's Website, and you can do like a histogram of the smallest patch of oyster reef they identified and the number of those patches up to the largest patch of oyster reef they identified, and the number of those patches, and then you can ask questions like if I had a minimum mapping unit of one-hundredth of an acre, how much of that entire data set would I be capturing?

The answer in South Carolina is around 85 percent; 85 percent of all the oysters in those data would be captured at a minimum mapping unit of a hundredth of an acre or larger. If you want to get up to like the 95 or 99 percent, then you have to get down to minimum mapping units that are on the order of a thousandth of an acre.

It gives you an idea of just what is practicable and how much of the resource you protect by drawing the line at different points. I would think that same kind of approach would be what we would want to use for hard bottom when we are looking at potential offshore wind-leasing areas. How much of the hard bottom do we need to protect and what is the minimum mapping unit to ensure we are protecting at that level?

MR. WATTERSON: For the collection of multi-beam data, you could use the IHO Special Order 1A Standard which is what we were using for ours, which requires the resolution to be, I believe it was one-tenth of the depth of the water column. Basically at fifty meters you would need to collect to a five meter resolution. At seventy meters you would need to collect to a seven meter resolution and so on.

MR. WILBER: This is obviously a conversation that we can continue, and I love to talk about this kind of stuff, so feel free, be will move quickly into the last issue for the day, which is Tina's presentation on the new web-based GIS services that she was working on with the council to provide. The idea in looking at this presentation is to provide her some feedback on the end of what additional capabilities or what additional information would you like to see this web service contain.

MS. UDOUJ: My name is Tina Udouj and I work for the Florida Fish and Wildlife Conservation Commission at the Research Institute in St. Petersburg, but live in Fort Smith, Arkansas. I mentioned that earlier. It has been fun, but I have been working with Roger for several years and compiling and collecting GIS data relevant to ecosystem-based management.

Today I am just going to talk a little bit about some background information for you and then moving forward where we are and where we want to go. Back in the dark ages of 2003 we started working together and we designed an ArcIMS site, which we envisioned as being a one-stop shop for different scientists and managers in the region to be able to access GIS data.

This is it; it is still up and it is still running. There are lots and lots of data on there. Roger is very forward thinking and persuasive and we have got lots of good data sources on there, and there is ways to get to the GIS data itself through two mechanisms. One is a GIS data page that provides a short description of each data layer and also zipped SHAPE files are available as well as KMZ files that you can view in Google Earth, and then on the council's website we also have a shorter version of that list with just more data that is relative to management.

This is just a screen shot of the GIS data from the IMS and then from the council site. I apologize, I am going to use screen shots today and save my live demo for lunch tomorrow. Technology is always changing, as we know, and even though the IMS application is still useful the software itself is being deprecated and will no longer be available after the current version.

We are still a version behind at the Institute. We are only a 9.3, but we need to make that change to 10 and then go ahead and get with the rest of the group. Our GIS server transition has been happening for a couple years in the background. What we have decided to do is basically break up the IMS. The IMS was a little overwhelming for people with so much data, so we took that approach.

Some of the benefits for our GIS server is that the council will benefit from our resources, our hardware, our software costs. Our GIS server software is very expensive, and so that helps reduce cost for the South Atlantic Council. It is a really easy way to disseminate information. As I was saying earlier, we broke up the IMS into different management issues. Each service kind of specifies on a management issue. Essential fish habitat is one and we have the EFH and EFH-HAPC for all of the South Atlantic Council managed species. We also have NOAA Fisheries highly migratory species available in that service.

Then there is a Fisheries Service. We have data from MARMAP and SEAMAP programs. Then we have a service that is based on the management and regulatory boundaries that are found within their jurisdiction. Finally there is the habitat service. This service has benthic habitat data from the SEAMAP Shallow Water Bottom Mapping Project, the AsDEM Deepwater Bottom Mapping Project, different dive points from Harbor Branch and SEADESC, which is Steve Ross's project from University of North Carolina – it was a collaborative project – and lots of different multi-beam imagery sources.

The problem with this service is it is not available yet. It is built; it is running in the background on our development server. I have not been able to secure it as of yet. With that level of detail, we can't distribute it that way. Just generally what is a map service? I talked about all these map services that we have, and it is basically a way to make maps and their features available in a variety of clients.

Clients could be web applications, and that is basically what the ArcIMS is, the web application. We are developing new applications for each service. Those of you who use ARC GIS have ARC View or ARC Map on your computers could pull in the service yourself if you know the URL, which I will show you in just a minute. ARC GIS Explorer is another option, which is free.

You can even view some services if it is set up correctly on mobile devices like your iPhone or Android devices, Google Earth, SKML, OGC Platforms, WMS, or WFS. There are a lot of options and ways to use the services that we are compiling. This is just a comparison of two approaches for making web mapping applications. The one on the left, the dot net web ADF is basically an out-of-the-box option that comes with our GS server. Initially we took that approach because it was pretty simple to develop.

They were menu-driven, easy-to-add GIS capabilities, but the problem then was that if you changed your data sources or your position within the map, then you would lose any customization that you had created. It was a little slow I thought. Also, it is not going to be supported after the next release of our GIS server, so everything that we have developed to date using that method has to be recoded.

We looked at this ARC GS viewer for Flex, which is pretty neat and easy to do, too. It is precompiled code that you can download and then configure based on your data sources. It is pretty intuitive and responsive interface, but the big drawback that Roger was disappointed is that it requires Flash Player, so it might not be the end all product for us, but in the meantime it is a simple way to get your map services out to others on the web.

Just quickly, a comparison between the two as far as functionality, our GS server out of the box gives you zoom and pan and identify, print, measuring; that was all built in for you. Then the ARC GS viewer also has those, but there is also a community of developers who create widgets, which are little blocks of code that you can plug into your application and then that makes your life a lot easier, especially when you are not a super programmer like myself.

The Central Fish Habitat Service, as I mentioned earlier, contains the EFH and EFH-HAPCs that we have developed to date. I just wanted to show the examples. This was the dot net web ADF version; pretty straightforward, easy, and then this is the Flex. It just has an option for an entry page where this gives users a little short introduction on what this application is all about. I like that already; it is already improved in my mind.

This is your initial view that you would see with the EFH viewer. Right now it is displaying the dolphin/wahoo EFH-HAPC, and then some new data that Pace provided me, the EFH permits for the state of Georgia for one year in 2011. Those are coded based on EFH presence. Then down at the bottom – and I don't know how to pronounce this – Santé Tio Barge that recently has sunk down in South Florida, and we have some location information for that included.

How quickly you can add data is the idea there. The permit data was configured to display the attribute data for the SHAPE file that was created. You can see Pace was the biologist. I don't know, can you guys read that? Just information about the process; would it affect EFH, et cetera, what type of work it was. Then this is the Santé Tio's location, which has a link.

I hope your eyesight is better than mine, I am sorry. If you click on that, it brings up a picture when you click on the location; and then if you were to click on that link, then it will give you the full-sized image. This is a new data layer where we have added tilefish EFH-HAPC. I wanted to show Roger that is there.

Then with this option there is a cache service called marine habitat that is viewable in the EFH viewer, and this is a cached image service that Florida Fish and Wildlife has created. It is super fast but Florida centric. That is a neat option putting it in perspective with other habitat data. The Fisheries Service has some new SEAMAP species data, updated MARMAP species data, MARMAP gear types and new data layers for focal species distributions – I will touch more on that in just a minute – and some general base layers.

It also has a custom query for SEAMAP species catch data for the latest year that we had available, 2010. This is its entry page with links to the programs that provided data. This initial map shows us black sea bass points with a general distribution polygon in the background and some seafloor video locations there as well.

If you were to click on a seafloor video data point, it takes you to videos, and this is just a sample of one of those. This one was taken at Jacksonville Scarp; and another one from the razorback region. I picked the razorback one since I'm from Arkansas. This general distribution, it is not a polygon; it is all based on Raster data.

It was created using a workshop report that Roger sent to me and he thought it would be useful to create this type of data. The lighter-shaded polygon extending from North Carolina down to the middle of South Florida shows generally where the species black sea bass would be found. That darker-shaded color would show the dominant area where black sea bass are found, 32 to 33 degrees north.

Then there is also information for general spawning locations based on depth. The data sources for those layers I just showed were the South Atlantic Fishery-Independent Monitoring Program Workshop that was held back in 2009 in Beaufort. Then the global relief model was called ETOPA 1 that I basically clipped to the South Atlantic Council's jurisdictional area and reclassified for each species.

This is the table that I pulled the information from and showing for black sea bass it is generally found between 2 and 130 meters depth, but usually caught within 20 to 35 meters, et cetera. Those are how those layers were created, and hopefully they were useful. I created 14 different species. If they are useful and beneficial in some way, then we can certainly do the rest of that table. These are just select species that had a lot of good information in that report.

Then this is the same distribution areas but with that marine habitat map service displaying. The marine habitat service is underneath the distribution layer. It could be useful and you could use some of the tools that are available in the viewer to kind of capture in a certain area how much hard bottom is in this area and is it important for the particular species.

The managed areas again give an opportunity to view all of the Deepwater Coral HAPCs and their relationship to the allowable golden crab fishery areas, the shrimp fishery access areas and other South Atlantic Council restrictions, the Marine Protected Areas, et cetera. This is the entry screen for that particular service. I really like the ocean base map.

There are three different options for your background for the Flex viewer and this ocean base map is fairly new, so you get the features like the Blake Ridge and the Bahama Ridge, Lake Bateau labeled for you in the background. I think that is neat. If you click on the little fish up in the tool bar, it would show you all the seasonal restrictions in the South Atlantic Council's jurisdiction. This one is the red porgy.

The SHAPE file for the MPAs have information for linking to videos or images that were collected by Andy David when they were doing some mapping of the MPAs. Those images and videos are available through that service. The habitat service previously mentioned has lots and lots of good information in it; just not available to be out in the real world due to security issues.

We are working on that. If you wanted to add a service – if anybody uses ARC Map, I can send you specific directions, but you can pull in the services that I have just covered by adding a GIS server as a data source, and then it lists all the services that are on our system. We have the EFH layer is in there. It is SAFMC underscore EFH, fisheries and regulations, and then habitat is not displaying.

There is a secure services folder; I have been trying but it is not there yet. Basically the habitat service, this is an interface where our GS server is stopped; and the idea one day there is a permission's column there and then it will be locked and it will be password accessible. We have to secure that service and we've started the process. We have a reverse proxy that we have set up and that is the initial level of security that we needed.

The next step is getting SSL and HTTPS for that service so it gets protected accordingly, and that is just a diagram showing that we are working on it. This is an older graphic, but basically the same kind of linking of information with documents or images will be incorporated in this service as well.

This is just one of the SEADESC dive locations with information that they compiled in a larger report, so it is a summarized PDF of what they saw at that particular dive. Some recent updates to the different services; we have created that new tilefish EFH-HAPC; the new focal species, general and spawning areas, some SEAMAP data.

I have been working with the SEAMAP group for several years. They have been trying to get a data base up and going and we finally got some data to work with so we are excited about that. I have new data points for MARMAP, and the Georgia permits from Pace. I just learned this week, actually yesterday I guess, but early in the week on how to use your iPhone to access map services. I have got the directions here if anybody wants to learn a little more about that, I can share that with you, but basically it was a free Esri App available.

These are the Florida-specific cached layers that we have. We have one related to boating, we have an imagery one and we are going to make more and more of the services specific to Florida available through this. If the council likes this concept, we can certainly do it for your services as well.

Then quickly, this digital dashboard concept, I guess Roger and my boss Kathleen O'Keefe got together this summer – they are on the SECOORA Board together – and they talked about a digital dashboard and how great that would be for Roger's different projects. I wasn't at this meeting; I didn't really get it, and so I tried one approach and Kathleen didn't like it.

Anyway, it is a work in progress, but I think it is a neat way to kind of take what he is trying to do here tomorrow with the regional partners getting together and linking to everybody and making it easy in one location to find these different data sets that we are discussing. This is a first attempt to do this.

This is some code that I found on the web, and it is pretty slick. When you click on one of the content squares, it gives you a new page – well, I was going to explain how many grids there are up there. It is 5 by 12 so there are 60 different grids that are available on the dashboard. Actually let's just try this one; it should be fine. Each content area could explain a project and link to another partner's site.

This one is a jump board for all the services that I have just discussed. These can be changed and configured any way that we like. Roger and I were going to get together and we were going to plan this out, and it didn't happen so this is the best at it. These pictures you can scroll through. I think it is just a fun, neat way to compile sources.

MR. WILBER: I understand this is still something that you guys are working on, but it is something that can be accessed even now?

MS. UDOUJ: It is live, it is a demo, but it is no way near done. No, see there is lots of little squares that need some information, and I don't know what Fishery Alert System really is, but I know that it was one of Roger's topics that he wanted to highlight.

MR. PUGLIESE: Let me just jump in quickly. One of the really important things now is they are going to be able to build out these front ends that really describe how the links back in, and you will be able to access not only our services but other tools and capabilities throughout the region. I think it really provides that really broad scope of habitat and ecosystem and efforts.

As the links become really real, you will be able to jump back and forth throughout these different systems; and as we collaborate between all the different partners, a lot of these then hopefully can be sharing those for date, too, so we have don't have to have them living in multiple places and there can be having the access directly to say the fishery ecosystem plan or have – she mentioned the Fishery Alert System. That is a new system coming online that is going to actually be provided for fishermen to be able to get snapshots of local areas; zoom down and get surface-to-bottom temperatures on a gridded area, as well as provided for researchers.

If they are doing pre-cruise, during-cruise or post-cruise efforts, they can go into a local area and get a lot of the model outputs and oceanographic information out of SECOORA and other partners, and be able to rapidly get that, so that will be underneath this. But the opportunity to connect a lot of the fish information and species, the fishery operations information on a fairly rapid system where you can walk through it all and see at least a concept of what the digital

dashboard is. It is the first kickoff and move toward that type of effort. Before everything was kind of bundled and buried or had individual tier-making context of it all and puts it into that, at least a vision for the future.

MS. UDOUJ: Yes, so it is online and it needs work but, yes, Roger is going to tell me all about what to do. That is basically it; I think I have one more slide to share, and it is like what is coming. When we do upgrade our software from the current version to 10, there is going to be some neat features available.

One thing is like these links that I have been showing to the images or to the videos, those are actually going to be attached to the spatial data themselves, and that is pretty cool. Then map services will finally be able to expose relates or join tables that you might have with your spatial data. That is also very good news.
We hope the security for map services is easier with this next version of the software and lots and lots of widgets available. Yes, it is the tip of the iceberg as the community grows and the widgets grow, so it is pretty neat stuff. I would be happy to take any questions if there are any.

MR. WILBER: Any idea on things you would like to see added to this tool chest? Is it too late in the day to come up with ideas?

MR. DUREN: Just not a question, just a comment; nobody can say we are not balanced. On the one hand we are trying to save fish; on the other hand we are hearing all this good map data so it will be easier to find them and kill them.

AP MEMBER: I have a question about the Flex viewer. You mentioned it needing Flash Player. How come that might be an issue?

MS. UDOUJ: Oh, because Roger has an iPad. (Laughter)

MR. WILBER: Just to kind of give you an idea of something that Roger and I talked about a while ago was why those Georgia public notice dots were up on that map. One thing that we could do pretty easily is that Roger gets a copy of every comment letter our office sends out in the South Atlantic. You could click on those dots and see what the National Marine Fisheries Service said about that dot.

Sometimes that might be several letters or a single letter depending on the nature of the comments. Folks like South Carolina DNR similarly comments on projects and they distribute their comment letters by e-mail as well and you just add Roger to the list. You could eventually get to the point where if you want to look at the regulatory process and see what the agencies are saying about a particular project in your area, you could go find the dot, click on it and see everybody's letters.

I don't know if that would be useful to generally – I mean to us folks who prepare comment letters, it is always good to show your boss what the other agencies are saying if you are getting ready to say something pretty nasty about a project. That is useful to us to have, but we already get those comment letters usually. For people that are kind of outside that particular commenting

world, these are useful to see what agencies are doing. Is it of any value to do that? Apparently not.

MS. WENDT: I think it would be useful, but obviously I am in that sort of commenting arena, but it would also be helpful to be able to click on a dot and see what kind of permits have been issued for that area and be able to access the public notices for those permit applications.

MR. WILBER: Just to make sure I understand, if you are going to a particular location for whatever reason and then some kind of area around that location, you would want to know how many public notices or how many permits have been for that area over some time period.

MS. WENDT: Right, and they can be 404 permits or 401 water quality certifications or MPDES permits, that would be helpful.

MS. DEATON: We have talked about doing that in North Carolina with our permit data base but what we found was when you start looking, that even though – well, first of all, they didn't use to put down lat and long on these permits, and now it is a field, but sometime they just are so busy they don't fill out the information completely. We usually don't even have lat and long on a lot of these.

MS. WENDT: What about fish kill database? I know somebody I believe with NOAA was compiling fish kill data from DHEC, fish kill response records and trying to compile a geo-reference database for that. But that would be almost entirely inshore waters, very few marine fish kills, at least in South Carolina.

MR. WILBER: Any other ideas? If not we can break and send some to Roger through other means.

MR. PUGLIESE: Yes, and we are not trying to put everybody on this. This is a lot to see here. You are going to get kind of a little bit more in the lunch session tomorrow and then a live presentation of this and maybe a broader view of the different components that some of the partners are going to be talking about through some of the other systems that are available and connected.

This is the first opportunity to look at it, and at the end of the day tomorrow if you think something, too, that can be raised in the session at the end of the overall effort you may think past where we are at right now. There is a lot that is under development here. One of the biggest things is these Flex system services are fast.

It is amazing that fishery access, Fishery Alert System is processing amazing amounts of model information and able to pump it out and give you a snapshot in a very short period of time, something that you would never be able to do in the past. These kinds of tools I think you are going to really get this kind of information out and available; and as we have these discussions, refine it.

One of the things I think we want to do, as we have done in the past. is look at hopefully the first part of next year having a workshop to refine this. Maybe some of the members of the AP or the technical members in the individual organization can participate, and really kind of set forward a vision for further refinement, updating and getting to some of these discussions on mapping efforts, et cetera, so we can talk about how something like that could be put together. It has helped in the past to take it to where it did before, but this is a whole 'nother creature here and a real opportunity I think with the way this is evolving to really craft even more of a partnership in our region.

DR. LANEY: Thanks, Pace. Wilson Laney, the Fish and Wildlife Service representative on the Council. One thing I will mention, especially for those of you who may not be aware, is that the Fish and Wildlife Service has been beefing up its refuge inventory and monitoring capabilities. To the extent that refuges are within coastal areas, I guess we will try and make sure that the council is aware of any inventorying and monitoring efforts that may be germane to the council's interest and try and provide that information to you as well.
MR. WILBER: Okay, I think we are done for the day.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Charleston Marriott Hotel, Charleston, South Carolina, Wednesday morning, November 16, 2011, and was called to order at 8:30 o'clock a.m. by Chairman Pace Wilber.

MR. WILBER: Two sort of bookkeeping items before we go around the group and reintroduce ourselves because of the new folks that have joined us for the second day of the AP meeting. The first bookkeeping item is when you are not a speaker and you are going to later on ask a question, it will help the transcriber if you identify yourself by name so that is in the record. It makes it easier to put together the transcript from the meeting, so that would be helpful.

Then the second item is that I have been told by the council that several of you in the room have your term as an AP member coming up fairly quickly or ending fairly quickly and that you have been sent instructions and materials to reapply to continue for another three-year stint on the AP, and that those application materials are due back to the council on Friday of this week. If you are one of those folks, you have received that package; or if you are not sure if you are one of those folks and think you maybe should have gotten the package but didn't get it, please talk to Kim Iverson or to Roger as soon as you can, either today, tomorrow or certainly by Friday when the applications are due.

That said, for the bookkeeping items, we need to go around and do introductions again. We have several new folks from the various partnerships in the South Atlantic that have come to present to us today and they didn't get the benefit of yesterday's introduction.

(Introductions were not recorded.)

MR. WILBER: Okay, so the general aim for the day and morning session Roger will provide to us.

MR. PUGLIESE: Good morning. I appreciate all the effort yesterday and we move into the second day of the Habitat Environmental Protection Advisory Panel and the opportunity to integrate into this meeting what we called an Eco-Regional Partner Coordination Meeting.

What we really wanted to do is we have been working with our advisory panel for years on facilitating habitat conservation ecosystem management and collaboration throughout the region. There are a number of different activities, operations, organizations that have been progressing and working with the council and working with other partners in the region that this meeting is really trying to highlight for both the advisory panel, the council and between the different groups that are involved to more fully engage the council and our partners in the region on the move towards ecosystem-based management, towards spatial management, and planning.

Today's meeting will highlight a number of these different groups. The idea is to get an idea of what the organizational responsibilities, the components to look at the capabilities, also to identify opportunities for collaboration. We will kind of get a synopsis of what the group is, where it is going, and then really look at some opportunities to integrate between and with the council. This really is a unique opportunity.

The Southeast Region has just so many things moving in one place we can have the opportunity to have very good cross sectional collaboration, to understand our region, understand the development and how things are going to affect fisheries, how they are going to affect our long-term habitat conservation, and also plan and manage in a more effective way.

This is really a springboard to make that happen, to bring both the operational capabilities, the technical capabilities, and the focus and vision for our region together at one point. Today this is kicking it off and with that I will pass it back to Pace with the introduction of the first speaker for SECOORA.

MR. WILBER: Our first speaker is Jennifer Dorton from SECOORA, and she will talk about the SECOORA Strategic Plan and state and regional coordination. As she is kind of moving over to Roger's seat, I will just say that while I personally have not had much contact with IOOS and its development, my office for many years was adjacent to the fellow who was responsible for putting together these regional associations and all of their grant and other funding infrastructure.

He tended to work very late hours, somewhat similar to mine, and so we often had many, many late night conversations during the early days of IOOS. It was really great to see how this stuff has really kind of matured into a nice set of regional associations with clear direction and is now reaching out to provide a lot of uses well belong the original physical oceanography that they were intended. So with that, Jennifer.

MS. DORTON: Thanks for having me; and as Pace just said and Roger, too, everyone calls it SECOORA, but just so you know SECOORA does stand for the Southeast Coastal Ocean Observing Regional Association. SECOORA is just a lot easier to say. Just to give you a little bit of a background, the 2009 Integrated Coastal Ocean Observation System Act established regional entities that are supposed to collect information, including in situ remote and coastal and

ocean observations, provide technology, data management and communication systems. They are designed to meet regional needs.

It is sort of broad language that did establish really the regional associations of which SECOORA is 11 that fall under the NOAA IOOS Office and that is how we predominantly get our funding. But if you notice also under aid, within this Act there are a lot of things that we are supposed to be supporting; national defense, marine commerce, navigation, safety, weather, economics, ecosystem-based management.

There are a lot of areas that really fall under this Act that the regions are supposed to prioritize and address. Unfortunately, we can't do it all, so the areas that are underlined are kind of where SECOORA said, well, we will start here and that will give us a foothold in our region and we are going to try to figure out how we can maybe work with ports or the weather service to help with marine commerce and navigation safety and how can we work with SAFMC to start addressing ecosystem-based marine coastal resource management and let's start trying to focus what we are doing.

You can't take a shotgun approach; we really need to tailor it. Those underlined areas are where SECOORA said, well, this is where we will start. If you notice our region covers North Carolina, South Carolina, Georgia, Florida. We actually go all the way around to the west coast of Florida through the Panhandle. To our north is the Mid-Atlantic Regional Association. The Caribbean also has the Caribbean Regional Association, CARA; and then the west coast of Florida gets covered in SECOORA as well as GCOOS, the Gulf Coastal Ocean Observing System.

There is a bit of an overlap on the west coast, but I am going to say it is pretty understandable since a lot of what happens in the Gulf is also very important on the west coast of Florida. That kind of gives you an idea of where we sit in the southeast. As I said, we are primarily funded through NOAA, through the NOAA Integrated Ocean Observing System Office.

The 11 RAs are nationwide. They cover the Pacific, Alaska, all the way through to the Caribbean. We are membership-based and SECOORA has established itself as a nonprofit organization. Our goal is to focus on integrating coastal and ocean-observing data. That is kind of a broad statement and I am going to kind of tell you more about that as we go through.

We do have a pretty set structure. We have a board of directors and we do have staff. We have policy and program committees. The program committees really help us focus on what science questions we need to ask, so that is our science committee. Our operation and maintenance committee says, okay, with the science questions you want to ask, here are the types of systems we can deploy to help get the information that you need.

The data management side deals with all the data that comes back through those observing systems, and our outreach and education committee makes certain that we are engaging with stakeholders and we are also working with the education community. We have a large membership sector from the academic side.

I think that is originally because, as Pace pointed out, this was very grant-funded in the early days, it still is grant-funded, and those grants went to academic institutions. Now as SECOORA is sort of trying to coordinate everything in the southeast, we are trying to bring in other groups other than just the academic community, because we really need to have more user buy-in from nonprofits, from private agencies.

We also have affiliate groups, which aren't listed here, but I will show you those in a moment. One of the reasons to become a member is because you then get to provide input on the data and data products that are developed within SECOORA. You can help set priorities. Without Roger's input, we may not be addressing fisheries to the level that we are going to be doing it in the future. That has really helped is to have user buy-in to the project.

Just to kind of overview what you cannot read at all – I didn't realize how bad this slide was going to be – this just lists who our membership is. Everyone in yellow are actually board members. We are kind of board heavy; we have a lot of board members. But if you notice, the affiliate members are mostly other federal organizations who help us make certain our priorities are staying in line with their agency priorities in the southeast, also.

That includes NOAA SECART, the Southeast, Gulf of Mexico and Caribbean Region, National Marine Sanctuaries Offices, USGS and AOML. We receive about two to three million dollars each year. We have kind of got caught – as most all of you know the federal funding cycle hasn't been great. NOAA says, hey, give us a grant to cover three years and you can have up to $10 million, and then they finally get their budgets and they, say, well, actually you can only have two. We get caught in that a lot.

We have been having about two to three million dollars per year is what our budget has been. Our monitoring and observing side takes up about 45 percent of our budget. The goal with IOOS is to provide data and data products to meet end user needs. They don't really like you to write in there that you have to keep all this mooring systems maintained and you have to have technicians to help keep it going.

It is a large part of our budget, but it is just sort of the nature of the project, I guess. We have a large modeling component. We have inundation and surge modeling, circulation modeling that have been ongoing for about three years I think those have really been up and running; and working with the Army Corps of Engineers, USGS, and other federal agencies to make sure those models get into the hands of the people that need them. We have some upcoming modeling efforts that are going to be going on which are, sea level, ecosystem, and harmful algal bloom hypoxia modeling. We started off by creating a strategic priorities document that really lined up with that ICOOS Act. We broadly defined what our initial priorities would be.

This document we really wanted to use to give out to folks that are SECOORA members or potential SECOORA members, regional stakeholders and decisions-makers. This was a document that we could use to kind of explain what SECOORA is, explain what we are doing in the region and where we want to go.

After creating that document, we have had a couple other items or things that have occurred. I am actually going to address the second bullet first. SECOORA in that ICOOS Act was basically along with all the other regional associations, we were informed that we needed to develop a build-out plan and conduct gap analysis, and that gap analysis says where do you need data that you currently aren't getting it; for example, off the east coast of Florida.

Then what models and products are out there, and then how do you fill needs where you have gaps in those models and products, so the gap analysis is sort of twofold. The build-out plan I am going to discuss further on. By working with that build-out plan, we have been able to kind of focus our areas a little bit more. We have also started working with the Governors South Atlantic Alliance, and I know we are going to have another talk about that soon.

But SECOORA is participating with the South Atlantic Alliance and we want to make certain our priorities are also in line with theirs, because there is no point in both groups sort of doing parallel efforts or not working together, because they are both receiving NOAA funding in the region and it is a good opportunity to work together.

Some of the fisheries projects – and I have already told Roger I might have to throw him under the bus on this, because these are projects that are just newly developed. I was working with SECOORA and then took a break from them and ended up helping out the NSF-funded OLI Project, and now I have come back to SECOORA, so I am not as entirely certain about these two projects, but I am going to give it a shot and if I do a bad job Roger can jump in and save me.

The first one is we are looking to develop data products from satellite in situ observations that may help with fishery stock assessments. Right now there is a lot of satellite remote sense data that isn't necessarily always used as we develop models. If we do hind casting or forecasting, we really need to start coming up with ways to pull that data into those hind cast, forecast, and out cast. This first project is going to help us with that.

The second project is developed by FWRI and SAFMC is included in helping with this project, too. They are developing a prototype to link real-time sea-state data with fisheries data. The goal is sort of twofold. One is you would use models to help fisheries managers maybe understand fish ecosystems better, but at the same time whenever the fishery folks are going out and doing their surveys they can feed data back to those data managers.

They can take data they collected on site in locations where we don't necessarily have buoys or moorings or data coming in and feed that data back into the model products. Roger, did I do an okay job on that? Okay, the last one is an observation alert system. While I have it listed under fisheries projects, it is really pretty broad. This product is if you go in and you select a platform that you are interested in, so if you live off of this Charleston area you are interested in knowing what is going on at the Capers Island Buoy – it is about five miles offshore – you would list that platform and you would put in your e-mail address, and then it is going to look at – our data management system will say, okay, here is all the data that is available off that particular mooring; let us know when you want an e-mail alert.

If you want an e-mail alert when winds are above 25 knots blowing out of the northeast, it sends you an alert and says, hey ,look, you have reached this threshold at this location. This also has a fisheries focus because you can sign up for information, or Roger can go in and say I need to know any time waters temperatures are above 18 degrees Celsius at certain locations. He is going to get that alert and that is going to let him know, hey, I need to start paying attention to water temperatures in a certain region. This is sort of a multi-faceted project example.

Some other project examples we have had is the Build an Observational Buoy, or the BOB buoys. These are K-12 and university classroom-based education projects where you get students to build buoys, literally, and then we help them provide instrumentation for them and they can go out and actually address research questions.

We also have some water quality modeling that started in South Carolina and has actually moved across different regional associations now. South Carolina DHEC basically had to go out anytime – they would go out and take physical water quality samples. They send them off to a lab to get processed. After they are processed, they may find out maybe the bacterial levels were too high.

At that point people have already been in the water and they may have actually already left the area, they were there on vacation, so they needed a way to get those public health alerts out earlier, so they set up a modeling project with SECOORA members and have effectively done that.

We also have the marine weather portal which was linking SECOORA members with the National Weather Service. We know that boaters and mariners typically go to the Weather Service to find out what sea conditions are like and what forecasts are like. We wanted to make certain all the data collected in the SECOORA Region is being fed to the National Weather Service so that they can then incorporate that data into their forecast.

That has been a very successful project and has actually gotten traction nationwide now. Then we have a lot of folks involved in oil spill response in the Gulf of Mexico from Deepwater Horizon. Everyone from researchers to vessel captains from our region have gone and participated. Coordination with the South Atlantic Alliance, in this respect we are really working with them.

Our data management side within SECOORA is working with the South Atlantic Alliance to develop an information management system to meet the needs of decision-makers in the four-state area. Representatives are from North Carolina Department of Environment and Natural Resources, South Carolina DEHEC, South Carolina DNR, Georgia, Florida; you can see the list on bullet two.

But we are working with them to decide or to help them – we are working with them to make sure that the data we collect is also available to them. We also want to know what existing data sets they have they use to make decisions and figure out how to augment those with SECOORA collected data. Then we are also going to work with federal agencies to coordinate these activities so they can provide input on what is going on.

Initially what we are going to do is do an assessment of user needs, and user needs may be from state agencies. For example, we are going to talk to the folks at North Carolina Department of Environment and Natural Resources and say what are your data needs, what are your product needs, your model needs to help you make decisions? Then we are going to also look at what areas of concerns they have.

In North Carolina they may need to know more about what is happening maybe back in the Sounds, in Georgia they may have a little bit different focus, but we are going to try to find commonality between the four states and create one or two products developed based on this information management system that we are going to create.

Then hopefully we will get down to Objective 4, and we can say here is what else we can do if the South Atlantic Alliance continues getting its funding, here are other products that we can develop along with them. There is just some background on SECOORA, some of the connections we have made in the community and some of the successes that we have had.

I am just going to give you a brief overview – and I am hoping I am not taking up too much time here – on our observing and modeling capabilities and our build-out planning. With our mooring systems we do have piers and buoys that are operated by universities predominantly. We also have high frequency radar that is being operated by the universities as well.

High frequency radar, for those of you that don't know a whole lot about it, it is basically the bottom picture. It is an antenna; there is a row of antennas set up along the beach. They are using radar to look out across the ocean surface out to about 200 kilometers, and they are able to determine what the sea surface temperatures – not sea surface temperatures, I am sorry, surface currents are and to some degree rough estimates of wave heights within that area, too.

You can't put a buoy every three kilometers or every 10 kilometers, but the HF radar allows you to kind of increase your spatial and temporal resolution of data that you can get back. The buoys are great for a point measurement; HF radar gives us a broader area that we can look at. The data management subsystem, basically they do everything with the data that SECOORA collects.

They get it in, they QAQC it, they make certain it gets to regional data providers that need it. It goes to the SECOORA website. And examples of regional providers, we make certain that all of our data is fed to NOAA's National Data Buoy Center, so that it is then available to the Weather Service. We also work with project partners such as the Army Corps of Engineers. They have had modeling projects that they have had ongoing and they need data at specific locations.

We make certain that data can get to them in the format that they need, and it undergoes a quality assurance and quality controls that they require. We really work with as many partners as we can to make certain we are providing all of our observations and we are benefiting this region. Roughly we get 5,000 observations per hour. Our data management staff are predominantly overworked and underpaid, they would probably tell you.

Some of the modeling activities that are ongoing in the region, and these are just two examples, the top right corner is a Coastal Circulation Nowcast/Forecast System for the South Atlantic Bight and Gulf of Mexico. This project had I guess got really started probably around 2004, 2005, and has evolved over funding cycles I guess. But this project has been very integral to helping look at harmful algal bloom trajectories off the west coast of Florida.

They have also used this trying to determine where the oil would go from Deepwater Horizon and trying to map surface currents to kind of show where the oil may end up. The bottom left is a GIS-based project. The image that is kind of hard to see down around the Florida coast area; at least on my screen there is a large blue section that shows where some of the deepwater coral – not deepwater, excuse me, coral hard bottom areas are.

Then with the GIS technology you can overlay sea surface temperature data, you can also pull in all your data points from moorings, coastal stations, anything that is available in that area so you can look at what is happening within those coral areas. Then we have lots of different applications for this. It is a neat tool; you can go in and play with it. It is available to the public. You could go to the SECOORA website, it is SECOORA.org.

Go to data and maps, you can explore real-time data, you can explore model data, you can sign up for your real-time alerts, you can look at partner websites. Everything is there that you may be interested in when it comes to the data and model activities. Then interactive mapping, this one was just kind of showing you our whole area, and you can see different buoys and you can go in and graph and download information.

It is a good way also if you just want to get a time series of data from a certain location, you go to the SECOORA website interactive mapping and then pull that data straight to your desktop in either an EXCEL format or common separated file, CSV. Quickly, our final two subsystems are education and outreach and our governance.

We have strong partnerships with Sea Grant, COSI and the other SECOORA Regions. A lot of our education projects get spun up with us and another RA collaboratively, so that is how we try to work with educators across the country actually. Then our governance subsystem really makes certain that the operations of SECOORA, the staff are paid and everything is being taken care of, all of the grant management documentation is being worked on.

Planning for the future, our ten-year plan, this is our build-out plan. The ICOOS Act required that we do a build-out plan. From July to September we developed our initial build-out plan. This is describing our monitoring, observing and product needs for the next ten years. This is an initial plan; I want to reiterate that. We are really just getting started on this.

We are going to be further refining it over the course of this next year. The uses for this build-out plan are support budget and proposal requests. NOAA really wants to know what is it we want to do, how we plan to accomplish our goals, what science are we addressing, what science questions are we addressing, and this build-out plan is helping us do that.

It is also helping us engage stakeholders to find out what their needs are and inform them of what we have available and keep them engaged in the process. The build-out plan basically says what are our product needs, what are our users saying that they need, what is the temporal and spatial resolution for their data needs, what type of models do they need, what type of decision support tools do they need, what are the operational requirements?

You know, we may find that say the Weather Service needs real-time data, but some of the fisheries management side may be okay with non real-time data or data dumps that occur every day, that collect over the course of a day and dump on a daily basis. We really need to determine what that is because of cost. Costs for keeping a system going real time are quite high. When we don't need to use real-time data, it helps us leverage our funds, it helps us be more I guess cost – well, anyway, it helps us save money, I guess.

We are going to define the infrastructure, also; what types of platforms do you need? If it is a real-time buoy, that is quite different than using glider transects to look for oil spills. Also, what personnel and services are required? Everything we do right now, SECOORA has a very small staff. Most of the staff is paid for at universities and nonprofit agencies that we work with.

We use their staff, and we need to make certain we have the personnel on hand that can make certain that those systems are always running, that can go out and deploy gliders and recover them, that can download the data and make certain it gets into the SECOORA management side. Then on the mapping infrastructure, that kind of goes into our gap analysis of where do we need more data, where do we just have nothing?

Like I said, the east coast of Florida I know needs a lot more infrastructure deployed in that area. The build-out plan, as I said, this is a first draft. It was sent to NOAA for their cost estimators to review. Right now our Science Committee will get this plan next and the Science Committee is going to then go through this plan and help us prioritize what we want to address first, what our goals should be.

For example, I do have copies of it if people would like to take a look at it. While technically it is not publically available, I can definitely show it to you in here if you are interested. For example, in this one we are looking at sustainable fisheries. We have four different areas that are listed here, for example, linking biological and physical data to stock assessment models.

The product level on this is listed as a 4, which means it is a model data. Our product levels run anywhere from just raw data, like a lot of folks just want raw data, to data this QAQC data, the products and then model data. Then we want to make certain we have our primary stakeholders listed that we were not doing something just for the sake of research, more or less. I mean that is really great but you really need to also have stakeholders that are vested in what you are doing.

Then our geographic coverage area, for this one we are covering everywhere; from the open ocean offshore all the way back to the inland areas and all four states. This is helping us figure out who our primary users are, our geographic coverage, what types of data are needed and what types of model products are required.

We are doing this in every area that SECOORA is trying to focus, so we are using fisheries, we are looking at water quality, weather and marine safety, and the other three or four areas of SECOORA's primary interest. The build-out plan next step is the Science Committee is going to focus on addressing data model requirement overlaps between theme areas.

We may find that a lot of data that is needed such as surface currents which are needed for fisheries may also be needed for search and rescue operations under marine safety. Where we have commonalities, it helps us sort of realize an economy of scale. We are able to address multiple themes with strategically placed assets.

Then we are also identifying additional partnerships opportunities; how we can combine our data, provide our data and meet other goals from state and federal agencies. Under partnership opportunities there are lots of ways to get involved. Folks here that are on the state level, if you are interested in learning more about the data and products that SECOORA is able to develop or what we already have developed and what we might be able to do with you, please let me know.

We are very interested in increasing our stakeholder buy-in to SECOORA I guess is one way to say it. We want to make certain that folks know what all we have to offer and the data and data sets that we have to offer that might help you in your region or your state. My contact information is up there, but Debra Hernandez is the Executive Director for SECOORA. Her contact information is up there as well. If anybody has any questions, I would be happy to take a couple, I think we have a few minutes.

MR. MIKELL: Jennifer, my question to you is with all the information that you have gathered in the last few years, what I want to know is what is the state of the ocean's health off the South Atlantic Bight.

MS. DORTON: Roger, do you want to take it?

MR. PUGLIESE: Yes, let me just jump in quick. Jenks, that is one of the things I think that this evolution and development of information for SECOORA is getting to, is to get baseline information. Actually there was a State of the Ocean's Report that was integrated into I think the first – it was one of our appendix in the FEP. It combined at least everything that was available in the preliminary.

The precursor to SECOORA, which was SECOOS, which was really the original individual academic modeling and collection information system, it has gone beyond that and it has been discussed before about trying to get another iteration of that type of thing that gets you a baseline of what we know and what the status is and characterizes all the different parameters.

I think you are going to see the next state of creating some type of a documentation of it. There has been more emphasis on getting everything operational and getting modeling developed, getting the collection developed, getting everything further along and we are at a critical stage. I think Jen was really clear about that next step of getting stakeholder involvement and getting characterization.

I think it will get exactly to these types of things, not only knowing what the state is but how that is changing, and then how that information can be used by the stakeholders, participants and fisheries, et cetera. That is at least my view of how we are going to get to the next stage. We are way far beyond where we were before in terms of actually producing that type of thing with SECOORA. I will just pass it back to Jen.

MS. DORTON: I will say that one of the things that SECOORA has had to overcome I guess is the way that funding occurred, and this is nationwide, not just in the southeast. Originally the IOOS grants were given to universities, and the universities said, hey, this is what we are going to address, this is the assets we are going to put out, and this is the type of data we are going to collect.

But what we did say at the University of North Carolina-Wilmington was not what was happening at the University of South Florida. Now whenever SECOORA has come through and they are trying to get all these organizations working together, we sort of have some historic issues that need to be overcome.

I don't mean that in a bad way; it is just that with UNCW we use to do a lot of transects, water quality transects, and a lot of fishery sampling. Then as SECOORA has pulled things together, we have had to maybe reprioritize what our actions are and what our activities are. I think we are working towards that. But like I said earlier, right now we have been very academic focused and single researcher focused. I think that is something we really have to overcome so we can do a better job of addressing and say what is the state of the whole South Atlantic Bight.

MR. MIKELL: Well, maybe I am wrong, but by watching all of those slides, I felt like you were really looking for funding anywhere you can and that is what your primary objective is right now. What I want to know is what the state of the ocean is. I am a bottom line kind of guy.

MS. DORTON: Right. I would say that we are working towards coming up with an answer to that. I don't think we have it yet. If you noticed where we saw the build-out plan, we are trying to figure out where we are going in the next ten years and a gap analysis to look at where we just don't have data. There are a lot of areas that we just don't have information.

Until we can start gathering that information and pulling it into products that are being developed, we are going to have a hard time determining the state of the ocean. We are going to be able to day, well, off North Carolina we have got this going on and off Florida we have this, but in between we don't really know because we do have those gaps that need to be addressed, and that is what this build-out plan is set up to do.

MR. PUGLIESE: Also, I think I said it before, but I will reiterate it, we are at a critical point with this ten year build-out. Before, when it was looked at about how to evolve and how to take to the next stages of information gathering, fisheries was not really high on the radar of those discussions.

It was really, as Jen indicated, focused on university operations, really kind of focused on individual components. It has finally evolved to the point where that transition has made it all

the way to people are understanding that if you are collecting information for fisheries, you may be collecting it – as also indicated, it may be key components for any of these other different efforts. It is going to push this effort along.

I think we are going to see some of the next stages really focusing on filling in the gaps, getting the information and integrating. I think that focus on user needs and management needs is a major effort here, especially with regard to fisheries. You are going to get not only the broadest sense of what the ocean is, but also operational capabilities of integration of this information in the stock assessment use and better defined what fishermen need for fishing offshore, recreational and commercial fishing; alert systems, different things like that.

I think now is the time that we really can see and guide how we can get the best information. The beauty of this is that a lot of that foundation with those original funding mechanisms really set the stage for capabilities and model capabilities. Now we can refine it and expand it and take it into a more of an operational mode right now, which will get what we need to do.

Getting that highlighted and pressed as we move this forward is going to come up with products and capabilities that are going to really be tailored to long-term use. I think the success of this moving forward is the fact that it has been connected to things such as fisheries as a major component of what is going on, connecting ocean observing as a priority to try to get better information for our region.

MS. DORTON: This is where I am not as good and this is where I am going to throw Roger under the bus. Like I said earlier, I had worked with SECOORA for a while. Actually I am a UNC-Wilmington employee. I had worked with SECOORA for a while, and I left them to go work with the OOI, and I have been with them for a while, so I am just – today is my day back with SECOORA. A lot of the ecosystem modeling activities have occurred while I wasn't on board, but Roger unfortunately I am going to make address this.

MR. PUGLIESE: Well, I think what you look – let me address it from kind of a modeling toward than ecosystem modeling. What you have under SECOORA is you have the ability and the capabilities that are building the environmental models, that are building your wind models, temperature models, and all the base components that are then being looked at as feeding into combined with biological models.

This has been something that has been on the table and did not get funded earlier on was try to begin to integrate those modeling capabilities into biologic. The first effort that she had indicated was to look at combining that information with biological information, species distribution, habitat distribution, and starting to look at those connections; really get SECOORA and the oceanographers involved in the discussions and stock assessments in trying to move forward.

One of the first things that we had talked about before, it is not going to craft out of this iteration but I think will be in probably a future one, things such as building indicators for, say, gag grouper. Temperature-based indicator for gag grouper on recruitment success is something that I think can reasonably be done with the type of capabilities, with the modeling that exists, and

better integration with some of the capabilities and information that is in the fishery side. It is again those first iterations.

I think I know where you were going in terms of the broadest sense model. What I really want to see is that we are at a stage with some of these model capabilities of SECOORA, for those to get integrated into things such as Ecopath and Atlantis, and some of the other bigger models that have the ability to ingest it.

I think those are refined enough that now those actually can be input parameters into those. What I want to do is to engage SECOORA and other partners to take those next steps, because we have been trying to look at the next generation of Ecopath and other broader sense models. Now is the time that we can see because both those model capabilities have expanded. SECOORA's refined information on environmental parameter inputs have evolved.

Our fishery-independent systems are evolving and unified. There are a lot of things that have changed from our last iterations where we looked at ecosystem models. Maybe through collaboration and funding through a number of these different groups, SECOORA included, we can get to not only integration into stock assessment modeling, but some of these broader ones such a new generation of an Ecopath or EcoSim we could assemble for the South Atlantic Region.

MR. DUREN: Jennifer, I have two sort of simple operational questions. First is your member organizations are doing lots of projects that fall under the umbrella of SECOORA. I assume that SECOORA is not funding most of those; they are being funded by various other sources, is that correct?

MS. DORTON: Yes, it is. For example, from UNC-Wilmington, SECOORA basically is the funding source we have to keep our operational activities ongoing. They are still enabling us – or funding from SECOORA is enabling us to go out and keep seven weather buoys operational, allow us to keep collecting data throughout the river plume off of Cape Fear River, but then we leverage those funds to then get additional funding, I guess.

With SECOORA's buy-in the region, a lot of the other universities are doing the same thing. We have got a way to use funding from SECOORA to then leverage it to say do projects with the Army Corps of Engineers.

Well, we then also have the Army Corps of Engineers coming to the SECOORA meetings and say this is what we are doing, this is how we are working with you, and we are using the data that SECOORA provides to develop these types of models. That has been going on to have actually NOAA-funded projects, such as Rick Luettich with the ADCIRC model. That has really enabled us to sort of leverage our funds and to get more bang for our buck, I guess.

MR. DUREN: Thank you, and my other question relates to data management. Does your data management group try to analyze and do any overlays or anything with the data or are they just storing it and making it available to other people to do that?

MS. DORTON: This goes back to our data management crowd being overworked. They are doing all of it. We have got a core group of folks predominantly at the University of South Carolina with hubs in each of the – actually hubs at FWRI and University of North Carolina. Those folks have set up a lot of the just on-the-fly data quality control to make certain that all the data comes in, gets cleaned up, flagged if it looks like it is bad.

They then make certain the data is archived. Then they also worked with SECOORA projects that were funded in this last IOOS grant to make certain that those data are then being used to develop GIS applications and developed into models. They really are kind of doing everything. They are wearing a lot of hats.

(Question asked off the record.)

MS. DORTON: There are two types of high frequency radar, CODAR and WERA. CODAR is basically – I might have this backwards – one of them is basically just surface currents and some rough wave estimates. The other one is able to actually do a lot more. They are able to not only do surface currents and waves, but they are also able to look at ship tracking.

Large aggregations of birds, I think if it was a large enough aggregation they would be able to determine that in this area there is something going on. I don't necessarily know that they are going to be able to get it down to species, but they could at least based on the signal that comes back determine that there is something happening in a certain area.

DR. LANEY: So I am on the record, I had a practical reason for asking that question, and that leads to my comment is that the U.S. Coast Guard is very much interested in these models and the habitat species models for totally different reasons than we biologists are, and that is for law enforcement targeting purposes.

They recently contacted me in particular about striped bass on the east coast and targeting law enforcement operations in Virginia and North Carolina during that winter fishery so that is something you and I can talk about offline. They are already working with other folks on the west coast to do this for tuna on the West Coast. We started a dialogue with them, John Ellis and our GIS person Doug Newcomb met with them a couple weeks ago, so we can talk about that.

MS. DORTON: Yes, because right now HF radar is being used predominantly with our connection with the Coast Guard for search and rescue, to help refine search and rescue areas. It would be interesting to find out what other areas they are interested in using it for.

MR. PUGLIESE: Quickly on that same point; that is something that has been pushed at the board level is the opportunities to look at HF radar. You have a technology that is able to differentiate one centimeter wave heights. In the Mid-Atlantic the Coast Guard is already looking at integrating that for their efforts in the Mid-Atlantic with reduced search times, et cetera.

There are some opportunities to step forward, especially the vessel monitoring opportunities in the southeast. That is something I think we are going to definitely investigate and see especially

as you look at building out a fully operational HF radar system. Then you could potentially really highlight opportunities maybe for monitoring some of the existing protected areas and closed areas, et cetera. I think it is going to be an important and definitely is highlighted for really investigating the opportunities for everything from biologic to vessel monitoring capabilities in the future.

AP MEMBER: All this is really fascinating and welcome. I guess my main question is how are you going to get this information in the hands of just fishermen like me? Just for some background, I write for about a half dozen different recreational fishing and diving magazines, surfing magazines. Jerry Ault once paid me the most backhanded compliment ever; he called me his favorite through-put for scientific information.

We have been doing some cool things like I did this TV show in the Gulf where we talked about Oscar, the gag grouper, and explained the whole life history. I spend a lot of time teaching anglers about how stock assessments work or don't work and about their life histories and things. It seems like that a lot of the focus here has been on how do we integrate the models, how do we get the various academic institutions and the government agencies to work together. Have you thought at all about how you are going to relay this information in some digestible way to the public?

MS. DORTON: SECOORA does have a Stakeholder Advisory Council. The goal of that council is to make certain that they are engaging the public and they are engaging fishermen, they are engaging all of the folks that we have listed as our users to let them know about what we are doing. I will say right now our Stakeholder Advisory Council is not the most robust. I think they are trying. They are looking at areas that – right now we are working with folks that we know are going to be targeted for projects that are under development.

For example, South Carolina DEHEC on the water quality monitoring, we work very closely with them. As we develop more fisheries products, we will start engaging the fishing community a lot more. But those products are not – as Roger said, had not been funded in previous iterations. They are just now getting funded, so we will start working with the fishermen.

I know like in North Carolina I worked a lot with fishermen just to let them know about the data availability by working with major websites that reach the fishing community. That is one way we can target that. We can also work with folks like you that are journalists, if nothing else to let you know what we are doing. It may be worth a write up. We will start pushing that a lot harder as we start building out more fisheries based projects.

DR. REICHERT: It is more a couple of comments, and maybe we can pick this up later when we discuss the integration. I think we need to be realistic in our expectations of the use of the SECOORA data in stock assessments especially with the current status of the stock assessment process or the development of the stock assessment models.

I think a bigger issue is that we probably need to discuss or at least be aware the effect of the SECOORA products on catchability issues. We had a huge issue, for instance, when the GPS

came into play, and there are all kinds of indications that has affected the catchability and that affects stock assessments.

It is very important that we document when certain products became on line so we can then look at that and then analyze that, so that is important. Relative to that I think it is also important to investigate how this information is being used and how it fits in regulations, because we may find out that the additional information may affect how we manage the resources. We may face that we are countering the affects that regulations are trying to accomplish, because we are providing more information, we would be providing detailed information. I just wanted to mention that may be something worth discussing in a later phase.

MR. WILBER: All right, thank you, Jen. We are going to move to our next speaker, which I think is going to be a team presentation on the South Atlantic Alliance, beginning with Carolyn Boltin-Kelly. She is erroneously identified in your agenda as a South Carolina DNR employee. I am sure she is going to be very important to make that correction.

MS. BOLTIN-KELLY: I don't know, given what is going on right now.

MR. WILBER: As many of you know the South Atlantic Alliance has been spinning up over the last few years and is modeling itself after several other regional governor-led, state-led alliances. They are carrying a lot of sway within the federal government as how individual agencies set priorities for interacting in the coastal zone and in the ocean waters. With that, we will turn it over to Carolyn.

MS. BOLTIN-KELLY: Good morning; thank you for having me here. As Pace was saying, I am with South Carolina DHEC and not DNR although I did call John Frampton this morning to see. There has been so much talk about reorganization and restructure in South Carolina, I wasn't sure, I never am, what is going on. We wake up each morning trying to figure out which board, who do we report to, and what is going on?

There are so many shenanigans going on right now with elections coming up. I run the coastal program for South Carolina, so that is the CZM Program; I oversee that. We have got an office in Charleston, Myrtle Beach, and in Beaufort as of today. Depending on budget cuts we will see how those offices hold up.

In addition to that, I also Chair the South Atlantic Alliance. I need to always remember when I say that, especially now, this is the Governors' South Atlantic Alliance. We tend to lose focus of that, and this is really something the governors are wanting us to stress, that they are leading this effort. This is a state-led Governors' Alliance, and I have been reminded of that several times recently. I don't have to show you the geographic area.

The only thing I would point out for this slide is that the South Atlantic Alliance is the east coast of Florida, so GOMA represents the western side and the Gulf side of Florida. As Pace mentioned, there are several other regional ocean partnerships, ROPs which I am sure you are familiar with, and GOMA does cover the west in the Gulf of Florida. Back in 2009 we finally kicked off officially the South Atlantic Alliance.

I came on board, was appointed in 2005, and this was one of the very first things that I took on, so for four years, as many of you know, we worked on this for many years behind the scenes. We were really pleased in 2009 when we were able to officially kick this off for the South Atlantic. We were the last region to come on line.

Just as I mentioned, this is really a partnership between the governors. Really what they wanted to stress in this, and part of the reason that we had such a tough time getting the governors to all agree to this was because they wanted to really make sure that there was nothing that was binding.

They wanted to make sure this was completely voluntary, that all the states could opt out at any time. They really wanted to make sure that states' rights were protected. Really it is a way for us to partner. It is to improve cooperation, leveraging resources, coordination. Those are all the key words that we like to use when we are talking about the South Atlantic Alliance.

That is really important as we are moving forward with the Alliance, with what we are seeing come down from the National Ocean Policy. With the words like governance and regional planning bodies and all of those things that are coming online, we are trying to figure out how does the Alliance fit within all of these other structures and regional planning bodies that are also coming online?

That is really important right now for the sustainability of the Alliance is really defining how we fit in and how the governors see the role with the states and fitting into all of that. What the Alliance is not; it is not a governor governing body. We do not pass any regulations, we don't dictate what can happen in each of the states, and we are really not trying to duplicate anything that is already going on in any of the other states or with any of our other partners.

Real quickly, our structure, the Alliance Executive Group, that is the governors at the very top. The governors appoint the steering group. One member from each state is appointed by the governor to the steering group. South Carolina is an exception; we have two. That is John Frampton from DNR and Earl Hunter, the commissioner from DHEC.

If you have been reading the papers, you know both are leaving in the very near future, so we will have two new steering group members from South Carolina. We have a new steering group member from Georgia this year, and we also have a new steering group member from Florida. We have a lot of changeover.

North Carolina has remained constant and we are very fortunate for that. Underneath the steering group, you see the four technical teams. I will talk more about those in a minute. Those are the folks who are doing the majority of the work. This is the technical teams. I will come back to those in one second, and let me just run through real quick the steering group members.

In North Carolina you have got Secretary Dee Freeman; as I mentioned Earl and John from South Carolina; Mark Williams, the commissioner from DNR in Georgia; and newly appointed

is Erma Slager from Florida. She is replacing Bob Ballard, who as some of you may know recently retired as well in September.

Thankfully, our federal agency co-leads have remained constant, so that has been a blessing to us to have some consistency there. NOAA, DOI, and EPA, we work very closely with them. The steering group has their bimonthly calls and they get together on the phone and discuss, and the federal agencies also meet the month that the states do not meet, so they alternate. One month you have got the federal agency co-leads meeting and the next month you have the steering group co-leads meeting as well.

The executive planning team, what you will see there is you have got a really good mix of state folks, NGOs, you have got also a Department of Defense on there, and some of you may be aware but the roots of the Governors' South Atlantic Alliance really came from SERPPAS and the Department of Defense and NGOs when this was originally talked about and formed.

We are one of the only ROP's that have such a strong military presence on our executive planning team and our steering group. We have found that to be extremely beneficial. Ongoing efforts, what I had mentioned earlier is that South Atlantic Alliance really tries to coordinate with – as you heard just previously in the presentation about SECOORA, we try and partner and leverage resources. We do not want to reinvent efforts; we do not want to reinvent the wheel. We really want to work with groups that are already ongoing and efforts that are already underway. We try and capitalize on that as much as we can.

When the governors decided that they were going to give this a go for the South Atlantic Alliance, they put together their priority areas; and as you know there are four of those. At the time there was discussion about having energy as a priority issue area; however, there was not enough agreement between the states that we could put energy as one of our priority issue areas, so we left it off altogether.

Not that we didn't think that it was a priority, but we just didn't have enough agreement as to the region and how we thought we could move forward with addressing energy. We know that we have those four areas that have been identified with the thought that there will be additional ones that are going to be added in the very near future.

We have got healthy ecosystems, working waterfronts, CCOW, disaster-resilient communities, and Michelle is going to talk in a little bit about healthy ecosystems, because she is the mentor for that. We have a lot of team members that sit on each of these four committees and they do the majority of the work; identifying what are going to be our priorities under each of those four areas that the governors could agree to.

We do hope in time that we could expand those four areas. I am going to leave this to Michelle, but what I will say is that for working waterfronts, that is Chris Russo who is the mentor from North Carolina. All of this is up on our website, so all of these four technical areas are on our website with the team mentors as well, and I won't spend a lot of time running through all of this for each of the different areas.

What I am going to go to right here is kind of where we are at right now. We put together an action plan back in the summer of 2010 and we put that out on public comment. We had a lot of comments on the plan. We incorporated those and we finally got a final approved action plan which the governors had to sign off on, which you'd think that sounds easy, but it is not to get all four governors to agree to an action plan, very painful, painful, painful.

I am so pleased that part is behind us, with the recognition that the implementation plan did not technically have to be signed off on by the governors. Once we had approval for the action plan, we could then move forward with an implementation plan, which was left more up to the steering group to make those decisions, so very glad we set that structure up that way. Otherwise, I don't know that we would even have an implementation plan at this point in time.

We finally got the action plan finalized. We have been working on the implementation plan and just got that signed off on this past summer, just in time for a funding opportunity. You probably heard a lot of talk about this, even if not in our region, the other regions, so NOAA came out with their FFO, this was FY-11, to fund regional ocean partnerships, and this was mainly for the CMSP and the administrative piece.

We worked really hard to put together a good package. We submitted that last December. What is going on – what the status is right now we have been in negotiations with NOAA. We did receive, or had the potential to receive – I had to say that because it is all based on final federal budgets and everything coming out.

But what we are being told is that a little over a million dollars for the South Atlantic Alliance to fund CMSP and to fund the administrative piece; a little over 700,000 for the CMSP, and the remainder of that is for the administrative piece, which would be just wonderful to have because everything we have been doing for all these years with the South Atlantic Alliance, there has been no funding at all to support it.

With budget cuts and the things that are going in all of the states right now and the feds; every day I wait for the phone call to be pulled off of South Atlantic Alliance, and the same thing with my counterparts in each of the other states because they just cannot afford to – we can't even afford to keep our own state programs running.

They just don't see the value in the South Atlantic Alliance, and one of the reasons for that is because we haven't had really any output. We haven't produced anything. It has been a lot of getting our plans together and implementation and action plans and structure, how we are going to work and how we are going to function, but have we really done anything, so they don't see the value in it.

What we decided we were going to do, we needed some low-hanging fruit. We needed some things to accomplish, some things that we could accredit and say, look, the South Atlantic Alliance is doing something. We had to figure out what could we do without funding; who can we leverage and who can we partner with because we don't have any new money, so what can we do with existing resources?

We partnered with SECOORA. They had their annual meeting in September, so we were fortunate to be able to partner with SECOORA to hold our first annual meeting for the South Atlantic Alliance in Savannah. That was scraping the barrel to try and find enough money to get the South Atlantic Alliance together in Savannah to hold that meeting.

We were fortunate; we had about 80 people show up. It was a great turnout. At that meeting what we really wanted to accomplish was what can we do in the next 12 to 18 months with no new funding that fits with our implementation and our action plan; what priorities, what low-hanging fruit can we identify; we have got to show something that we are doing and moving forward with.

Each of those four teams that we have talked about, each of the four technical teams met at that meeting in Savannah and they identified several actions that they could take within the short term, 12 to 18 months, and felt like they could accomplish those without new funding, and that is huge.

That is a great thing that they were able to pull that together and I have got a list of those coming up and I will run through that. One more thing that came out of the annual meeting, and we do want to meet every year – that is why it is called the annual meeting – we just haven't had the funds to have annual meetings so this was the first one.

We hope that if we get that FFO from NOAA, which would start in January – I am going to clarify that – so that pot of money would start – that little over a million dollars would start in January and run through June 13, that we would have some administrative money and we would be able to hold another annual meeting next year. One of the things that were talked about at that meeting was having a two-year term for the Steering Group Chair.

Right now Commissioner Hunter is the Chair of the Steering Group and he will be leaving in February, and also John Frampton will be leaving also soon, so the Chair will be changing. North Carolina has agreed that they would take over the Chair. Secretary Dee Freeman, who is also our GGC representative on the National Ocean Council, will also likely be the Chair of the Steering Group after Commissioner Hunter leaves.

That was another important outcome from our annual meeting in Savannah. Here is what we did; we prioritized. Each of the teams got together; they spent a lot of time working on this. They came up with two action items for each of the four teams, so we have a total of eight. This is not yet on our website but it will be by the end of this month.

Each technical area identified two. We are trying to make sure we have this all pared down and it is consistent with what we have identified in our action and our implementation plan, and it will be posted on our website by the end of this month; the top eight priorities for the South Atlantic Alliance.

Keep in mind this is without new funding, so these are areas that we felt like we could move forward without new funding. We will also be moving forward on the CMSP front with the FFO

money that we hopefully receive from NOAA. Some of the challenges ahead of us, I would say the number one challenge ahead for the South Atlantic Alliance is sustainability.

We have three of the four governors are newly elected. That is probably the majority of what I spend my time doing, making sure that the political folks, the general assembly folks understand, recognize the value, and want to keep the South Atlantic alive. There has been a lot of talk recently within the last several months about putting the South Atlantic Alliance on pause; not doing away with the South Atlantic Alliance, but just kind of hitting a pause button.

Luckily we can say, well, no, we have got some money coming in from NOAA; we are likely going to receive that in January, so we need to keep moving forth, the South Atlantic Alliance, keep plugging ahead. We are counting on that money to help folks kind of not hit that pause button.

But even with that money from NOAA, there is still I would say a pretty good chance that there will be more talk about the South Atlantic Alliance and about putting the Alliance on pause. As you know, in South Carolina and some of the other southern states there is a lot of concern about accepting federal money and the strings that are attached with federal funds. That is not just in South Carolina but other states as well.

That is something that we have to be aware of, so even if we say that we have federal funding coming, that is not always a good thing. I now have to justify, and our governor – there is a new bill that has been passed in South Carolina, some of you may be aware of that we have to – any federal money that we receive now, before we can even accept it, has to get approval from the Governor's office before we can even accept it.

They have to know what the outcomes and deliverables will be. That puts – this is a sidebar, sorry – our entire coastal program at risk, so my entire coastal program in South Carolina would definitely be one of the programs that would be at risk if we weren't allowed to accept these federal funds. It is not just in my organization, but that is also on the health side of my agency as well, not accepting federal funds. Anyway, we are continuing to move forward as best we can. I also mentioned earlier how do we fit in with the National Ocean Policy and the regional planning bodies?

We are engaged in those conversations with GGC and those members and we are trying to provide comments and as much as we can figure out what is that structure going to look like and how would the ROPs fit into that? We are not the only ROP that is having that conversation. The regional planning bodies also have conference calls that we have every few months and so each of the ROPs has a representative.

We get together; so GOMA is talking about the same thing, NROC, MARCO, the West Coast, all of them are trying to figure out how do we fit in with what is going on with the National Ocean Policy. In particular right now I think the concern is really about the regional planning bodies, and making sure are we just going to have another duplication of the South Atlantic Alliance or what is going to be the structure of those in making sure that we have the right

balance between federal and state on those regional planning bodies. I know that is a hot topic of conversation right now.

Those are some of the things that we are dealing with right now and we are also dealing with how do we fit in with the governance structure that could be coming down with the National Ocean Policy in making sure that states have a say so in what types of plans are being developed on the CMSP side, and how does a state plan fit within a regional CMSP plan?

There is a lot of conversation that is going on around those areas right now. I see those as being our big challenges ahead and, of course, funding. We definitely need funding and we are not just looking at NOAA to support the South Atlantic Alliance. We are exploring any avenues that we can to try and secure funding to help keep some of these initiatives alive with the South Atlantic Alliance. I will take any questions that I can on the South Atlantic Alliance or do you want to hold that, Pace, until Michelle?

MR. MIKELL: I'm going to ask a question again. Carolyn, based on your expertise, what is the state of the coastline of South Carolina at this time, being as how I can't eat the oysters out of my creek, pregnant women can't eat the fish because of mercury and the governor's children can't swim at Myrtle Beach because of the pollution.

MS. BOLTIN-KELLY: I think you have a pretty good summary right there yourself. I can say that we had funding identified in our 306 Plan for several years. We haven't been able to secure the funding yet to do a State of the Coast Report, not State of the Ocean but a State of the Coast Report and trying to tell exactly those types of facts, put it together in a concise document for us to use when we are trying to talk to the General Assembly members and we are trying to talk to Congress and we are trying to talk to our Governor and folks about what is the state of our coast?

I heard the conversation earlier about how important State of the Oceans Report would be to make sure we have another revision of that. We have been trying for years to get a State of the Coast Report and we have it again in our five-year plan. If we had the resources and the money, we would love to see something like that put together. But you get a pretty good snapshot right there of what I think the sentiment is of a lot of folks about the state of our coast.

DR. DUVAL: I will just thank Carolyn for that great overview of the Alliance, and I am just going to get down into the weeds a little bit of what the Healthy Ecosystems Technical Team has been doing. This is a great place to do that because most of the team members are actually here; so Pat and Anne and Wilson and Pace and we keep Ken McDermott in the loop and Roger, and then one of my two co-mentors, Mary Conley with the Nature Conservancy, is back behind me in the audience, so I have lots of opportunity to both pass the buck and get whacked on the head a little bit here.

As Carolyn mentioned, the Alliance went through this prioritization process, so we have lots of action items for each of the four different Issue Area Technical Teams. We really needed to be able to pare that down in order to be able to try to make any progress or headway on any of those things.

Our team got together back towards the end of the summer, and we did this very sort of systematic numerical ranking of what our top five priorities would be within our implementation plan, and then from there, as Carolyn mentioned, at the annual meeting that was pared down to two. I know that we are running short on time and I do want to allow a time for questions, so I am just going to quickly go over what those are.

The Healthy Ecosystems Team has four major objectives. I have also taken a little bit of editorial license here because these are actually far wordier than what you see on the screen, but the first goal is to implement regionally coordinated, compatible, sustainable, ecosystem-based planning and management that includes a number of things; habitat mapping, characterization monitoring, modeling, a lot of the things that you all have been talking about here over the past couple of days.

The second major goal or objective rather is to access the independent and cumulative impacts of development and climate change on coastal habitats, biodiversity, natural community structure and function, and ecosystem services. Our third major objective is to employ economic, science-based, land-use coastal and ocean planning in management. This includes conservation, restoration, ecosystem health evaluation, and et cetera.

Then our final objective was to determine long-term impacts and mediation strategies for existing invasive species. As Carolyn mentioned, she listed the two top priorities that we did decide to narrow our focus down to. The first one, HE stands for Healthy Ecosystems; 1 is Objective 1; A means this is our first priority, just to let everybody in on the code here.

Our first priority action was to develop coordinated state programs to map known distributions, key estuarine and marine habitats and land-use cover on the coastal watersheds of each state, the distribution of key species of management concern using a common set of standards and attributes. I think that last piece is very critical.

Just last month in October, as per the direction that came out of the annual meeting, was what are the tasks that we are going to do over the next 12 months to try to move ourselves towards this goal. We actually developed a nice little spreadsheet. I really like spreadsheets. We have a task; we have who the lead is for task, what the time frame is for completing that task, what is the mechanism that we are going to use to complete that task, and then just sort of some ancillary information?

I haven't listed all of that here but this is – I have instead focused on just the tasks that we are going to try to move forward with over the next 12 months. With regard to this, it is sort of a comprehensive analysis of what is the mapping information that is out there to map known distributions of the resources that folks are most concerned about within the four states.

The first thing that we want to do is to determine the spatial extent of our effort. We actually as a team completed this task on our call last month after much discussion. It is do we go from the top of the watershed all the way out to just the ocean beach; do we start at the beach and work our way out?

After a lot of discussion, we decided that heading beach out to the ocean has the most opportunity for regional coordination, and that is really the focus of the Alliance, so that is done. Our second task is to develop a template to query the states regarding their existing mapping data. I think a lot of folks around the table here know Dr. Bob Van Dolah. He is our team lead and he graciously volunteered to develop that query form, and he set himself a very ambitious personal deadline of December 1 of this year.

After that, that query form will be used to summarize a list of key resources in each state that are being mapped. Again, these are both habitat and biological resources, and the goal is to have that completed by the middle of January of next year. And then finally take this sort of gap analysis and use that to identify the resources of common concern among states and managers.

I spoke about the mechanisms that we are going to use to do some of these things. The mechanism that we are looking at for doing this are having some in-state interviews with various natural resource managers, coastal zone managers, things like that, and that I think would rely in part on some of the funding that Carolyn has spoken about.

Just to move on to our next priority action, Coastal Marine Spatial Planning is a very big deal right now. It is part of the National Ocean Policy. When we were developing our prioritized list of things that we were going to tackle, this naturally rose to the top. Our first priority action is kind of like getting all the information together about what is being done and what hasn't been done and what is of most interest to folks to fill in the gaps for;

And then this kind of the second piece for developing a real marine spatial plan in cooperation with the federal efforts that are ongoing and, of course, in cooperation with SECOORA and other organizations. In that regard, our first task is to identify the major activities that are most likely to benefit from interstate coordination and planning.

We do have a volunteer from our team who said she would try to get this done by December 1. Then once we have that, to try to determine where these activities are happening and the existing data sources. By those activities, referring to things like shipping lanes, where are artificial reefs, ocean disposal areas, sand burrow areas, military use areas, et cetera, and things like that.

Those are the major activities that we are actually talking about. Then in terms of the second task, this is something that we are looking to try to maybe employ interns, some free labor or at least very cheap labor, to go around and survey folks and say do you have any existing data sources with regard to these activities, map data or unmapped data, whatever it might be and then try to determine if there is a common framework of standards for that information and how to bring that information into a portal.

This is where we would use like a small workgroup of individuals, folks from SECOORA, perhaps GIS, experts from the states as well to get together and try to figure out what is the most efficient means of bringing all that information together. Again, we are looking at trying to complete these things within the next 12 months, of course, dependent on funding.

We were trying to identify some items that we could move forward on in the absence of the funding that we have right now. As Carolyn mentioned, most of us have been doing this kind of gratis on top of our existing jobs. With all the demands that most state agency folks have right now, it is really difficult to find the time to do that.

I think another challenge that Carolyn touched on that we have in this regard is in terms of avoiding duplication of effort and coordinating with a lot of the other regional activities that are going on. I copy Ken McDermond from the South Atlantic LCC on all of the e-mails that go out to the Healthy Ecosystems Technical Team.

It is kind of just an information thing because a lot of these regional partnerships are evolving so quickly that one thing that you think your group might be doing that may be filling in an information gap might actually end up overlapping with something that somebody else is trying to do. I think it is really important that we all sort of keep each other in the loop.

I joked with Wilson last night that so many of us are sitting on so many of these same regional partnership kind of bodies that we need to just have one big gigantic meeting in the middle of the southeastern states and we are all just going to get together and stay there for a week and hash out all of these different regional priorities that we have.

Anyhow, that was all I had; I just wanted to give you a little flavor of sort of what the Healthy Ecosystems Team is thinking. I would encourage any of the team members who are here to speak up as well as Mary Conley, my co-mentor. I will say that we are looking to have another team call probably mid-December before the holidays to check in and see what progress folks have made on the tasks that we have assigned ourselves. Thanks.

MR. WILBER: Okay, we have several minutes for questions or comments anyone would like to make.

MR. HOOKER: More of a comment than really a question; obviously, we have developed a good relationship with NROC and MARCO, and I know there is some evidence of overtures to engage with the South Atlantic Alliance on the Bureau of Ocean Energy Management side. Anyway, I just wanted to state up again that we would like to work with you if you continue to exist. Thank you for your frank discussion; that was good.

MS. BOLTIN-KELLY: Well, I was trying to be very candid, but realizing I was on the record as well, so I didn't want to say too much, but as you know the governor of South Carolina has recently set up the South Carolina BOEM Task Force, which will be working very closely with you and our already existing regulatory task force. I think the difference between South Carolina and our BOEM Task Force is going to be that it is at a very high level.

It is at the board level, so it is like my DHEC board, the DNR board members, and General Assembly members, so it will take a lot of care and feeding, and I have already reached out to several members of that and we have started educating them. The South Atlantic Alliance will be behind the scenes working with those BOEM Task Force members, but we had been trying to get that done for several years with South Carolina.

We are thankful that has been recently named, and so we do have that task force. It just will be I think a lot different than the structure in several of the other states that have those task forces. We will be working closely as long as we are still here. I didn't mean to sound doom and gloom, I just was trying to get a pretty realistic snapshot of kind of where we are right now with the South Atlantic Alliance, but we are still plugging forward. I am here today but I am not really here today talking about South Atlantic Alliance.

DR. DUVAL: I just want to add a little bit to what Carolyn said. Brian, kind of the way we have encouraged participation in the technical teams is to contact any of the lead mentors that you see on the website, go through the implementation plan or the action plan, if you say, oh, yes, there is a lot of things that BOEM has some significant interest in that the Alliance is looking to tackle, definitely send an e-mail to any one of the mentors for any of the groups expressing your interest in either being a permanent member of the technical team or someone to plug in on specific issues.

We sort of have two levels of membership, I guess I would say, folks who are like permanent members of the team as well as people that the team can bring in, just sort of subject area experts so to speak. Not to pick on the South Atlantic LCC and Rua and Ken, but Ken contacted me and said, hey, in reading through the action plan I see there is a lot of overlap with the kinds of things that you are doing and the kinds of things that we are looking to do; and is there a way that we can sort of coordinate as we move forward? I would definitely encourage you and your colleagues to contact us if you want to be involved.

MR. HOOKER: Thanks, we will be sure to do so. Within the Renewable Energy Office we did recently hire someone who one of their main tasks is the CMSP side of things. I will definitely put her in touch with you guys.

MR. MIKELL: I have got a question for you, Brian. Did I not hear on the radio yesterday that the North Carolina Wind Project had taken a backwards step because of somebody or something?

MR. HOOKER: I am not aware of any major backward step. Does anybody from North Carolina want to comment on that?

AP MEMBER: Do you know if that was land- based or the ocean?

MR. MIKELL: Ocean.

AP MEMBER: I hadn't heard anything about ocean; land-based I have been hearing a little bit.

MR. HOOKER: I can probably find out and let you know by the time I speak after lunch.

MR. MIKELL: Somebody has decided it wasn't suitable and it was fairly big news on the station I was listening to.

MR. HOOKER: I will make a phone call. I am presenting after lunch so I should have an answer for you after lunch.

DR. DUVAL: You might be referring to the previous energy study that was done looking at places actually within Pamlico Sound to try to establish a few wind turbines, and that actually took a pretty big step backwards. There is one on land that was just recently approved up in Terry's neck of the woods, as far as I know.

MR. PRATT: Yes, Jenks, there is a land-based one up in northeastern North Carolina, and it did go backwards because the developing company could not reach a term of agreement with the power company. Even though it was under a major transmission line for purchase, they could not deliver power at a competitive price, so it is probably going to go away.

MR. MIKELL: Well, this radio account I think said ocean, it was not suitable.

MR. HOOKER: I will check for you.

MS. DEATON: I guess this is partially for the South Atlantic Alliance, but also for maybe Roger. Tina showed us the South Atlantic has developed this website and many of the same data layers both cover South Atlantic. Could that website with the portal be used for this instead of a different portal or are there problems because of the amount of information or types of information?

DR. DUVAL: I would say that is a great conversation to have with all the work that Tina has put in, and Florida and Roger have put into that web portal. Mary might actually be able to speak to this a little bit more in regards to the proposal that the Alliance put in from the federal FFO and the CMSP component; and what was mentioned in the previous presentation on SECOORA's efforts to try to get the data management and the actual mechanism together.

I think that would probably be a conversation more between SECOORA and the lead PIs on the proposal that went forward, and Tina to see if this portal would serve those purposes or what the hang-ups might be or what the opportunities for coordination might be. But, yes, that is a great point.

MS. CONLEY: I am Mary Conley with the Nature Conservancy. Just in followup to that, I think when the original proposal was pulled together it was noted that there are a couple of portals that are out there that could potentially serve as the base, including the work that the South Atlantic Fishery Management Council has done and the work that SECOORA has done.

Part of what that proposal would be is to see what the best source is and whether it is actually the same portal or if it is just making sure that we include the right linkages to the portals so that we are not duplicating how you get the data, but we are recognizing that, so that will be part of the discussion. It also comes down to what Carolyn said is that being a Governors' Alliance, we want to make sure that the source and where people are going represents what they are looking for.

MS. BOLTIN-KELLY: And the scale.

MS. CONLEY: And the scale, so that may cause some shifts or some slight variations in it but we will definitely take that into account.

MR. WILBER: Any further questions or comments? Seeing none, it is time to move to the break.

MR. WILBER: The next presentation, the first of the three that will lead us up to lunch, is from Ken McDermond. He is the Chair of the South Atlantic Landscape Conservation Cooperative. I know many of the folks in the room participated in a workshop a couple of years ago here in Charleston to help sketch out some of the initial direction and priorities for the South Atlantic LCC.

They have been meeting along those lines to sort of flesh out those priorities, and in the meantime they have been able to actually hire Ken and to hire Rua Mordecai as their Science Coordinator.

MR. McDERMOND: I realized during the break that if I am on the record I don't have anything to say, so this is going to be short. I have got to keep myself in check here. Well, thanks first of all, Pace and Roger. This is a great idea for this forum, so thanks for putting it together because it is kind of like a one-stop shopping for us to be able to come and get to know the kind of coastal and marine organizations, players, partners and all that sort of stuff, so thanks for doing that.

The other thing, I kind of took a couple notes while we were going through that I thought maybe I better highlight right off the bat, and that is that this Landscape Conservation Cooperative, the South Atlantic version is relatively new. I was sort of thinking as people were going through we have got a lot of efforts in the South Atlantic or that start with the South Atlantic.

Really, it started at or got its formation in February of this year where the steering committee formally came together, adopted a charter and a mission, and I will get into that a little bit better a little bit later. It is relatively new even though I have been on staff since July 2010. The other thing I like to say to folks, because my language isn't quite straight on this all the time, everybody in this room, everybody in the South Atlantic area really is part of this organization and has an opportunity to be a part of the organization, so it is not a partnership separate that only certain people can be in it.

We have governing structures and all that, but it is our philosophy that it is your LCC, it is your Landscape Conservation Cooperative and it is what you make of it. We are here to help move those ideas forward. We need your thoughts and ideas about that. Then the other thing, which I think the theme is, as you are sitting around here listening to all these presentations, the opportunity for duplication is high.

I really thank Michelle for the comment you made, because we really do take that to heart and we are trying to make sure that we do the best we can to avoid duplication, but actually take

advantage of the work that is going on. I think everybody seems to have that mindset. It is the challenge of the communication and coordination it will take to make sure that we don't waste money and energy doing the same thing several different places.

With that, why Landscape Conservation Cooperatives, what are these things all about, where did they come from? By the way, Rua and I are going to do a bit of a tag-teaming here so we will be switching back and forth here a little bit. This is sort of the landscape that we face as a society in relationship to our human footprint and how do we conserve natural and cultural resources.

There are a lot of challenges out there and they are not getting any easier, and the opportunity for making sure that we have sustainable resources into the future is becoming more and more limited. How do we do this; how do we as a conservation community or as a society, really, deal with these challenges and make sure that we have the landscapes, the resources that we want for our quality of life and for our economy?

It really gets down to me a really simple question is what are we for? I have been involved in conservation primarily in the federal sector for 20-some years and somewhat in the regulatory world, and I sometimes feel like we do a little bit more of what we are not for versus what we are for.

What attracted me to this cooperative and this enterprise, this new thing was maybe this is a way we can get out in front of that a little bit and say what we are for in terms of setting aside resources for the future. Historically, if you look at how we have done that, it is nothing wrong with it. I don't mean to cast dispersions here, but it has really been a silo sort of approach.

We have multiple federal state agencies, nonprofits with their individual missions and so sort of working along those missions, not necessarily any sort of integration about those. Now in the past 20 years or so there has been an evolution towards partnership, many of which we are talking about here today; fish habitat partnerships. We have the Atlantic Coast Joint Venture for birds; we have the Atlantic Coast Fish Habitat Partnerships, a variety of partnerships out on the landscape, the estuary programs, South Atlantic Alliance.

There are a lot of different things going on out there with really the understanding that we have got to work together and not in our silos; but in the process of doing that we have created some of some additional silos that are on narrow issues, narrow geographies, or possibly taxonomically.

Part of the intent of Landscape Conservation Cooperatives is an attempt to integrate across even those lines and those silos. What we are talking about here is a forum in which the private, state and federal conservation community -- and I would say we shouldn't limit this by conservation community; it is whoever wants to come to that table, but where we develop a shared vision of landscape sustainability, cooperate in its implementation and collaborate in its refinement.

That is kind of the essence of what Landscape Conservation Cooperatives are trying to do. Easier said than done, big hairy audacious goal, how are we going to get there? I put this up because at least in the early times and maybe we are past this, and I hope we are, that this was

some sort of a DOI thing. As a matter of fact, it was an idea that emanated out of the Department of Interior from the Fish and Wildlife Service.

But it has really been sort of impressive to me having been in government for a long time, I never really had experience like this where an agency puts a bunch of money into something and then sort of steps back and says we are not going to direct how this goes, here is the money, here is the general idea, let's get it going and see where we can go.

These are self-directed partnerships; and in fact even though I work for the Fish and Wildlife Service and have a boss, my boss is the Steering Committee of the Landscape Conservation Cooperative here in the South Atlantic. They decide what we are going to do. Let's talk about the South Atlantic LCC in specific.

You see the geography; you have seen it several times already today. Here is our website. This is the mission. Back in February when we got our steering committee together and we kind of got down to the brass tacks, this is what we came up with; to foster landscape scale conservation, to sustain natural and cultural resources for future generations.

This is what we have sort of developed as what we see as the LCC role; offering partners a landscape perspective for their conservation activities; developing explicit linkages across the existing conservation partnerships – again this gets back to the silo discussion – conservation partnerships that span multiple resources, natural, cultural, fish, birds, snakes, you name it.

Then helping to incorporate this future change that we all see coming down the line, whether it is climate, whether it is energy development, whether it is urbanization. There is a long laundry list of those things; how do we integrate those things; how do we incorporate that? The idea is to pull all that together to define and design these landscapes.

Then in sort of the adaptive management framework, how do we monitor to see whether we are actually being effective in that mission? That is kind of what we were handed as a staff; although we actually developed some of that, too, but there wasn't a real specific do these three things, so that is what we have come up with and here is how we are talking about getting there.

The key components of this are really establishing a broad-based partnership, getting the capacity to do that stuff; and then establishing a decision-support framework that integrates the values of the partnership, the priorities, the current science on the resources, how those resources are vulnerable to the future change, and then how do we integrate these conservation tools that are out there and maybe new ones we need to develop; how do we integrate that all into sort of a conservation plan for the future?

Just to quickly get into the partnership and how we are approaching that and what it looks like, we have a governance structure. I didn't give you the graphic on that but it is primarily at the top end of it is made up of a steering committee made up of these organizations, about 14. You will notice the South Atlantic Fishery Management Council is on there. Roger sits on our steering committee representing the council, pretty interesting group of folks.

When we sat all down together, it was kind of neat to see the people looking around the room and saying, well, we don't normally talk to each other like this or sit in a room like this, you know, across state, EPA with Fish and Wildlife Service. It was really interesting folks going, wow, this is kind of different. While we don't have everybody at the table we probably need, you don't see any kind of private interests, private landowner interests, so there are some things that we are missing here that we will evolve into. Again, we are early in the game.

The other part about this is this partnership committee. You can see the list of players that we have there and the partners there. One point I will make here is that you don't see, for example, the South Atlantic Alliance, you don't see SECOORA, and we haven't talked with SECOORA yet, but we have talked with the South Atlantic Alliance, understanding there is probably an opportunity to integrate there and we just haven't taken the next step yet.

I will mention why that is probably in the future, but the idea here is that this is where we take advantage of existing efforts. There is a lot of science, a lot of technical expertise and a lot of agencies, nonprofits and other organizations that are already integrated into these landscapes level or taxonomic level partnerships.

We don't need to recreate the bird science necessarily in the LCC. It is take advantage of what is already out there is the idea; use these groups, bring them together in a forum so they can start to begin to see how we might have needs that come together that we all have. There is a variety of different ways we think we will take advantage of – the staff can take advantage of this expertise in the future, but this is the beginning of that. Again it is really trying to move to the next level, integrate these across these silos. Rua, this is yours.

DR. MORDECAI: Since we are tag teaming, I will just do it from over here. I come from a partnership background. One of the things I really, really love about partnerships is this idea that anyone with the interest and the energy can come together and help move the ball forward. That is one of the things I really liked about it.

You have examples like the South Atlantic Alliance where it is people coming together because you are on these technical teams often because they want to help move some of these things forward. When I came on, that was one of the first things I wanted to figure out is like all right we have got these structures, you have got the partnership committee, people participating in partnerships already are already part of the LCC; you have got the steering committee; how do we leave that door open for anyone that wants to help guide the LCC?

One of the things we have been doing is trying to use the South Atlantic LCC Website in a little bit different way than a lot of folks usually use the website; so going beyond just a sort of informational here is the updates and here is your monthly newsletter, but also really trying to give people some active opportunities for influencing the direction of the LCC through the website.

You see the website. Some of those numbers are a little bit old but we have got thousands of visitors since October. One of the interesting things is that most of the traffic we get are people

coming back. Most of those people aren't just there and say, "Oh, that is the South Atlantic LCC, okay, now I am done."

A lot of them are coming back regularly for updates and participating in website groups. One of the ways we have been doing that is we have these different groups on the website. It is more of a sort of a social networking style thing. This is the geospatial group we have here. This particular group is taking on the question of how we deliver geospatial information to partners, also looking at how to stitch together LiDAR layers across the entire area so we can come up with a seamless set of LiDAR.

We have got a number of these different groups and we have been doing our best to try to give – and they are open to anyone, so anyone that joins the website and wants to get involved in their specific issues can be involved. We try to set up phone calls and use some different methods. In fact, for anyone that has tried to use some of these more social networking style tools, it is really hard to get people to involve themselves and actually comment and participate.

We are even starting to get some progress, for example, on a few of these recent things, had some active discussions beyond just the phone calls we set up through these groups. We are really trying some different ways to try to get people involved. I can't tell you how many people we have had get involved in the LCC that I never would have run into at a meeting like this or just in my travels or talking. That has really had a big impact and helped move things forward that have just through the website gotten involved.

MR. McDERMOND: That was the partnership side, how we are developing the partnership, and then we were talking about capacity. You can't quite have a vision like this and do it parttime, I don't think. That is the beauty and the luxury we have is some funding for some capacity. When I mean capacity, at this point this part is about staff. You can see this is not just DOI.

There is Forest Service putting in money and it is some DOI, but Park Service not just Fish and Wildlife Service, so there is a fair number of staff here. NOAA has got some funding in here. And that is actually an interesting position, the Gulf Coast Coordinator, where realizing we have I think it is three or four Landscape Conservation Cooperatives that boarder the Gulf Coast; NOAA partnered with the Landscape Conservation Cooperatives bordering the Gulf to have Laurie support a liaison function with the LCCs to make sure that they were integrated with all the various other partnerships in the Gulf area.

There are a lot of other investors through various other offices, part-time support, or things like office space. North Carolina Wildlife Resource Commission is basically hosting all of our staff and other associated support related to that office space. The significant funding part I think we needed to point out is that there is or at least last year was almost $2 million for capacity and for developing science that we need to support the mission; so fairly significant luxury we have here moving forward.

Then the next part of this is the decision-support framework that we talked about. This is sort of the third part; how do we do this planning effort? The framework is really trying to integrate these broad values and interests of the partnership again with the science and the resources we

have now; how those resources are vulnerable to future change; and then implementing the conservation tools to sort of develop scenarios out on the landscape. There is the checkerboard, I think.

DR. MORDECAI: I think this really comes back to the thing that Ken set up in the very beginning' what are we for and how do we get there kind of question. It never hurts to start simple. Here is a very sort of toy example; the idea here is – and you have got the South Atlantic Region, imagine it is these little squares; and even while we are talking, we have got urban communities growing we, have got the sea level rising and there are a number of key resources we all want to keep out on the landscape.

Let's say, for example, there are some areas that are particularly important for reforestation for maintaining large-ranging mammals like black bear. A lot of those areas may also be in key riparian buffers to make sure we have got good water quality and reducing sedimentation for things like endangered mussels or larger-ranging fish like American eel.

Maybe the edges of those habitats are particularly important for different bird species, particularly ones that are very captivating. Then still other sections might be particularly important for maintaining healthy drinking water for counties and communities and cultural resources, things like historic rice fields that have value for the natural resources but they also have value for the cultures that people really care about.

As you all know, all those different decisions and the things happening upstream can have a big impact on what is going on in some of the marine systems. All these little decisions about in-stream flow and riparian buffers are all sending that sediment, water quality and all those changes down to maybe important fish habitat for things like gag grouper.

I think thinking about these connections is particularly important as we are starting to face some really new changes with not just these explosive growths of the communities. I mean, here in the South Atlantic it is hugely dominated by people; but also with climate change we are getting some new systems we have to deal with.

As we start seeing mangrove communities replace salt marshes and suddenly we are thinking about mangrove communities up in North Florida and Georgia, there are some big changes on the way. When we make the plans, we can't just plan for what we have right now. We need to be thinking about those resources into the future.

The idea here is to figure out, okay, what is that vision for how we sustain all these different resources we care about, and it is not necessary just for us sitting around this room, but what about the next generation and their kids and how do we make sure that we can have some of these resources that we all enjoy and pass them down to the next generation?

I think the other piece of this is trying to build on the existing efforts that are out here that we have done before and taking things to the next level. We have in the past tried to think about some of these prioritization exercises and drawn some circles on maps and saying, okay, this is

high priority and this is low priority, but now trying to take it to the next step and say, okay, what does that mean, okay, what if I do this high priority, what does that mean?

If you are going to be working together and making a case for doing this, having some explicit measurable responses for that to be able to go to individual partners and say, all right, you guys work together on this piece of the corridor; EPA, this is what it is going to mean for water quality; and Fish and Wildlife Service this is what it is going to mean for populations; Park Services, this what it means for cultural resources; Community, this is what it can mean for your drinking water, so really being able to take that next step of saying, all right, what is it going to mean for each individual organization so they can bring that back and act on that larger plan? That was a pretty little checkers' diagram. Now what I am going to talk about is the first cut at trying to do that in a more realistic way.

This is this project called Optimal Conservations Strategies for Dynamic Landscapes, which is a very mouthful word. When I first came on as Science Coordinator, what was really exciting to me is that there was already a project designed to do the toy example I just showed that try to bring together all these different pieces, the values of the partnership, future change, the science we have now to help folks come up with the vision for what it should look like.

It was part of this Southeast Regional Assessment Project, which included a lot of different pieces; downscale climate projections and sea level rise, impact of climate change on bird habitats, really the whole kit and caboodle from pretty amazing urban growth models predicting into the next hundred years at really fine resolutions and trying to pull all those together; so take the urban change, take the climate, put that together and how the vegetation is going to change and the water is going to change and things like that.

The spatial extent of this project was the South Atlantic LCC. The scope was conservation-related decisions by partners. Here is the project plan. We actually have dates so, Michelle, you should like this one. What you will notice is this is really trying to get at that initial prototype. What you will notice is it started December of 2010 and we are looking to have that rough prototype out by next month, and it is still on target.

The idea here is not to go away in an ivory tower for three to five years to come up with the absolute most perfect amazing plan and then release it and say here it is, it's all great, but to really work closely in an iterative fashion with folks to come up with something, take a look at it, is this going in the right direction, what is it missing kind of things.

So far we have had a bunch of different organizations involved in just developing this prototype; the idea not to try to have every single organization represented but think about the different perspectives, people that can think about socio-economic and cultural resources, people that can think like a private landowner, people that can think from a marine perspective, from a terrestrial perspective.

We try to have a swath of folks from state organizations, like the National Council for Air and Stream Improvement, for thinking more about more of a private landowner perspective. The question being, okay, so what did partners want to know about this? There are really two pieces.

I think about this almost like they want to know where to take action for the good of the whole as one piece; maybe not prescriptive about very detailed actions, but the value based on the contribution to the shared objective.

It is the stuff we all share, some of these resources of natural habitats that everyone cares about, but everyone also wanted to be able to walk away with how those actions contribute to their agency's objectives; you know, going back and having those measurements so you can say, yes, I am doing this for the good of the whole, but, hey, guess what, this is also particularly important for my particular state, my organization, and my county.

Through a series of phone calls, webinars, and finally a workshop we tried to start nailing down some of these details and some sort of measurable attributes of what people wanted out in the landscape. I am not going to go into too much of the details on some of these, but there are levels upon levels under these. We really got at three different core types of resources; cultural resources, which were particularly important from the sort of the human use perspective.

That includes things like historic sites and objects, but also the group put biotic culture resources including huntable and fishable populations, which is a little bit different than you usually see for those resources. But that captures the actual ability for people to be able to go out there and harvest and fish.

It is not just locking it away in a reserve somewhere, but these objectives of people being able to go out and actually harvest things and other things like angler satisfaction in the access issues. Socio-economic resources; that is the stuff that really hits you close to home as far as human health and the economy and then also the natural resources and I will talk a little more detail in that.

But it ended up being this integrity of ecological systems, so a series of different habitat types and the integrity of those; and also viability of certain threatened and endangered species. The group recognized that sometimes you can have a very healthy system but at the same time there may be some additional objectives just to make sure that certain species don't go totally extinct; so things like reintroducing species at historic ranges or captive breeding or things that may not necessarily be wholly within the idea of having a healthy system. That is part of the what do you want out there?

The next step is, okay, how are you going to get there? Part of that are some different strategies you can use out on the landscape. What can we do that you can't do on our own as different organizations and groups; so things like creating corridors and blue ways and green ways and protecting habitat gradients; things like restoring riparian areas and things like that; and then also having to incorporate the future change thing that Ken talked about in the beginning.

It is a moving target. You have to be able to think like a long term-county planner or forester or something else like that. You have got to plan for what things are going to look like out into the future. You have to be able to incorporate those changes, things like climate change, urbanization and flow. In the end it is really all the fun modeling of putting those pieces together to compare and ask some of those questions about, okay, what if we did this; comparing some

alternative scenarios about, okay, what would the world look like in 50 years if we just left it alone and what would the world look like as far as all these different resources if we actually pulled off these blue ways or restored these fish habitats.

I will dive a little more deeply into the natural resource objectives. As you all know, ecological integrity is probably the most squishiest word in the world. It is kind of like nailing water to the wall. The way the group has defined it so far was percent of representative species population targets net for a series of habitats including estuarine and marine and fresh water aquatic and marshes; this idea of identifying some representative species that represent a number of different sort of species and guilds.

The idea is, okay, well, you set your population targets – and luckily a lot of these targets have been set for endangered species but also for a lot of these marine fishes. You have some explicit targets you are going for. The idea is really being able to break that in and saying, okay, we are meeting 90 percent of those targets that the partnership set; all right, that is green, that is a thumbs up integrity-wise.

At the same time I mentioned that it may be necessary to include some additional targets for threatened and endangered species. Again, in recovery plans those targets are set as well. A lot of this is trying build off what groups are already doing, already identifying their sort of represented species and targets and using those instead of trying to reinvent the wheel but connecting the pieces.

You might be thinking right now, holy crap, how are they going to do that; all this big landscape change and all these different resources? Some of the information is coming from the Southeast Regional Assessment Project, climate projection, some of the land cover change, urban growth models, some of the bird response; but for a lot of it, it is coming from the great work that folks are already doing; bringing in stuff from the Southeast Aquatic Resource Partnership.

Bringing the fish community response models we have on the freshwater side are from the National Fish Habitat Action Plan. We have worked with the bird joint ventures for some of the bird models, doing some for water quality stuff working with Environmental Protection Agency. It is really trying to figure out how we can take these individual pieces and put them all together.

There is a lot of amazing work already out there, but sometimes the hardest part is putting them all together. The result is going to be this prototype conservation plan to figure out where folks can take action to address shared challenges and how those actions would contribute back to their organization's objectives.

It really comes back to that general design, that idea of, okay, how do we establish that network that is going to be resilient to all these future changes? Kind of another way to think about it is the green infrastructure, green/blue infrastructure. You have got transmission lines for energy; you have got roads for cars. Well, what is the system we need to build for the future for our natural and cultural resources?

At the same time recognizing we knew there would be some gaps – I mentioned all the amazing stuff that is already out there, but we knew there were going to be a bunch of major gaps in this project to start with, anyway. It is not going to be perfect; that's why it is called a prototype. At the same time, the cooperative and actually the Partnership Committee was the review panel for deciding on these projects, identified a number of projects to fill anticipated gaps.

One was looking at sea level rise on beach-nesting species; another looking at amphibian and reptile conservation areas; another one looking at habitat connectivity for large-ranging species, mammals, reptiles, amphibians; looking at cultural and natural resource sustainability and how they could potentially work together and where there might be some problems; another one looking at genetic hotspots for species, and this cuts across all those boundaries, terrestrial, aquatic, marine; and also looking at the impact of climate change and population growth on freshwater in-stream flows.

That was a big challenge that was identified early on in that we couldn't in a consistent way across the area predict current and future flows at a level fine enough resolution to figure out what the aquatic resources were doing. It was at like at puck eight was the closest we could get, and so that was another piece. All these projects we have been working really actively to integrate them.

These aren't just sort of isolated projects that sit on their own, but they are all using very similar – you know, pulling in the same kind of urbanization data and all being plugged into a consistent system for integrating them. One last thing, as I mentioned December is when we are planning to have this prototype out there, so we will be getting that out and some examples for people to look at.

I realize you hear all that and it is way up here. It is a lot of talk and diagrams, and sometimes it is a lot nicer to just play with something and say, all right, let me see what this is actually talking about, let me go turn some knobs on the landscape to see what happens, so we hope to get that out to folks fairly soon.

If you want to get notified, if we don't get to you, just join the South Atlantic LCC website. You get a monthly newsletter and we will make sure you know when it is out so you can mess around with it and tell your staff what you think, what is good about it, what is bad about it, how it can be improved.

MR. McDERMOND: In summary, we talked about how we are going to build a partnership, establish at a capacity, and then this thing that Rua just got finished, which is really the guts of our business here is trying to make sense of all this information in a way that will inform decision-makers, whether you are a regulator, whether you are a land manager, whether you are a county planner.

Ultimately there is a huge number of customers out there that we think could take advantage of the information that we are trying to put together. It is not about as this is a plan thou shalt go do it; it is only as good as it is credible. There is a challenge that we are working on now is how do,

once we get this built and assuming we get the credibility around it, how do we get it out there? That is part of our future work. Those are sort of the next steps is refining that plan.

I was happy to see an example of this through the SECOORA effort. We've spent about a year, give or take, trying to move out with this general idea, this visionary enterprise and we now need to step back and do a strategic plan or a business model or what have you. It is a very different thing, so it was neat to watch what you all had for SECOORA and how you did that, because we are right in the guts of that right now.

We also have early products coming out that we have been working on for a while. We are working with some customers, partners out there to figure out how do we deliver urbanization models or down-scale climate information, kind of some early wins, if you will, like the South Atlantic Alliance talked about, so we can show the value of this integration looking at the scale across resources, and then obviously continuing to communicate and develop the partnership.

Just sort of summary, we are really trying to integrate the science and the shared conservation goals of the partnership to develop a plan, a blueprint. Whatever you want to call it, it is a vision for the future; the answer to the question what are we for? The science needs, we have some funding, and we hope others will invest based on the needs that we have related to that conservation planning effort.

Maybe as we downscale that effort to more localized questions, we will identify additional needs. It is not science for everything; it is science for this mission. It is science to feed this planning effort and to inform. The other message I want to make sure you know is that there are a lot of different ways to influence the partnership. It is not some clique or anything like that. Everybody has the opportunity to try to do that. We are going to focus on issues that cross multiple resources. Anyway, Rua, I think that is kind of what we have got. Thanks.

MR. WILBER: We do have several minutes for questions or comments.

MS. DEATON: I have one question now. You are looking at both terrestrial and estuarine and marine habitat; is that right?

MR. McDERMOND: That had to be the first question; surprise.

AP MEMBER: And I didn't put her up to it.

MR. McDERMOND: No, Roger did. Okay, so that is a great question. To go back a little bit, it is a little bit of an unanswered question, but here is my sense of it. I am trying to choose my words here because I am trying to not be organizational or territorial or anything like that; but I think that the LCC mission, I think that ultimately it should be integrating from the western edge there in the Piedmont out to the EEZ.

The fact of the matter is at this point that the network, although it was established and intended to do that, it sort of mapping-wise stopped at the coast and we never really made that leap, but

there is language about that intent. For example, DOI has interest, the folks who sort of put the money in this, out into the marine area, so the intent is there.

Interestingly enough, around the country – I think it is going to be simple here. Here we have got the council as part of the steering committee early on in the development clearly articulating we are interested in this, this seems like the right thing, there is a connection. Interestingly, not all the councils around the country have the same enlightened vision, I guess.

There are sort of some challenges there around the country. That being said, the network at a national level – and again it is self-directed – the coordinators from across the country have developed a paper that is basically saying each LCC should be thinking about this, should be working with partners to do this, but it is really up to each individual steering committee.

Our current reaction from our steering committee, the way I interpret it is we think this makes sense, we are more concerned about how much you can bite off right now. It really goes back to like my discussions with Carolyn and Michelle on the South Atlantic Alliance. We have had those discussions, but I haven't put a whole lot of additional energy into it because I am kind of being said how much can we handle right now.

But I think we will get there and that is why we are expending some energy here, too; we need to keep that going. It ultimately in a strategic planning process that decision will be made. I am not sure how much different it will be. It is really about integrating with the existing efforts and figuring how we take advantage of that information and what the questions are out there of customers, I think. Does that help? Rua, did I misstep anything there?

DR. MORDECAI: Makes sense to me; I think that is pretty much the intention.

MS. DEATON: You haven't gotten far enough along in the process that you know even the tool that you are going to use or all your input data that you are going to have?

MR. McDERMOND: I think Rua could probably better answer that question, but if you looked at the framework, the planning framework, we have got those objectives; marine species, coastal species, just need to be input in there to help do that. We have done it. I think we are going to the coast, clearly, with birds and other types of organisms. Have we gone all the way out to the marine environment; no, but that would be a logical thing to do.

MS. DEATON: I was just going to suggest maybe because there are local efforts, maybe it would be more appropriate to stay like up to the water and then where there are other existing efforts doing the aquatic environment. Like in our state we ought to have a strategic habitat area, assessment working area, and we have done about half of the coast, trying to, I think a similar process; prioritize areas that are of particular importance to conserve and provide a network of stepping stones through the system.

MR. McDERMOND: Outside of the state?

MS. DEATON: No within North Carolina only.

MR. McDERMOND: Okay, within.

MS. DEATON: And then TNC did something similar that was actually the whole South Atlantic, so maybe it is putting the pieces together from different efforts.

MR. McDERMOND: Yes, absolutely, and Rua's example like for setting those represent species targets, which are really the priorities of the partnership, we have gone out to the existing SARP, the Atlantic Coast – the bird partnership. We didn't start from scraps; those people influenced that; so the same thing.

MS. DEATON: With ours, we just would have different input data because our priorities were fish species, which fish species are in distress and what habitats do they rely on the most, and went from that direction.

DR. MORDECAI: Yes, I think that is the general idea of being – it is not necessarily going on and trying to duplicate, but more of I think probably the involvement. Especially with all the active partnerships going on here, it is making the connections. That would be the sort of role; just like you were saying, Ken, just like the LLC really looks to Southeast Aquatic Resource Partnership for freshwater fisheries things saying, okay, well, there we go, we are not going to have a new team to do that. It is trying to draw the connections that may not be there and not necessarily try to recreate something new; no matter where the cooperative is going.

MR. McDERMOND: The key there though is the integration of the differences; that it is not just for fish; it is how are we going to look at the fish relationship to the terrestrial species and across states and then how do we link those even broader scales?

MS. BOLTIN-KELLY: Actually a question, Ken. I know we have spoken in the past and it is mainly wearing my South Atlantic Alliance hat, but I am switching gears wearing my dreaded regulatory hat. I guess where I needed – I have had a hard time kind of getting my head around, so at the end of the day the output and maybe this module that is coming out in December maybe could help clarify that; I am trying to just figure out – and maybe you could help give us an example of how when the rubber meets the road and all this stuff is done, how are the states going to actually be able to – states and local folks going to be able to use this to really inform us when we are having to make permitting regulatory decisions.

That is where it really comes into play at least a lot in my mind. I am trying to figure out how does that add value to what we are trying to do so we are making smart, wise decisions and how can we use this and is it more of a tool that we are going to be able to actually query at real time when we are trying to make those decisions? Is that what is envisioned at the end of the day?

MR. McDERMOND: Yes, I think it is all of that. Again, it really is going to come back to this plan. The plan is going to be iterative; it is going to change as we realize new stressors on the landscape. But if we have these goals and objectives for these suites of resources, species or habitats or water or surfaces, whatever they are, this thing is to help us identify where and when we need to take action.

What is important to conserve given all those stressors. As an organization who influences those decisions on how we make that happen, I think an individual – I use this term customer and partner interchangeable because I think everybody who could access that resource, that plan, that vision should be, assuming it is credible should be able to say, okay, I have the ability to work to influence that place to make sure that it can conserve those resources either through my regulations, through my acquisition of land, through my partnership NGO influence, whatever it might be. I think there is a variety of ways. Rua, do you want to take a stab at that?

DR. MORDECAI: Yes, I think that is the idea. I mean it really is a tool. I think just like any tool development it is sort of a conversation up here or something to shoot at; okay, now here is how I would really like to use this. Actually, if you have some ideas right now even and any of you out there as we are coming up with some scenarios to show in this prototype as examples of how you might be able to use it – and I can even try to see if we can work that into the initial development just to sort of see, okay, here is how that might work.

But, yes, that is the intention; it is more of a tool for people to be able to query real time constantly evolving, constantly learning, trying to plug it into monitoring and evaluation networks like SECOORA and other ones, to constantly update it so it is not necessarily sort of a plan that, okay, it is done now we walk away, and it just sits there for five or ten years, but trying to develop that real time resource, and it is going to be evolving based on the ways people come and say, hey, here is how I would like to use it.

MR. WILBER: Okay, we need to move on to the next speaker, Scott Robinson from the Southeast Aquatic Resources Partnership is going to present. I have read that the speaker who speaks just before lunch is usually the most memorable speaker at any workshop. The question is whether they are memorable for getting folks to lunch on time or getting to lunch late, so, Scott, it's up to you.

MR. ROBINSON: Yes, thanks, Pace, no pressure here. I want to thank Roger and Pace and thank the committee for having me here and giving us some time. I think this is a great idea to hear what all these various partnerships are working on. I think we are going to go from probably the newest partnership, the SALCC, to one of the oldest now, which is SARP, the Southeast Aquatic Resources Partnership.

We began to form about 11 years ago up in Tennessee under the direction of Gary Meyers. All the southeastern states came together. Those of you who may be familiar with the Southeastern Association of Fish and Wildlife Agencies, we were sort of spawned from that organization and so that is why we have such a large footprint.

It is basically identical to the Southeastern Association of Fish and Wildlife Agencies. We have 14 state resource agencies. In most cases where there are separate coastal and freshwater agencies, both are members of the partnership; also the federal agencies, the fishery management councils and commissions that are within this geography.

Our job in this partnership, we were formed to make these agencies more affective in their aquatic resource conservation efforts. I admire Ken and Rua for the work that they do putting the big picture together. That can be very complex. Fortunately, in my job I get to focus on fish and where they live. That is really what this partnership is about. That makes it a little more simple.

Some of the ways that we try to contribute to our member agencies and their conservation efforts are through these conservation planning activities which I will talk about. One of our big focus areas is to facilitate local habitat restoration and protection projects through funding opportunities.

We try to find money and put money and partners together to do restoration projects in priority areas. We try to keep everyone apprised of what we are doing and what some of the important work that is going on in aquatic habitat conservation might be. We also try to advance the science of habitat conservation.

We are a charter member of the National Fish Habitat Action Plan. We were one of the original fish habitat partnerships, now going on five years since our recognition. Some of you may not be familiar with the National Fish Habitat Action Plan, but it is a voluntary non-regulatory approach to fish habitat conservation across the nation.
There are about 17 of these fish habitat partnerships and there is a National Fish Habitat Board that helps guide the efforts of the plan and the fish habitat partnerships. Bob Mahood sits on the National Fish Habitat Board as a representative of the Fishery Management Councils. John Frampton is currently our representative on the board for the southeastern states, so obviously that will probably change shortly.

We developed a Southeast Aquatic Habitat Plan about five years ago. You have to have a plan apparently to be a partnership these days so that is their first requirement is at least one plan. When I came on as the coordinator, that was the first thing we did was put this plan together. We got input from a lot of people across the region. As you might imagine covering such a large piece of the country it is a pretty broad-based plan, but we really tried to identify the critical pieces of aquatic habitat and what we needed to do to protect those.

After we had the plan, it might have been a little bit backwards, but as I said that plan is a requirement, so then we started working on assessments. We actually work on habitat assessments at two levels. We contribute to the National Fish Habitat Assessment, which is directed by the board that I mentioned earlier and then we also work on a regional assessment for the southeast region.

I want to talk a little bit about this national assessment first. This was recently completed, the first iteration of it, and actually started now on the second iteration of it. The Science and Data Committee of the National Fish Habitat Board looked at landscape metrics that described human activities in watersheds and those that are particularly related to aquatic habitats and aquatic habitat health.

One of the challenges was finding consistent data across the nation for these variables. We narrowed it down to 13 variables that had consistent data nationwide or fairly consistent data, and also have impacts either directly or indirectly on aquatic habitat health and conservation. I won't read those, but they are pretty obvious variables that were incorporated into this.

The coastal assessment took a similar approach. In some cases they consolidated some of those variables even more but looked at primarily the land cover, river discharge, pollutant levels and utrification. Both of these processes for the freshwater in the coastal and estuarine areas came up with a risk of habitat disturbance score, so it is really a risk assessment as much as a habitat assessment.

It goes down to the reach level on the National Hydrography Data Set. It is hierarchical, so you can look at it on a stream segment, from a Hook, a network catchment, and then on up into larger pieces of geography in several different systems. It is compatible with the Hook System as well as the EDU system that is used by the Nature Conservancy.

The nation was divided into these various regions; obviously, the coastal plain there in the southeast is the one that we sit in now and the one that most of you are probably most concerned with. We looked at various representative taxa there and how the habitats affect those taxa and looking at stresses for each of those taxa.

This is a percentage of the network or percentage of the watershed that might be a medium density urban. I am not sure which particular variable that is, indicator variable, but there are some pretty obvious breakpoints in most of these variables. Where once you reach a certain percentage of medium density urban in the watershed, you are going to see that particular indicator variable decline.

I am not very good at this powerpoint stuff there, but here is the national picture. This is basically what was developed, and again this is a risk assessment. You see some typical hotspots, Atlanta, upstate South Carolina, urban areas of North Carolina and Virginia as well and then, of course, some agricultural areas. Also, we some pretty significant risk to aquatic habitats. To zero in a little bit on the Southeast Region, the South Atlantic in particular, and this includes the coastal assessment, also, you see some of the risk again of current habitat degradation.

Red is very high, so you see that up a little bit in North Carolina and also in our urban areas that are further inland. This helps address that question about what is the state of the ocean in this region. If you look at it, remember this is on a national scale – eve though I am only showing three states here, this is on a national scale.

At a national scale our coast and our – at least our coastal and estuarine areas are not in particularly bad shape. We face some significant challenges locally; but when you compare it to other areas that are in the country, we are actually in fairly good shape. I think we can look at some more densely populated areas of the country to see where we do not want to go with our habitat conditions.

Then the regional assessment, we focus in a little more on the region, and we are going to try to develop regional information and regional data that will tell us more than this national assessment and really let us get down to what we need to work on and where that is. We looked at riparian areas, and I think that is one of the most important aspects, particularly of freshwater habitat, probably estuarine, also.

We have looked at those; we have looked at land cover within those riparian areas. It helps us develop and measure our progress towards quantitative targets on habitat conservation. We looked at again the land cover in these riparian zones. Around the region we have several products that can be provided that show some of this.

Now this is what your riparian areas look like in this region. We considered disturbed land cover to be urban or agricultural. Most of the other land-cover classes, we considered to be undisturbed for this particular process. When you compare this to the overall national assessment, that map up on the left side of the screen is the national assessment from those 13 variables. The map on the right side is the riparian assessment.

I think that illustrates how important riparian areas are to fish habitat and fish habitat health. We also look at species and where we might find important species, species of concern. This is one of the maps we developed for the Gulf Coast and then the South Atlantic. It shows some of the species of concern for the state, state agencies and our other partners and members who have identified species of concern.
We developed a weighted ranking for those, and this is what the South Atlantic looks like for that. This is some useful information. Another thing we have put a lot of effort into and we are currently focusing our efforts in the South Atlantic is the in-stream flow network, really designed to help again our partner agencies, some of which have regulatory responsibility to address in stream flow and estuarine in-flow issues across the region.

We are trying to develop the science and the information needed to help them better address those flow issues. We base this on a Aloha process that was developed by the Nature Conservancy. These are some of the priority research topics that were identified and some of the places where we are currently working to try to develop better information regionally.

Regional river classification system, a lot of time when we talk about habitat conservation, you will see many different classes of terrestrial habitats. You might see bottom land hardwoods or upland pines, grassland areas; and then when it gets to the water, it is all blue, and it is either freshwater or saltwater, and those are your choices. We are trying to develop better information for aquatic habitat classification, beginning with rivers in this region.

This is sort of what our river classification framework is based on. These are some of the variables that are under consideration. There is a hydrologist that works for the Fish and Wildlife Service, John Postini, he is leading this process, and he could tell you a lot more about these than I could probably and that whole process.

We have also worked regionally to get the states to contribute fish data to a system called the Multi- State Aquatic Resource Information System. This is something that the National Fish

Habitat Action Plan is using, and we have worked hard to get these states to standardize their data as we begin to look at habitats across the region. Multi-state habitats in many cases, the states have data that is not comparable.

We are working with these states to begin to develop some comparable information on fish and where they live and their population status. This is a risk of flow alteration. This is another part of our habitat assessment that we are working on looking at where the greatest risk of flow alteration, whether it is estuarine inflow or in-stream flow within rivers where we might see some of that.

These are some of the factors that we are using in that particular effort. Now this is the fun stuff. This is where we do habitat restoration actually on the ground. So far we have funded or contributed to 60 on-the-ground projects in the five years that we have been a fish habitat partnership, located in just about every state in our partnership.

We get funds through the National Fish Habitat Action Plan and we also receive funds from NOAA. We are a regional partner in the Community-Based Habitat Restoration Program, which I am sure some of you are familiar with, probably most of you, so I won't go into a lot of detail on that, but just show you some of the things that we do there.

We recently had a request for proposals and we are reviewing those proposals now and we will be selecting projects for funding shortly. Projects are generally 18- to 24-month projects. We do require some quantitative monitoring post-project, and funding does need to go to on-the-ground habitat restoration or conservation.

Those are some of the types of projects that are eligible for funding and we have funded some in most of these. We have focused a lot of efforts on shellfish and also living shorelines and shoreline protection and restoration. We funded more than 11 in 2008 and 2009. Again, proposals are currently under review.

My symbols didn't show up very well on this map, but this was intended to show where the projects are along the coast; but as you can see, we did have projects in every state along the South Atlantic. This is one that was in Georgia, Sapelo Island, oyster reef and shoreline stabilization. This was one working on a fish-attracter design, construction and installation.

Finally, I want to talk a little bit about community engagement. We think this is absolutely critical. We want to take fish habitat conservation to the masses. I am not sure how to make it appealing to everyone but we will do our best here. We are working with local counties and local governments when we can and when we can get the funding to help them understand how important it is to protect fish habitat from a human habitat standpoint. That is about all I had and hopefully I got us back up on time and we will make it to lunch. I will be glad to take any questions.

MR. WILBER: I just have a quick question, Scott. One of the interesting aspects of the Regional Fish Habitat Partnerships is that there tends to be a lot of overlap between partnerships. SARP is one of the older ones and one of that core group of founding regional fish habitat

partnerships. Can you speak some a little bit about how you interact with the Atlantic Coastal Fish Habitat Partnership and some of the other ones in the Gulf that you kind of share geography with?

MR. ROBINSON: Sure, we have identified a lot of common priorities; and actually with Atlantic Coastal Fish Habitat Partnership we have actually had some joint projects. We were recently awarded a grant where we applied for that grant together with Atlantic Coast Fish Habitat Partnership and the Eastern Brook Trout Joint Venture, which also covers some of our geography, so we are going to be working together on some habitat assessments.

We openly share information regularly, you know, all the standard types of keeping those lines of communication open. It just takes work. That is really the bottom line as Rua and Ken, I'm sure, and then these other coordinators can attest, it takes time and effort and a lot of times that takes a dedicated person to be able to do that, to be able to make sure that we are working together and effectively moving conservation forward without stepping on each other's toes. Any other questions?

MR. WILBER: Any other questions or comments for Scott? Okay, I am sure he will entertain questions over lunch as well as the other speakers from this morning. It is going to be done out in the hallway, bring your plate in here, and then Tina is going to do a live demo of the web services stuff, and we are going to hope the live demo works.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Charleston Marriott Hotel, Charleston, South Carolina, Wednesday afternoon, November 16, 2011, and was called to order by Chairman Pace Wilber.

MS. UDOUJ: (Recording started here) You can carry on and I will just demonstrate; and if you have any questions as I am going along or you would like to zoom into a particular area or see a different layer that you have an interest in, please just let me know.

This first view is the South Atlantic Council's managed areas, and so we have compiled the Deepwater Coral HAPCs. The marine protected areas are showing here. Some other federal managed areas are displaying the EEZ. This is just a combination of a lot of different layers together. When you click on this "more" button at the top, it shows all the layers that are available in this particular service.

You have got a bathymetry layer, the special management zones, restrictions, lots of different things. I am going turn that bathymetry layer off, it is kind of busy. But these different layers are being configured so that when you click on them you automatically get information associated with that spatial feature.

This one brings up an image for the marine protected area. You can get to images through this link, and you can also get to video. That is going to take a little bit to load up; we will come back to that. This data came from – I heard his name yesterday – Andy David. He supplied this information to us a long time ago, and it is a neat way to look at what that marine protected area looks like exactly. The tool bar at the top has a variety of little widgets.

This one is a bookmark feature that I just added certain bookmarks where you can just jump to. Say you are interested in the Oculina Area, you can zoom in right to that; and then all of the other different Deepwater Coral HAPCs. That is a nice feature. This is a way you could find an address, but there is also ability to zoom to a particular lat/long. I think this is a handy feature. If you know an area that you want to get information to see what we have available, you can jump right to it that way.

AP MEMBER: It is available online now?

MS. UDOUJ: Yes, Roger is pointing out that this is available. The link is available on the South Atlantic Council's Website, on the GIS and data page. The GIS data page has the new web applications that I am talking about right now. This managed areas is the first one in the top of the list. You can get the link there.

AP MEMBER: Does your computer have to have anything special?

MS. UDOUJ: Good point. Yes, these new web applications are Flex-based and that means they require Adobe Flash Player. As I mentioned yesterday, most of you were here, Roger wasn't really happy at first because it doesn't work on his iPad, but it works for the other 99 percent. The link for these applications you can get to through the South Atlantic Council Site, and this first one I am showing is managed areas.
There is one specific for fisheries and there is another one for EFH. I was kind of going through the tools that are available through this application. This is where there is a lot of potential in the future where we can add more tools; different geo-processing tools and when we migrate our software for Arc GIS server, which is the background software required for these to make map services.

We are at 9.3 and when we make the transition to 10.0, there is going to be a lot more capabilities coming, so stay tuned. This is a little custom pre-canned query basically for the seasonal restrictions that show the different closures. If you see one you are interested in, you can zoom to it. Okay, you can search for a particular marine protected area. Let's see if I can get it to work. What was the one yesterday; there was a lot of discussion, the snowy wreck. It might be case sensitive.

I need to make that smarter so it would not be case sensitive. It might have Snowy Wreck MPA in the name and I don't have that. Draw and Measure is another neat tool if you kind of want to get a general idea of how much an area is encompassed around the Georgia MPA, let's say. Let's bring that tool up.

MS. UDOUJ: Just quickly, if you wanted to estimate around Georgia MPA. I can't even read that and I am right here. I think it is 185 kilometers in perimeter. I don't know if that is 2000. It is getting bigger as I expand, that is neat. That is a real simple way to get a rough estimate on area measurements.

You can have fun, you can draw polygons, and you could zoom in, of course, much closer. That is a quick estimate. Okay, close all that and then a print tool if you wanted to make a map to share with a colleague. Then I guess it would jump right to you. If we had a printer set up, it would take care of it.

Another thing that we have available with the South Atlantic Managed Areas Service is we have included another layer of marine habitat that as I explained yesterday was created by our agency, and it is mostly Florida habitat data, but those regional data sets like the SEAMAP information is available through this cached service. When I say cached, it means that it is all pre-tiled to draw very quickly.

The South Atlantic Council Services are not cached because we want that inner activity of being able to turn a layer on and off as you navigate through the site. I hopefully can show that. See under marine habitat there is not a box to turn something on or off.

I know Roger really wants to turn off the artificial reefs layer because there are so many points around Florida and the icons are kind of big, but that is just not a feature available but you have a better performance of your map service that way.

Florida has several cached services that we could incorporate into these applications that we are developing for the council. There is marine habitat layer that we are showing here, there is a boating layer whose awesome aerial photography, which is really not needed for most cases, but we have that available for Florida only, so that is just a neat way.
If there are partners here that have map services running, there would be a way to incorporate their map services within an application with the council. That is a neat way to data share without having to store all the data. Any questions about this? There are different base maps that you can look at. If you are more interested in like knowing off the coast what city is the closest, you have that you can have your aerial imagery choice.

MR.WILBER: If I had a proposed pipeline corridor or a proposed training range for the Navy, and I had the coordinates for those boxes in some kind of report that somebody gave me, how would I put those coordinates and draw that box on this map so I can see how it relates to the various layers that are in it?

MS. UDOUJ: I don't know about the box; I know you could jump to specific lat/long. There probably is a tool available that would do what you are asking and it is not in this right now, but if that was something that you wanted to see happen, yes, I think we could work and –

MR. WILBER: Then if I came back to this three days later, I have to reenter that box?

MS. UDOUJ: No, I think that is where this bookmark feature comes in handy, where you can add a bookmark at your current extant so that you could share that bookmark with your colleague, e-mail it to him and then he gets this service, that extant, those layers, everything the same that you were just looking at.

MR. WILBER: Including whatever box I drew?

MS. UDOUJ: I don't know about the box, but I do know there probably is a tool where you could create your box, convert it to a SHAPE file, then maybe they make – I am just starting with this, but I think there are a lot of capabilities and we are just at the tip.

There is going to be more, but I do know that this bookmark would go to the extant, have the layers that are currently on, and so that would be nice, exact area, and that other thing I can look into and get back to you on that, Pace.

MR. WILBER: As someone who manages a group of ten folks who think spatially but don't have Arc GIS skills, we are always wondering is it Arc GIS or an ESRE product the best way to get to the end or is Google Earth the best way to get to the end; recognizing that the more advanced versions of Google Earth can read SHAPE files and do a lot of stuff that you can't do with the free version of Google Earth. We could draw a box in Google Earth and I could save that box as a KMZ and I can e-mail that box to anybody I want.

There are some advantages to that. There are some disadvantages; Google Earth never looks as nice and pretty as this looks, things like that, but it seems my understanding of how Google works is that you could basically have provided all of these same data layers through Google Earth to folks through a Google Earth server or something like that – I am not sure exactly what the terminology is in Google Earth – and then one advantage to doing that is as you update the data layers, well, as people turn on Google Earth, they would go out and do the little queries to see if the cached version of the data layer is good enough or they download the new one and so on.

It has got all that tiling and stuff inside it, plus you get all the other things that the Google Earth Community can reach out to as well. I don't know what the answer is, but I am always kind of struggling, what is the advantage to this route versus the Google route?

MS. UDOUJ: I don't know that I can answer that question. I love Google Earth and when it first came out, I threw my hands up and said, okay, I am not needed anymore, this is amazing, but I don't know the technicalities of which approach would be better. Google Earth is free so that is automatically really great.

I don't know, I don't play with Google Earth very much anymore. I make KMZ files and can bring those in and that is about it. I haven't played with that professional version that you mentioned either. I know in my office there are a lot more geeky types that could answer that question better. I man I am kind of a geek but not ultra geek.

AP MEMBER: One advantage to GIS over Google Earth is that you are enabled to edit your tables and select the exact points and have all the information about that point and have a lot more editing capabilities within ESRE then you would like Google Earth having –

MR. WILBER: But that is if you have Arc GIS on your desktop; but if you are using it through a web service like this or a browser you don't have those features.

AP MEMBER: But this enables you to have access to SHAPE files as opposed to –

MR. WILBER: Well, Google Earth gives you access to SHAPE files, too. You know that, you used to make me some.

AP MEMBER: Yea, I know.

DR. MORDECAI: I was just going to add one thing to that. I think there are – I was thinking about examples of things that were similar to what you can do in Google Earth as far as the editing and the commenting and making it so you don't have to use desktop software. There are some of these other platforms that folks have been working on them.

Some are based on ESRE stuff like Data Basin which is designed to be more of a – sort of you can draw your box, you can comment on it, share it with people, make your own maps kind of things. I think there are a lot of really interesting national resources that are being developed that are making tools a lot easier. Some of them are built on Google Maps and Google Earth, and some of them are built on others.

There might be some ways of incorporating some of those tools into this in the future. I think it is just sort of like you start somewhere. Then like the questions you are asking, then you start figuring out, okay, is this the platform we keep building on and how do we go next? What is exciting is that there are some really user-friendly ways of getting at some of this stuff that I have seen in some other portals to do that kind of stuff.

AP MEMBER: I was just going to say the other service was the Arc GIS Explorer, which is the free version, which you can do all that that you just talked about and import KMZ and do your own polygons and such. It is not doing it directly to the mapping service, but there is a free version of the software that anybody can download and use to be able to access and manipulate the data where you might not be able to on the server.

MS. UDOUJ: That is Arc GIS Explorer? Okay, so this is another application for the EFH data for South Atlantic. The splash page here just gives a little brief synopsis on the data that is available here and links. This one is the same kind of thing where there are opportunities to look at different map services along with the EFH data.

We can turn that managed service on here and see things in relationship to the Deepwater Coral HAPCs or Marine Protected Areas. Then there again that habitat data layer is available. There again there is a great opportunity. If anybody did have a service that we could pull in and look at wind energy data on top of the EFH stuff, that would be a great thing. What do you want to show here?

MS. UDOUJ: This was a pretty new data layer that we just got from Pace and this is related to EFH permits. It was configured where I put the type of work as the label for the SHAPE file and other information that he provided all came through. We talked yesterday about the capability of maybe attaching the comment letter that relates to a certain project that the council could find

that useful; so there again another feature that could easily be incorporated and make these things more useful. So far, yes, we have just been getting data together.

A lot of my time has actually been configuring servers and getting software to work with one another. It is great to be in this kind of environment and say, wow, like Pace just mentioned, it would be great if we could do this and that. Do you have a comment?

MR. WATTERSON: I was just going to mention something back to what Pace mentioned earlier. A lot of our Navy training and testing operating areas, they are pretty standard. If you need SHAPE files of those we can probably provide them. I don't know if that is something you would want on a website like this. I mean we could certainly give you those SHAPE files if you wanted to pursue that.

MR. WILBER: You gave them to me the last time; I have got them.

MR. WATTERSON: The other question I had. I noticed for like the MPAs you had links to videos and photos. With a lot of the work we have done, we have a lot of video and photos particularly for the North Florida MPA; is that something you would be interested in having for this website?

MS. UDOUJ: Yes, that would be great, very great.

MR. WATTERSON: Then we can certainly supply those.

MS. UDOUJ: I don't even know if I have one for North Florida.

MR. WATTERSON: We covered a lot of area. I think a lot of what Andy David focused on is typically the shelf break region of the North Florida MPA, and we have some stuff from other areas within there.

MS. UDOUJ: That would be awesome; yes, thank you.

MR. PUGLIESE: Actually, as you get further down the road on Navy information, we definitely wanted to be able to tap in on habitat distribution, any of the characterization. I think that offer was made at the last time we discussed this; and now that it is completed, that we would be able to get to not only video but specifically more detailed Navy information.

As we get further down the road, we want to be able to get to the Navy information integrated into this; so as a partner be able to go, yes, that is one of the pieces. But I was going to tap you on really getting to a lot of that other data and the idea of being able to share between – I think it would be just really excellent to be able to integrate it into habitat distribution, any characterization, as well as video et cetera. As far as we can work with you on that, that is going to be really important as a partner in this whole process.

MS UDOUJ: This is another application for specific for fisheries and data. The information we have collected so far, we have some new data from the SEAMAP South Atlantic Data Base. It is

not comprehensive yet for all the surveys that take place with the SEAMAP South Atlantic program, but it is a starting point. These are species – we have some point data for species that are of interest to the South Atlantic Fishery Management Council.

What is displaying now is some SEAMAP data for black sea bass and also the data points from the MARMAP program for black sea bass. We can look at new data layers that show general distribution based on information from a workshop that Roger sent me recently. We took the information from fishery experts sitting down together and saying where are these fish typically found, so that is what these data layers represent.

The lighter colored polygon shows the general extant of this species and then the darker shaded areas show the mean area where that species is found. The middle part, the yellow kind of mustard color would be the mean depth that they are found and then the darker colors would be the range of depths where that species are found.

MR. WILBER: Will it be obvious from the metadata what life stage you are referring to with the dots and the polygons and things?

MS. UDOUJ: You know, that is one thing that is lacking for the viewer right now is the IMS I had it configured where if you wanted more information about a data layer, you just clicked on it and up came the metadata files. That is one of things I need to do for these applications is enhance the data layer listing, so that either there is either an icon by the data layer that you click for metadata or clicking the layer itself activates the metadata. But, yes, I am not real happy with the table of contents or the listings of layers, but there are other widgets available to make a better enhanced layer list. Yes, the metadata is so important and it needs to be right there with the data I think.

MR. WILBER: Now, for black sea bass did you have actual point data, too, or is it just the polygons?

MS. UDOUJ: Well, for this general distribution it was based on information from fishery experts in the South Atlantic Region. I have got the data points from MARMAP that were showing earlier.

DR. REICHERT: Yes, this was based on the information from the life history table at the Fishery-Independent Workshop, so that was a compilation of literature and expert knowledge on the life history and distribution of those species. It looked at MARMAP/SEAMAP data, what is the center of the distribution in terms of depth and in terms of latitudinal gradient. That did not take into account differences in distribution for males and females or juveniles, et cetera, but this is a very general idea of the distribution of the species. The intent is to refine that and to add some of the more life stage specific information. Does that help?

MR. WILBER: I'm just trying to interpret this. All right, so the dark green that is adjacent to the shore, that dark green means what on this map?

MS. UDOUJ: That would be a range of depth that the black sea bass is found.

MR. WILBER: You are telling me because the dark green goes way up in those rivers, that the black sea bass are found up in those parts of those rivers?

MS. UDOUJ: Yes, this is not perfect; this is based on like a crude DM. I think maybe it was 2 meters to 130 meters was the general depth range for them. That is how it is displayed here. These can be converted – you know, this is like my first attempt to make something and I need that kind of input.

MR. WILBER: Marcel or somebody might suggest where the inland cut-point is for this green?

MR. PUGLIESE: Let me jump in. This is the first generation to try to translate those to get general distributions of these species, spawning locations and core distribution. It is one of the things that are always talked about on a lot of the things just understanding the basics. The first step is here. The next step is refining these, working with the MARMAP, SEAMAP, SEFIS, and all the experts to then get a better – translating these to polygonal instead of rasterized box kind of areas, and it will go further.

But the real point here is that what you have is you have got the fisheries information, you will have general distribution you will have the ability to look at higher concentration areas and CPUE ultimately that could be generated from here through MARMAP, SEAMAP, and others and then even habitat layers relative to all those, so you are building a tiering of all this information together.

This is again going to be expanded and refined as we get the rest of the MARMAP information integrated in the system, the rest of the SEAMAP. We will even work with Pamlico Sound Survey to be able to integrate, so then you would have inshore and offshore and everything from fisheries-independent surveys in a place that people can work with that and refine that information.

MR. WILBER: I am just wearing my very selfish EFH consultation hat here, and 95 percent of my consultations are from the shoreline landward. I am always looking for the best data source to tell me what fish occur in what parts of places like Charleston Harbor and things like that. When this green extended inland; you know, that caught my eye immediately because I wanted to know if any thought had put into the green extending inland or whether that was still sort of a cleanup issue for down the road.

The data set we use most often now, even though it is a report that is like 20 years old, is the Elmer data files. The Elmer has salinity polygons for the inshore bays and it has got oodles and oodles of tables that tell you what life stage for what species is present by what month within that salinity zone.

There is a whole lot of concern sometimes about how those Elmer tables were put together and things like that, but by and large they do seem to work and it is the kind of – it is in a format that we can readily use. If there is confidence enough in the Elmer data, at least there is a best

available. You could suck the Elmer data into this now because you do have the salinity polygons for it.

MR. PUGLIESE: I wanted to jump in, because we have discussed that before, we wanted to get it in there but actually what is a step further than that is the next work that we are working with FWRI, I mentioned the other day the eco-species, which is essentially taking what was a more concept of Elmer and then applying it to the entire region and refining it to have up to -- right now I think there are seven pages worth of individual species characteristics, habitat, population life stage; everything to get further down the road on refining that type of information, so then it becomes more useful.

The whole point of this is to take it to the step, and I agree that was at that time at least giving you that kind of resolution where you can tie this to the habitat distributions. Of course, this is also going to tie back to the EFH designations and those finer resolutions that we are doing and getting for the guide that is going to be developed in the future, so incrementally moving along to really build that species, habitat connections, distribution and the whole nine yards.

MR. WILBER: Well, you know me; I am always looking for what I can use today, but being appreciative of what is going to be available at some point in the future.

AP MEMBER: Kind of building on what you said and coming at it from the kind of opposite angle as Pace, I am in the enviable position of having to prepare a lot of those EFH assessments Pace gets the pleasure of looking at. This kind of resource is great for us. One of the questions I had though, building on what Pace was saying, is when you had that data that you just displayed; is there some way you can go or find out what the metadata is associated with that in terms of what are the caveats for the data you are displaying and what are the limitations of that data, because that is a very important aspect of it.

MS. UDOUJ: Right, and I agree completely. When at the next level of the software and I can go to a new level of Flex, there are opportunities of having a better layer list where a metadata icon or a click at where you can get it right away, and I don't have that set up yet, but that is the plan.

MS. DEATON: I was going to say or even a contact name and number so if it is from multiples—and maybe it is state data or maybe it is a federal program that they know who to go to so they can confirm. On some things you want to make sure you are right like EFH documents. Then I was just also going to mention that Marine Fisheries also did something like this.

One of our GIS guys made like a biological database that you can punch in the program, you have to know what program is collecting the data, species you want up to 70 species, the years, and the sex. There are several parameters and it will give you a map real fast, simple and easy. I use that a lot just to see where in general a species is, and maybe a link to that or something would be helpful.

MS. UDOUJ: That sounds cool.

MR. WILBER: Well, along those lines there is that southeastern taxonomic database, whatever thing, that is at South Carolina DNR that has a query told just like what Anne described. That would be a great thing to look at.

MR. PUGLIESE: We definitely have the option to do that because this is supposed to be connected in with SEAMAP and SERTC has been umbrellaed under SEAMAP now, so hopefully I think that is an excellent idea and this is supposed to be providing all of the GIS presentation for the SEAMAP program now, so ultimately I think that is something that we could work with Marcel directly and with the SERTC program to get that integrated into the system.

MS. UDOUJ: That is where we are now and we have big goals for improving as we move forward. There will be more SEAMAP data available down the road and hopefully more MARMAP, and we can fine tune maybe these distribution maps that they are more useful or meaningful; ability to get to metadata so that you know what you can and cannot use this data for.

Those are the general services right now that we kind of organized based on management issues, but it could be that all these data sources are combined into one mega service or maybe just two different services, but we are kind of just getting better at this. We have struggled with just getting the software set up, and now I am so much happier with the Flex applications versus the box that came with our GIS server. I just see it getting and better as we go.
DR. REICHERT: I have a suggestion. If you start building this further, I suggest to look at the SEDAR schedule. For instance, next year vermilion snapper and red porgy are coming up. I think those are prime species to focus on. This is a double-edged sword, because you can provide the information for the data workshop.

On the other hand, the data workshop can provide a lot of information for you to refine this and then look at the – gray triggerfish is another important species, a couple of others are coming up in 2013. I think that would be a unique opportunity to kind of start to match these two up.

MR. PUGLIESE: Yes, and, Marcel, that whole eco-species effort, that is what that was intended to do is to actually provide a report, not only have the information that is going to be online, tabled and accessible, linked to and create a product for an individual species. The first one on line is red snapper.

The idea is that that program is going to be expanded to track as SEDAR assessed species are coming online, that we can get that updating of information, compiling information and then step to the SEDAR process with that and then have a two-way communication. Say in that eco-species tabling, it gives you the status that ties back to the assessments, and information to the assessment also potentially could feed input parameters, the most recent information on natural mortality, et cetera.

That is definitely intended of this next other component that is going to be tied to this. I think, yes, that was what I was going to recommend, going back to this digital dashboard, this was an opportunity to connect a number of these, and so I think it is going to be real critical that we get

to that next state of having a link back to SEDAR to make it as useful as possible both in the detailed individual species characterization document that has been put together, but also in an individual species; this eco-species compilation that goes far beyond what the original Elmer work was to give you the most detailed and the interactive and updatable on a very short time scale. The first generation is going to have over 90 species because of Florida's detailed characterization of that information for the first step.

When this comes online, it will have a pretty core; so it will be everything from prey to managed species in the first iteration; then with the intent to expand it, managed in assessment species, but then ultimately all the managed species for the South Atlantic Region.

(Question asked off the record.)

MR. PUGLIESE: The project is funded through this year so it is already – the first tabling structure is in review right now that we are going to get you directly tied into on that look. The first report of the structuring and status will be in March of next year. This is going to be developed through 2012, so it is going to be sooner than later. It is online. The idea though is that this project right here is the first time EFH money has come to the South Atlantic Region.

Essential Fish Habitat has gone everywhere else in the country; and even though we have been working on everything here, I think we kind of fell to the wayside because we did a good job, so they funneled money everywhere else in the region. The Southeast Region got this funded. The intent here is this be a foothold to get additional money that is supposed to support this, so that we can get those future detailed reports done for individual species and expand the entire capability of this product, because I think it is going to be a real critical one.

But the big thing is that it is moving forward and it is going to get done sooner than later. I think truthfully it is going to be done sooner than the timeline they had just because some of the people working on it have been chomping at the bit to get this done.

DR. REICHERT: I want to stress the fact that at SEDAR, at the data workshop that is where you have all the experts on the species that are accessed. I think that would be a unique opportunity to strengthen that information in this database.

MS. UDOUJ: Thank you; and anything else, Roger?

MR. PUGLIESE: How about eco-species?

MS. UDOUJ: This is going to improve, too. Me and Roger never did get to sit down and really hammer this out, so there are opportunities for more links and better.

MR. PUGLIESE: I think what would be worthwhile is at least touch on what this is, because we do have the new participants that were not able to see the presentation you made on the move towards the digital dashboard from the different partners and presentations. I will start it and then you can get into it a little bit more.

With this commitment of building the IMS and then into the individual services in our region, we started looking at really what the opportunity was to begin to expand the availability of this information but also integrate and connect to information such as the fishery ecosystem plan, partner capabilities and information; and what became from looking at it was an opportunity to create what is called the Digital Dashboard.

What we are looking at after talking extensively with Kathleen O'Keefe, the GIS coordinator for the state of Florida, who we worked so closely with and worked through Tina on this, this became an idea that, well, maybe this can really kind of facilitate those next generations, because we are still looking at new service development such as ocean energy and other capabilities, but this could connect these to documentation and to other efforts.

What we have is Tina has been working on this first generation of what this can do, so it can provide everything from fish information to habitat information to management activities to capabilities in our region and partner capabilities. I think that is something that I have been trying to integrate for a long time in here, and this might be the most effective way.

Some of the things such as the coastal assessment that was talked about, we can have direct links and connections to that effort and then inputs and outputs from that. You can jump back and forth between a number of these different capabilities. As you saw with the way Tina had presented, you could actually embed connections to services. You could have multiple services feeding on each other or having access to each other.
This is the first attempt to put a face on this structure for our region. This is like a broader habitat and ecosystem regional service, regional Digital Dashboard to support management, research, regulation, and coordination of our area. I will let Tina kind of at least touch on what was kind of the structure, the capabilities and then what we envisioned. Right now one of the first things is this is a big jump from the last time I talked to you because in individual jump pages you will be able to have a lot of the detail before it actually goes into the service.

You would look into here, you could have connections directly into, say, the Fishery Ecosystem Plan, subsections of that, but then the service would be there so you could jump back and forth and have connections back to regulations existing in other areas that detail individual species that may be connected. That is going to be expanded and refined, so let me shut up and let Tina do it again.

MS. UDOUJ: No, you just keep talking Roger, it's good. Yes, the intent here is to provide links to all the partners and projects that we are working on. It is developing. I don't know what else to say; I don't have the gift of gab like Roger. But basically, yes, so that all of our projects can be accessed from one place and more information. This is just the dummy and we are going to fill it in and make it better.

Roger and I didn't have an opportunity to story board it out before the meeting and this is just my best attempt to kind of capture everything that he has talked about. I know he is so happy to have everybody here at the table and really pull things together. I don't know what else to say, Roger. It is going to get better as we go forward, too.

MR. PUGLIESE: For example, we can have direct links to where a lot of other work has been done, say, with the work under – I don't know how many are familiar with the ecosystem tools network and tool capabilities for ecosystem assessments down from the local level to regional levels to whatever; building those connections in here, so you would have access to the tool capability but could jump back and then make the connection back to managed species or regulations in place; and maybe some of the other partners that have data sets that you could run through, say, some of these tools that have been developed.

Making that connection for our region for all these different capabilities and addressing council's mandates and different things is the concern I see or the opportunity I see; linking with other partners such as say the Developing Alliance and ocean planning and ocean plans. We have a Fishery Ecosystem Plan that has a foundation of fisheries information, habitat information, very detailed thing that could be a foundation for at least the fisheries components.

Making that link between these would be probably pretty critical instead of reinventing the wheel in certain cases. I think this is an avenue to foster and expand the discussions that we started from yesterday and then enhanced into real collaboration today and make it functional for our region and really tap in on new technologies.

Some of this processing capability is just so far beyond what it used to be, it makes these kinds of things actually operational. I guess Tina probably would appreciate at this time if anybody had some kind of initial responses and capabilities of where you would see other useful types of things being added into a system like this.

AP MEMBER: Well, I think this is really interesting. I guess two things based on all the conversations we have heard from the variety of partners today of which this idea of getting data out there and making it useful for people to make decisions is coming at it from a lot of different ways, and I like the way that the dashboard kind of puts up some of those questions.

I guess one thing that I would ask is what is the openness to the council to thinking about making this not a South Atlantic Fishery Management Council Dashboard but actually pulling these different partnerships together and making it a South Atlantic Dashboard that becomes a little bit more so that the questions the individual groups, like the fact that the South Atlantic Alliance is thinking about pulling one together that maybe brings in slightly different data or analyzes it in a different way; it comes up here and it is not seen as being part of the council, because there are authorities and things associated with any of those groups that could be challenging, so I guess I raise that as one question.

MR. PUGLIESE: Well, we can discuss how to evolve from here. Truthfully, if you look at the original IMS, it is identified as a South Atlantic Habitat and Ecosystem Service. Even though it identifies it as connected to the council and FWRI, it was intended to work for regional efforts. Now, we can discuss exactly where this is going to go, and I think that can be something that gets expanded on.

I had mentioned before the natural step from where we are with the services presented and the move towards Digital Dashboard, and expanded connectivity in the SEDAR and other partners is

to have a workshop to refine how this evolves. Some of that discussion I think could happen as some of those kinds of technical details and integration of collaborators happens.

I would hope we would provide that kind of collaboration early next year, maybe February of 2012 or something, because we need to take this to the level and that should be one of the discussions that occurs. Really, this is intended to – even though it is supporting council activities and council efforts, it is supporting the broader move toward ecosystem-based management, more comprehensive capabilities in our region.

I think the long answer to a short question was I would assume we are open and with additional council direction and efforts we can figure out how to work. We are already collaborating on virtually all these different pieces that we talked about today.

AP MEMBER: That is actually feels right on with what Mary was saying is I think the venue for that and what we were talking about with Michelle and all, if we can have that be almost a summit across all these different geospatial working group and the South Atlantic LCC and the folks working on the South Atlantic Alliance and the folks working on this particular tool to just think about and talk about how these things could come together.

That idea of doing a South Atlantic Portal that has all these different pieces and orients it around maybe the questions people might ask, I think that could be really productive and would really sort of raise the bar on what these things could be. Each group could end up sort of maintaining different pieces and components and applications, but it may be a powerful message having a nice cohesive system that people can come to for the whole South Atlantic. I think that would be great if we could have that be a meeting of a few of these different groups, it would be awesome.

MR. WILBER: I think pulling it together as a South Atlantic Portal is really good. I think the psychological adjustment that the council will have to come to terms with if it heads that way is that the council in almost all of its stuff – and we saw it in the presentations today – is very offshore, ocean kind of centric.

It thinks about from North Carolina down to Florida and seldom at any kind of smaller spatial scale. In order for this to kind of start taking on some of the flavors of the LCC and what the South Atlantic Alliance is all about, it is going to have to at least match that offshore focus with an inshore kind of focus.

To develop that inshore focus is one thing you can get all the right kind of data and stuff, but in order to be really kind of useful we are not going to have to wade through these layers of offshore stuff in order to get to the inshore stuff. It would mean conceptually you have a bunch of tiles here that each kind of is a portal into a specific issue.

You may need a whole different set of tiles when you start talking about inshore kind of issues. If the council is going to be kind of the big mover and shaker or the one who really kind of makes this happen technologically, are they ready to kind of go through that little psychological adjustment?

AP MEMBER: I agree with that and I think you could almost be a team. You could almost, if you got those groups together, split it out somehow. But it does involve a psychological ownership issue which is often a challenge across the board with these types of organizations and that I think is going to have to be an overcome; and then who really has responsibilities for each of those boxes; can you get that and be comfortable with who is doing it but still working together. Yes, I agree completely.

MR. PUGLIESE: One thing I will say is the only thing I will qualify is that we do have congressional mandates not only for managing fish and fish habitat, but it also does expand with the mandates on EFH and different things into the water. As long as we are able to achieve those, with the intent of this, with the services and capabilities and the efforts here, that I think is going to be an important component of how far the council goes in terms of modifying or changing or connecting into this system. I think we don't want to lose focus of meeting council mandate, congressional mandates and further.

Truthfully, some of the connections, the first generation was going to look at partner connections here and interoperability, but then getting to something that would be fully functional for our region and for all aspects, that is something I think we can evolve to.

MR. WILBER: Well, I will present the other side. We want something that is cool and works. If it is cool and it works well, we'll figure out some way to cherry-pick from the mandates to justify what we did. But my point basically is this is something I talked about with Roger and Tina a little earlier is like I very much like this concept of a Digital Dashboard with each of those things being a portal into something that is particularly relevant.

But I think my initial reaction; it would have to be obviously thought about a lot more through many smarter minds than mine, but I could see this Dashboard having a separate one for each state. For example, in North Carolina they have got a whole lot of stuff that is very relevant to inshore issues that parallels in concept what is here on this more regional focus.

If you had a North Carolina specific Dashboard, you wouldn't really have that box there that says Fishery Ecosystem Plan; you would have the box that says the Coastal Habitat Protection Plan. Whoever is going to be the custodian and the mover and shaker behind actually building this thing; are they willing to see maybe some of their prize little boxes get taken off in order to get replaced by something else that makes the tool much cooler and much more useful in a particular state?

That doesn't mean we can't have five different tools' we could have one for each state. We could have one for the whole council or the whole South Atlantic, and there is a whole lot of ways that you could kind of structure this. But the point making it cool is you have to be able to get very quickly to what you want. You don't have to kind of tunnel through multiple layers, especially unnecessary layers.

MS. UDOUJ: Thank you for your comments; and, yes, I am taking them all in and we can hopefully -- I like the idea of getting together these groups and meeting and kind of talking and bouncing off ideas and just making things better for everybody.

MR. WILBER: Thank you, Tina. Okay, Roger has advised that we should be polling the group at this point. We are not scheduled to resume until 1:30, so that is like 25 minutes. Do we want 25 minutes of just sort of mingle time here or do we want to see if the Navy is willing to present a little bit early?

MR. HOOKER: I was just thinking that since we are on this subject and if we have a dead time I can show folks the Marine Cadastre and how that relates to this if the internet is actually up and running, which it looks like it is, if there is any interest in that. I won't bore you; I can do it in ten minutes.

What it is, it is basically the same service as this, the Multi-Purpose Marine Cadastre. It is a horrible name, but it is basically our map server. It is actually a joint between NOAA and Bureau of Ocean Energy Management. It pulls in a lot of this data. It is also where you can go to look at where the potential wind facilities are being sited. It pulls in EFH. It has different jurisdictions. The idea there is eventually if the South Atlantic Council goes to the Arc GIS server, there is going to be a lot less of us housing data.

Internally it is going to be able to go to the South Atlantic, pull that data up and display it there or go to Navy or go to whoever actually owns that data set and pull it up. Nature Conservancy will be having their data up soon as well. I can show you where to find it and show you a couple things about it if we do have dead time and folks are interested.

MR. PUGLIESE: As he is digging into that, I did provide the snapshot of the Marine Cadastre in one of the attachments for the many attachments for this meeting so that at least you get an idea of it. I mentioned earlier we were going to build an Ocean Energy Service connection. The idea here is that we would have that connection back in with the Marine Cadastre and collaborate with BOEM and the energy activities in the states as well as that. I think it was the cross between all those different efforts with what we are doing so this is probably a good time to actually get a look at what this is.

MR. HOOKER: We, of course, have disclaimers that are a little longer than the ones that Tina just showed. It basically has the same look and feel of what Tina just showed. I think it is the same setup. But once again let me start off with the preface that this is not my area of expertise. Brian Smith at the Coastal Services Center here in Charleston and Christine Taylor with the Mapping and Boundary Branch at BOEM are your points of contact for this tool.

Quickly, on the right hand side here is the South Atlantic. We can just zoom in there. We do have, as I mentioned, all the critical habitat designations; habitat areas of particular concern, This is national in scope, as you can see, so it has got some California specific data sets on here. We can turn on the Habitat Areas of Particular Concern.

There they are; this is not all of them. That needs to be updated I guess with the coral ones and golden crab, and Pace is telling me some are wrong. This is why it is important to eventually build the functionality where we are not housing the data ourselves, that we are pulling directly from the data provider.

But, anyway, there is a data set on the actual lease blocks; so if you are curious about the actual size of the lease blocks, where the lease blocks are and what the lease block numbers are, once you zoom in here really close you will be able to see each individual lease block number; and as I mentioned yesterday, they are three statute miles by three statute miles.

This one will be updated soon. This is the current wind energy areas. As you can see, I think probably the only ones we have on there are the Mid-Atlantic ones. We haven't updated North Carolina. North Carolina is still early in the planning process so they are not on here yet. You can see Virginia's wind energy area there, and the other ones, Maryland, Delaware and New Jersey up there.

But the other ones, as they come online, will be on here as well. That is where you find that under jurisdictional boundaries and limits. Like I said, a lot of the NOAA data sets are in here. We have navigation, shipping – I think this is the traffic separation schemes – oil and natural gas wells, drilling platforms – once again, this is BOEM-wide so it is not only renewable energy – wrecks and obstructions.

These are all basic NOAA data sets that they are supplying. Any geo-regulations that we have are under here. Obviously, I think if you click Magnuson-Stevens it will probably – it looks like it is the entire ocean. The same thing, you click on it and it will give you the attributes similar to – that one is taking too long. I think I did this one already, so if we did click here and then we clicked on this one it should work. This is still the Magnuson one that was loaded up previously; should be if I click on this one, close that first. Anyway, it seems to be stuck on that. That is why we are closing it down for maintenance.

Anyway, I will just kind of stop there. It is marinecadastre.gov; I think you could go to NOAA's Coastal Services Center; and if you go to the Bureau of Ocean Energy Management website, they both have links to it. We are I think rolling out a newer version soon, and I don't know if that is what the maintenance is this weekend or not, but we are actively working to improve it and add more data layers.

As I mentioned, the Nature Conservancy Eco-Region Data Base data layers; we also have a recent study on space-use conflicts that will provide more data layers to it. I urge you to check back early and often; and, Pace, if you do see errors on things, you let us know. I am sure Chris probably knows about some of what you just mentioned, the HAPC being a little off. We can work to fix that.

MR. WILBER: There was a link distributed for the recent North Carolina Task Force Meeting that had the cleaned up EFH data in it. I think at this point there are a couple of versions of this kind of floating around.

MR. HOOKER: Yes, it is interesting that they had the new link. With this new website, I don't even know where everything is right now. That is why I didn't –

MR. WILBER: I think it was a link that was shared among the meeting participants.

MR. HOOKER: I know there is one that we can work off of internally off the home computers. All right, are there any questions on the Marine Cadastre or where we are headed with it in general?

(Question asked off the record.)

MR. HOOKER: I did know this, but I am not going to venture a guess because I will probably be wrong and there is probably someone in this room that can define it. Did you want to answer that, Roger?

DR. REICHERT: I think it means an entity where files are kept.

MS. UDOUJ: Google is at our fingertips.

DR. REICHERT: No, it is a word, cadastre.

DR.MORDECAI: I think it is related to real estate surveys, and I am going to pretend like I am really smart and didn't just find that when Ken looked it up three seconds ago on Google.

MR. WILBER: Okay, we will begin our afternoon session. Our first speaker is Laura Busch from the United States Navy Fleet Forces Command. She will be talking about the various ongoing and planned activities in the South Atlantic by the Navy. We got a little sneak preview about some of them yesterday. We will hear a lot more now. While Roger is pulling it up, I will just throw out an anecdote. Many of you might know that the Navy is just beginning a couple of year processes to prepare the gigantic EIS that will cover all of their training activities on the east coast and the Gulf of Mexico. That EIS will have sort of a five-year kind of shelf life.

It is interesting; it also takes about five years to kind of put it together, so I guess that is a good tradeoff. We are already starting to muster the in-house meetings at NOAA and with some of our partners to begin to move out smartly and efficiently in helping the Navy prepare that EIS.

MS. BUSCH: Good afternoon; again, my name is Laura Busch. I am glad we had this conference here in Charleston. It has been a wonderful visit. I am here today to talk about the Atlantic Fleet Training and Testing Environmental Impact Statement and the Overseas Environmental Impact Statement and just to let you know your opportunities to engage and review our document.

Just in a quick agenda, we are going to go through the background, our proposed action, purpose and need; our study area, why we train and test. I will go through some of the different events and the goals of our AFT EIS, our alternatives, the resources we are looking at, who our cooperating agency is, the public engagement strategy and the schedule.

The AFT EIS/OEIS is currently being prepared. We have got four Navy commands that are doing this together; U.S. Fleet Forces Command, which is what I work for. We are kind of the operational command in charge of all the training of the Naval Forces in the Atlantic Ocean.

Naval Air Systems Command is in charge of testing and developing air platforms, so they are working on the joint strike fighter, our helicopter systems also, like our sonar buoys and different air components.

Naval Sea Systems Command, they develop and test our ships, so they are building like the Littoral Combat Ship and some of our newer ships that are coming online. Then the Office of Naval research, ONR, which does a lot of our scientific research, and a lot of the different things that don't necessarily play into our daily training and testing, but it is kind of more long-term testing that they are doing.

We are going to sustain our at-sea training and testing by supporting the Marine Mammal Protection Act. We have to reauthorize our permits. We are consolidating our existing authorizations into one letter of authorization. We are consolidating multiple EISs into a single one, and we are increasing flexibility for activities through this measure.

We had our public scoping meetings through August and September of 2010 and we held different scoping meetings along the east coast. A little more on the background, our previous EISs on your left, the Southeast Atlantic Op Areas; we have the Charleston/Jacksonville Op Area in the Jacksonville Range Complex, and then we have the Navy Cherry Point Range Complex.

Both of those had individual environmental impact statements and both of them have – currently we are working under individual letters of authorization for each one of those complexes. We are consolidating those into this document. Then also on the right was the Atlantic Fleet Active Sonar Training EIS/OEIS. That looked at just sonar and explosives; and as you can see it is a much larger study area. It is kind of that lighter blue that goes out to the middle of the Atlantic and then into the Gulf of Mexico.

For this document our proposed action is to conduct military training and testing activities, including the use of sonar and explosives in the waters off the east coast of the United States, the lower Chesapeake Bay and the Gulf of Mexico. This document is unique in that it is looking at both training and testing. Our previous documents usually only looked at one or the other.

The purpose and need is to achieve and maintain fleet readiness by conducting these training and testing activities, and also we are required to meet the requirements of Title 10 of the U.S. Code. We also obviously need to obtain compliance with the applicable environmental regulations. Here is our current study area. It is the yellow that goes around the Gulf of Mexico, kind of skirts the top of Cuba, moves over to the middle of the Atlantic and then up along Greenland and along Canada and back down to the east coast.

We aren't necessarily expanding where we are training and testing but we are just expanding our study area to look at a broader area. The white boxes that you see along the coast and in the Gulf, those are our op areas and that is where the majority of our training and testing activities occur; but we are just moving out to what we are analyzing.

Here are the complexes that are currently in this new document, the Virginia Capes, also called the VA Capes Range Complex, which is off Virginia, North Carolina; the Navy Cherry Point

Range Complex, which is off North Carolina; Jacksonville Range Complex. GOMEX Range Complex is a couple of different complexes in the Gulf of Mexico. They are separated; they are not contiguous like some of the other range complexes.

From the testing community is Naval Surface Warfare Center that is off Panama City. The Northeast Range Complex off Providence, Rhode Island, Massachusetts area – I'm sorry; the Northeast Range Complex is a training complex off Massachusetts and Rhode Island, and then the Naval Undersea Warfare Center off of Newport, Rhode Island.

South Florida Ocean Measurement Facility, that is down near Dania, Florida; we are pulling that in as well. Then we are looking at different ports and pier sides where we do maintenance and testing of sonar systems at the pier. Why training and testing is important; first of all, we have to abide by Title 10 of the U.S. Code, which says that the Navy will maintain a fleet.

We needed to combat certify our sailors and our marines obviously to win wars, deter aggression, and maintain freedom of the seas. You will see the piracy is a big deal kind of happening off the coast of Somalia right now. We have to increase our training activities to teach our sailors and marines how to react to those types of situations.

Some of the systems that we use in mine warfare, we have mine laying, mine countermeasures and mine neutralization. Here is a MH-53 pulling a mine-sweeping sled that looks for either floating or moored mines. We have the undersea divers that actually go up, find the mines and will then blow them up in place.

Most of their testing and training is done with duds or just practicing, but they do occasionally have to blow up a mine to ensure that they are doing it correctly. Then the ANAQS is a mine-detection system. Our surface warfare, we have missile exes, air-to-surface missiles, gunnery exercises – those are air to surface or surface to surface. Our bombing exercises, a lot of our bombing exercises they use – again it is called non-explosive practice munitions, so just dropping practice; concrete blobs actually in the water.

Maritime security operations, that is a lot of our training activities as like we talked about with anti-piracy. The killer tomato here is one of the items that they use as a target for their gunnery exercises surface to surface. They put that out on tether, practice shooting at it, and then they will pull that back in.

Then the surface tow target is another one that they use for the missile exercises. They will pull those out and then the missile will hit that screen that is up there. They will score it to make sure that they hit it properly. Our anti-air warfare, and you see we have the air combat maneuvers. We do Chap ex and flare exes, practice that. Our missile exes, again surface to air, air to air and our gun exes, same thing surface to air and air to air.

The BQM74-E Aerial Target, you see the right-hand side, these are remotely operated or controlled. They will go out; they will shoot a missile at it. They don't want to hit it because those are very expensive. But occasionally I guess they are either good or bad, whichever way you are looking at it, they do hit them, but that is very rare.

Then those things will keep going until they run out of fuel. They will drop in the water and then we will send divers out to recover those and bring those back in. Amphibious warfare, one of the things that we do, you may have heard of fire ex with impasse and that is where they put buoys out in the water to make a fake land so the ships combat computer system thinks that it is a land piece and they will fire five-inch rounds into it and score them.

The fire ex is used to clear an area before the marines go in to take over and before they send an amphibious assault. Antisubmarine warfare, different things that we use for that, we have a dipping sonar, the sonar buoys. They load up in the maritime patrol aircraft and deploy those sonar buoys. Here is an MK30 sub-simulator target, and you see the divers there recovering that one. We recover as much as we can.

Some of our testing activities, like I spoke about Naval Sea Systems Command, they do the new construction, the life cycle management. They also test ships; anytime there is upgrades they will bring them back in; upgrade the ship and then test it again. They do sea trials, sea runs. Our goals of our AFT EIS, we need to support the renewal of our existing MMPA authorizations and our Endangered Species Act and Magnuson-Stevens Fishery Conservation and Management Act consultations.
We are consolidating the six separate EISs into the single MMPA final rule and one EIS. We are conducting the environmental analysis for the training and testing activities together. This will also help us do a better cumulative impacts look at all of our activities – conduct environmental analysis and seek coverage as I spoke about for the MMPA, ESA, and Magnuson-Stevens.

We are looking at new systems that are coming online in 2014. A document should be signed and ready to go into effect January of 2014. Also we are looking at achieving a more complete integration of the acquisition, which are the testing community and the military readiness and scientific research activities. Again, it gives us one bigger, broader look at all of our activities. Then we are utilizing the best available science.

We have got some newer sciences, some newer models from our previous document and using those for this new document. Our alternatives are the no action is to continue our baseline training and testing as we have been currently doing. Then Alternative 1 is our no action alternative plus the expansion of the study area boundaries that I showed you, again not necessarily moving all of our activities out there, just expanding the study area; and then adding the new weapons platforms and systems.

Alternative 2 consists of Alternative 1 plus an increase in the tempo and some type of training and then looking at additional locations that conduct activities. The resources that were analyzed; we are looking at fish and essential fish habitat, marine mammals, sea turtles and other reptiles, the sea birds, marine vegetation, marine invertebrates, air quality, other marine habitats, water and sediment quality, the MPAs, cultural resources, socio-economics, and then public health and safety.

An EFH assessment will be submitted to NMFS concurrently with the EIS/OEIS. The assessment will analyze potential impacts on designated EFH in the study area and on the

federally managed species. We will also be looking at Habitat Areas of Particular Concern. Again, we welcome input from the council and NMFS during this process; the NEPA and EFH regulatory process.

NMFS is our cooperating agency. They were a cooperating agency on our previous documents as well. Where we are in our public engagement, the Notice of Intent was published in the Federal Register 2010. We are now working on our Draft EIS. We will announce that availability in newspapers and on our website when it is available.

We are going to have public hearings. I will get to a slide that will show you where they are along in this area, and then we'll post it on a project website and in local libraries. The same with the final EIS; again we will announce it in the Federal Register. Our Record of Decision hopefully will be done in November of 2013; be on the lookout for that.

Here is kind of our project schedule. Our public hearings; we are starting in Houston and working our way around the coast and up the Atlantic into Portland, Maine. I have highlighted the ones in blue, the areas closest to here and your area of expertise. We are going to Jacksonville, West Palm Beach; Jacksonville, Florida, and Jacksonville, North Carolina, and then we will be back here in Charleston.
These meetings will take place around the first week of June. We don't have exact dates yet, but we will have it on our website. The final EIS will be released to the pubic mid-2013. You keep a lookout and we will have it up available for comment. We anticipate it to be a very large document, probably about three binders full.

Again, we request your participation in the environmental planning process. Here is our website, aftteis.com. That is all I have unless there are any questions from anybody. There are some posters and some other information out on the front table that I put out there if anybody would like to grab some on your way out.

MR. WILBER: Laura, I have a question. The one training area that I have had contact with that is not listed on that early slide is the Undersea Warfare Training Range off of Jacksonville. Could you kind of let us know how that relates to this particular EIS?

MS. BUSCH: Sure, let me get to that slide. That is going to be down in here off the coast in the Jacksonville Range Complex. The construction of that warfare range was done in a previous EIS document. Our document is going to cover the training on it only. We don't specifically call it out, but any activity that is going to occur on that range will be covered in this document.

DR. LANEY: Laura, is the Dare County Bombing Range covered in this EIS?

MS. BUSCH: The question was if the Navy Dare County Bombing Range is included in this EIS. That range is in North Carolina, in Dare County, and that is not included in this one. We are only looking at at sea. Previously our VA Capes or Virginia Capes Range Complex Management Plan did cover everything that occurred within that complex, which was some on-land ranges, but for this document we are only going with at-sea training and testing.

MR. PUGLIESE: Laura, thank you for the presentation. I do appreciate the Navy's willingness to kind of step forward early on a lot of these efforts. I think that the fact that they have committed and having a representative on the Habitat AP really has reinforced the willingness to kind of be a real partner at the table.

I guess my simpler question; I know you are identifying a partner with NOAA Fisheries, and I assume given the lead time on this there is going to be ample opportunity to get a lot of the details on EFH and things that maybe we want to integrate early into that EIS, so it becomes more of an integrated component versus a reaction after the EIS is drafted and then having to clarify or refine what those issues. I assume that is really open at least in terms of early coordination with the council and with NOAA Fisheries.

MS. BUSCH: Yes, and Dave McDuffie, who is in the back of the room, is kind of our EFH guy at Fleet Forces, and we will be working with Carter as well.

MR. WILBER: I will just add David McDuffie used to be our EFH guy, too. It is an unusual situation that we actually are dealing with someone who knows more about EFH than we do in the preparation of an EPA document. Then the other thing, too, is we recently completed, like in the last two years EFH assessments for the Jacksonville Range Complex.
I forgot, we did one other one, Dave, and I can't remember which one it was. We have gone through a lot of very recent history with the Navy on this stuff so it is not like we are starting at the beginning. We are starting well deep into the story and we are dealing with actual and original author of the story in David McDuffie. Our last presentation of the day is Brian again from BOEM. The title listed in the agenda is the same as the one from yesterday so he is going to have to maybe explain the nuance to the new presentation.

MR. HOOKER: There is supposed to be a new presentation?

MR. PUGLIESE: I think the fact that you have gone through some of the technical components with the Marine Cadastre is a good lead in to then I guess the more general. The AP members did get the benefit of your earlier presentation, but this is an opportunity to kind of get into the big picture with all the other members.

MR. HOOKER: Okay, thank you again. My name is Brian Hooker. I am with the Bureau of Ocean Energy Management based out of Herndon, Virginia, which is just outside of D.C. As I mentioned yesterday, this is kind of our first foray into the South Atlantic Region. I am in the Office of Renewable Energy Programs and the Environmental Branch for that group. There are about 24 of us total divided between the Environment Branch and the Project and Coordination Branch.

The Project and Coordination Branch deals with a lot of the state task forces, of which in the South Atlantic we have the North Carolina Task Force and I believe the South Carolina Task Force, if it is not begun already. In the Environment Branch we do the analysis and develop the environmental assessments and also work with the environmental studies program.

For today's talk, I am going to try to mostly talk about environmental studies and how that is set up, because I think that is primarily where this eco-region coordination piece fits in. It will just give a quick overview of how we operate. I will mention yesterday there was a question about – I think it kind of gets, if you are not already intimately familiar with the Bureau of Ocean Energy Management and how we work, we are just basically the stewards of the Outer Continental Shelf.

That is just the seabed and any resources underneath the seabed. We don't set a national energy policy or anything of that nature. That is done by the Department of Energy. Our environmental studies are exactly that. We have engineering studies that we do and regular environmental impact studies that we fund.

The Department of Energy is the agency that has subsidies for developers to develop alternative energy, sets kind of goals, national goals for alternative energy, and also does studies to remove market barriers and to basically promote whatever the goals are of the nation, as far as like whatever the energy goals are; whether it is renewable or other sources.

As of October 1, we are no longer the – we were the Bureau of Ocean Energy Management Regulation Enforcement; previously to that we were the Mineral Management Service; now we are the Bureau of Ocean Energy Management; now also the Bureau of Safety and Environmental Enforcement.

The third component to this is the Office of Natural Resource Revenue. That was an earlier pull out from MMS to take the revenue control out of the regulatory, and so it is really – I guess the former MMS is now pretty much three entities, the revenue entity, safety and environmental enforcement, and the environmental management which issues the leases.

For our offshore energy process, we have four stages; planning and analysis, leasing, site assessment and commercial development. Right now in the South Atlantic we are only in the planning and analysis stage. There is only what I would say one active task force. That is generally our approach to each state is we set up – the governor would request and then we form a task force for discussing offshore energy development offshore each individual state. Only one state has recently been doing that and that is North Carolina.

South Carolina is getting more involved and I think if a task force hasn't been officially set up there should be one set up soon especially to deal with the shared resource off of North Carolina, I think that is a driver for South Carolina becoming interested.

Real quickly, you guys have seen all these slides yesterday, so planning and analysis that is where we are now. The stakeholder outreach; right now after the last North Carolina meeting, we are in the process of developing the first planning notice, which is a request for interest. This is also a term sometimes a request for information because we ask not only interest from developers in developing the area, but we also ask for any other information from any other stakeholders about the area under consideration.

It is a general call for any type of information regarding the area that is being considered for leasing; and then even after that step, there is another call for information and nominations. Sometimes you will see a skip that first request for interest. If we know there is an interest in developing the area, we can skip that part and go straight to the call for information and nominations.

There is a situation up in Southern New England where we knew from previous planning documents that there were several entities interested in developing an area because Rhode Island had developed a special area management plan that actually had offshore energy as a shared use in that area, so it is very well established that, yes, the state and some developers had an interest in developing that area.

It would have been repetitive to ask if there was anybody that was interested in developing that area if that was clearly established. That one went straight to a call for information and nominations. The last step, before we really begin our NEPA review, is the area identification. That is where we say, okay, this is our wind energy area that we are now going to look at for development and lease issuance.

This gets into whether we issue leases competitively or noncompetitively. After we do all that and do our environmental review, then we get into the actual leasing. Once again there is more public involvement along that line. Then we get into the site assessment. This is where we are currently in the Mid-Atlantic. We released a draft environmental assessment.

Earlier today a lot of talk has been on coastal and marine spatial planning and maybe I will just take a minute to talk about that where BOEM is. We look to instill all the principles of coast marine spatial planning in our process. We have people that are dedicated to engaging with the regional or the quasi-regional planning bodies and actual regional planning bodies haven't been quite identified yet, but with ENROC and MARCO and hopefully with South Atlantic Alliance as well in the South Atlantic.

What we plan on doing for these site assessments, just to make sure that we have that full public participation, is actually releasing draft EAs, which is kind of novel. Usually you don't release a draft NEPA document unless it is a draft environmental impact statement. However, the activities are just the placement of basically buoys and site surveys.

Generally they are not reaching the level of significant impacts of their falling under the environment assessment type thing, only following under environmental assessment thresholds, but we are still releasing that for public comment and getting public comment on our results and our proposed action. Then after the site assessment plan stage, which is up to five years, once we complete our environmental analysis for site assessment, there is a lease that is issued.

The lease only authorizes the site assessment activity. They have five years to complete their site assessment activity. If they don't complete their site assessment activity within that five years or submit a site assessment plan, then we can revoke the lease. Then if we approve their site assessment plan, then they have a 25-year period to construct facilities after they send us a construction operations plan.

That construction and operations plan is where we will conduct our full EIS because that will look at actual build-out of a wind facility. As I mentioned previously, there is opportunity for public comment along with the entire process. We have the state task forces and we continue to plan on doing more of these engagements with the South Atlantic Fishery Management Council and other entities up and down the coast as stakeholders are identified to us.

A complete list of our environmental studies is on – you can still use this link. The old links are still active and you will probably just be redirected to the new site when that is finished. That is still being done. This is just to give you a flavor. I don't expect you to read all this. but we basically do studies on anything that could be impacted by our action.

As we just heard from the Navy, it is a very similar type thing. We are driven by the same statutes that they are, Magnuson, ESA, and MMPA, so a lot of our studies are kind of driven by those acts. I don't think I mentioned this yet; we have about $35 million a year that we get for studies. About $4 million of that is directed at the renewable energy program. Like I said, we do that on an annual basis.

Once again, we have them divided up into different issues that we have identified, birds being another one, I won't skip it as I did yesterday. I will say that we are looking and working with Fish and Wildlife Service in identifying migratory pathways and identifying where we really need to look for birds.

We are working with NOAA's Biogeography Branch and an interagency agreement to help model predictability where birds may occur and to where to concentrate efforts and how long you would need to study in that particular area to know if birds are going to be present. Another area of interest here is also the social and cultural side we have.

Anytime you are dealing with the Outer Continental Shelf itself, depending on where you are you could be impacting cultural resources, both Native American resources as well as shipwrecks and things of that nature. A lot of our studies will look at what cultural resources are there. And then there are also the existing uses of the Outer Continental Shelf, primarily shipping and commercial fishing and recreational fishing.

Yesterday I didn't really go through the VA scenario. I will give you a quick rundown of that. We basically develop a scenario for the routine and non-routine activities for just site assessment. It is primarily just the site characterization surveys and the site assessment activities. What we call site assessment activities is actually measuring the wind speed primarily.

That is done by LIDAR-based buoys, mostly is where people are going because they are a lot cheaper to install. There is not noise impacts associated with marine mammals, and you can obviously redeploy them at a later time; whereas, meteorological towers are a lot more expensive and the permitting time horizon is a little bit longer.

Also, we do site characterization surveys or full 100 percent coverage of the areas being proposed for development of the wind energy area, so we will be producing pretty large data sets on the sidescan sonar, our multi-beam and some sub bottom profiling as well. It is interesting to tie in with some of the – we have been approached by folks like NERACOOS and some of the other ocean observing system who are interested in this data and how we will share this data once we actually issue leases and people are out there actually collecting the data.

It probably won't be a real-time data feed, but all the data is expected to be public data except for some of the proprietary like wind speed type data, but most of the other environmental data that is collected will be publicly available. We are still I think working out how filtered it would be, how we could make it accessible to an extent that it is actually useable instead of a full raw data download; is it somehow filtered in more of a finished product that will actually end up sharing.

We definitely recognize that there are a lot other entities out there that are interested in the data. Even if MET towers are built in certain instances, I know there are probably a lot of people that would want to put some of their equipment on the MET tower. That is something that would probably have to be worked out between the entity and the private developer who would actually own that facility.

There is some opportunity there. We more than welcome folks who have an interest in that to come and talk to us and we will do what we can to make those connections happen. Back to the EA scenario, we also will look at – there is a lot of concern over a ship striking a meteorological tower and what the impacts of that will be.

We have actually a study trying to look at exactly what the impact would be in that scenario, but one of our guiding principles is not to place these things anywhere directly adjacent to a traffic lane. Once again, I think I kind of already mentioned this, our studies line up with what we actually analyze and the NEPA documents.

This is a very similar slide to the one we just saw from the Navy. These are all the resources that would be looked at. Alternatives that we may look at are fishing conflict alternatives, time and seasonal alternatives. Recently in the Mid-Atlantic one of the alternatives was not doing construction during a time when the right whales happen to be passing through. That is just an example.

We obviously also want to eliminate putting in anything that would become a safety hazard, so ship and vessel conflict alternatives are there. The cumulative impacts, this is something that we often get questions on. We are not looking at a full life cycle of what eventually may occur. We are only looking at what – the proposed action is only the site assessment and site characterization activities.

It will look at other permitted – if there is another permitted facility that is there, we will definitely integrate that into the cumulative impact. For example, up in both New Jersey and Rhode Island they are looking at some state waters wind facilities. Once those are permitted and once we know those are being built, those will be incorporated in a cumulative impact. But as

far as like until we actually approve construction of a facility, that won't be incorporated into the cumulative effects until it is actually an approved project.

Yesterday we had a lot of questions about North Carolina areas. This is what, Pace, two weeks ago I think there was a task force meeting; when was that? A month ago, sorry, time flies. These are kind of the areas that were first being proposed by the North Carolina Task Force. As you see down here, obviously this is a joint area that South Carolina would be keenly interested in participating in the decision-making on that.

But once again this is just an example of how the process starts. It is the Tier 1 screening. Basically everybody kind of threw out, okay, where can we possibly put things and then start eliminating areas as areas became more and more clear as being completely off limits. I think this is one of the things that were discussed at the task force meeting.

These areas are going to be honed even further in what we are going to do with the request for interest. By the time we develop a request for interest, it will probably only be one or two of these areas or we could even do two tracks and do two requests for interest under two different scenarios. I think all those are being discussed.

MR. WILBER: I may have picked it up wrong at the task force meeting so correct me, but there is a difference between a CFI and an RFI. I guess a CFI is a little bit more serious than an RFI. My understanding from the task force meeting – Anne was there too – was that the two that are either in South Carolina waters or along the border, depending upon what state you are from, that those two are pretty darned certain and were headed towards a CFI kind of thing.

The more general request for information applied to the two largest blocks, which are the two northern areas there. That third area south of Cape Lookout was the one that wasn't sure whether it was going to be a CFI or an RFI. That was my understanding of how we left the meeting a month ago. Now I know Will Waskes has sent out to at least most of us that were on the task force, if not the whole task force, the draft language of the CFI, but I haven't actually looked at it to see what it says.

MR. HOOKER: I think you are right. As I mentioned previously, if it is fairly certain that you know there is going to be an interest in developing an area, we can skip that first planning notice that is basically meant to be an opening salvo that is basically saying is anyone actually interested.

If we have some documented interest in an area and we know that there is interest so we can go straight for what we call the call for information and nominations where an entity would actually nominate the blocks that they are interested in developing. That is where we determine if there is a competitive interest or a noncompetitive interest in an area.

Some of the other areas that you mentioned in the north, I think there was a little bit more uncertainty if anybody would actually be interested in developing there because of obviously – well, maybe not obviously, but get into the northern Outer Banks there. There may be some coastal tours, some issues that are there or some other issues. I think the preliminary decision

was that those areas would go out under a request for interest. As you said, those are still those ideas and the draft language is still being circulated to the North Carolina Task Force members.

Just make sure everybody is aware, the task forces are made up of the federal agencies, DOD, Coast Guard, NOAA, and state representatives and, of course, BOEM, and they are public. This slide actually is on our website as well. If you go under renewable energy and then go under state activities, the slide presentations from all the presentations from the task force meetings are posted on the website at the conclusion of the task force meetings.

AP MEMBER: For these wind farms, do these shapes up there represent the actual footprint of the wind farm or would it be smaller and somewhere within that?

MR. HOOKER: Good question. Most likely there would be a subset of that when they actually – because remember we start with a big thing and then work our way down. Obviously, with some of the technologies that are coming out, actual wind turbine and the wind turbine generators are getting spaced further and further apart because the generators are getting larger and larger.

Even though that is the whole area on the map, we are looking at close to a mile separation between each turbine and how they line in rows both north and south and east and west. The number of turbines you have in there won't be as dense as maybe the map portrays it being, but what is actually developed would likely be a subset of that. Especially once we receive the actual results of the site characterization where they identify some hard bottom or they identify an area that for whatever reason is excluded, the shapes will change as a result of that.

MR. KELLISON: You mentioned that I think the advisory panel was a public group. Is that listed on your website, also?

MR. HOOKER: Yes, I believe the participant list is on the website. The meetings themselves are public but the task force membership is limited to federal, state and local government. The meetings themselves are public and the people who participated in them I believe are also posted on the website.

DR. LANEY: Brian; did I understand you to say that the wind speed data are proprietary? Would you elaborate on that a little bit?

MR. HOOKER: Sure, I think because of the expense in acquiring the wind speed data, and that is really what determines financing and whether or not a project will be built, if there is enough wind there for a project to be viable, that data I believe will be proprietary and not publicly shared.

DR. LANEY: So those would be data gathered at the expense of the applicant or data gathered by BOEM.

MR. HOOKER: To be clear, all that what I have described so far, with the exception of the environmental studies program, but all that site assessment – basically when I say site

assessment plan, that is all developer driven. Anything that we collect is public, but we don't get into the wind speed data.

I think the Department of Energy, NREL has done some preliminary wind speed information; they have a wind speed map on their site. But for our purposes we are not as concerned with the wind speed data because we assume they won't come to us with an application if there isn't any wind out there to develop an area. But all the other environmental monitoring data that the developer collects and then it feeds into our environmental assessment definitely becomes publicly available data.

DR. LANEY: Okay, just for the record, Pace knows where I am going with this and so does Roger because they have heard it before, but wind would seem to me to be a public trust resource just like commercial fishery resources. I still have an issue with confidentiality of the data on the resource itself, whether it be fish or wind, wind speed in this case.

I understand the need for confidentiality relative to the financial aspects of those operations and I don't have any objection to that, but I can foresee issues with not being able to have publicly available data on public trust resources just as a general principle. It is a philosophical thing with me. I just wanted to get that on the record.

MR. HOOKER: So noted.

MS. DEATON: There is already wind information out there, because like these five areas were picked because there is a layer of wind speeds. I guess that comes off of the buoys, right; the NOAA buoys? We do have some information and just not that more specific.

MR. HOOKER: I think some of that, as you mentioned, there is information if you go to the National Renewable Energy Labs Website, NREL's site, they do have wind energy potential maps that are based on a lot of the buoys that are out there, on some of the shore-based radar that is able to do some of that mapping. But, yes, still the financers want oftentimes very specific at hub height what the wind speed is going to be. A lot of the wind speed data is closer to the surface than hub height.

AP MEMBER: What do you see or can you kind of explain the next steps that you envision for some of these other states that you haven't really focused on here like Georgia and Florida? Were these task forces developed and kind of initiated by the federal and state agencies and local governments in those states, in North Carolina and now South Carolina coming online, or is that something that your agency initiated?

MR. HOOKER: I think it is a fairly collaborative process. But the other states – the state applied for – let's say, Georgia, Southern Company does have some interest, very preliminarily. We have received an application from them which we are currently reviewing for what we call an interim policy lease to put in a meteorological tower offshore, and that is basically just to begin that process there to evaluate what the potential is to eventually maybe develop an area offshore Georgia. There is no commercial request from Georgia as yet.

I think if that once we move down the road there, there probably will be a need to set up a Georgia Task Force. The mechanism for establishing the task force is initiated by the governor. It is a letter from the governor to BOEM saying, yes, I would like to set up a task force, and that is how it is set up.

Florida, the wind resource isn't as great off of Florida so the only interest we currently have off of Florida is from Florida Atlantic University in developing kind of a test bed or a test facility to test a marine hydrokinetic device in the Florida current. That is currently under review as well. I guess I will say part of the reason for this state-by-state approach, too, you need the state to be involved clearly from a coastal management and coastal consistency point of view, but also someone has got to buy the power.

If the state isn't going to buy the power or doesn't have any interest in having targets for renewable energy power sources, then there is probably not going to be a huge interest from a developer to develop them because they won't have anyone to sell to unless they tie into something like the Google Backbone.

I call it the Google -- Atlantic Wind Connect is the actual entity but everyone knows Google and Google helped finance it so sometimes it is called the Google Backbone. Anyway, that is a north/south direct current cable system that will allow some wind facilities to just tie into that and they will then take a cut I guess and transport that electricity to shore.

MR. WILBER: I want to add BOEM is the big player in town and ultimately you are going to have to go through BOEM for something out in federal waters, but they are not the only player in town. There are these smaller little efforts going on, and some of them are more relevant to Georgia and Florida.

One in particular to note is the Southern Alliance for Clean Energy has done a fairly extensive SMSP style assessment of coastal waters off the Carolinas and Georgia to identify potential wind farm locations, and all of their data are available from their website that they used to look at the various factors under consideration.

If we are going to get really down into the weeds, there are actually some hydrokinetic projects that are already permitted in Florida. Those folks came in through the Corps of Engineers regular permitting process before there was really much of a clue at FERC or at some of the other federal agencies on how to deal with folks.

But there is this one permitted for underneath the Bahia Honda Bridge down in the Florida Keys. There is another one that is going through the permitting process off of St. Lucie, Florida, I believe. These are all little very small, very minor kind of efforts, but if you want like the complete story, you have to kind of dig into those kinds of weeds. You get 90 or maybe even 98 percent of the story dealing with BOEM, but there are these other little smaller activities going on.

MR. HOOKER: Thanks, Pace, I am glad you brought up FERC. I do forget to mention sometimes that with off of the Marine Hydrokinetic Projects we kind of reached an agreement

with FERC basically. Basically we would do the leasing and then FERC would handle it after that point forward as far as like the management and some of the monitoring goes.

That is only in the case with the hydrokinetic stuff because of FERC's previous involvement with hydrokinetic on land. There is that joint relationship for hydrokinetic. But, yes, there are several state-driven initiatives that are doing a lot of the preliminary work kind of for us. You mentioned that Southern Alliance for Clean Energy.

Some of the states in the north, I mentioned the Rhode Island; especially in our management plan there are a lot of other groups that kind of help feed into the process before it ever even reaches us at this point. I guess for the purposes of today's discussion there is definitely a lot of opportunity for collaboration as some of these projects move forward.

You can come get my contact information; if you just go to BOEM.gov renewable energy, you can contact us from there, too. If you do have any followup or see an opportunity for collaboration, we are always looking to leverage funds and work with other folks as much as we are able, and especially if there is an opportunity that can benefit other resource users. That is kind of a win-win for everybody. Anyway, any more questions?

MR. PUGLIESE: Kind of a bigger picture question; you were talking about the EEAs really being focused on the movement forward and just establishment of the areas. Do you know if anybody is going to try to look at any of the build-out, because it is very different to look at the initial footprints versus if you get a governor's mandate that you will have X kilowatts in this coastal zone and what those footprints mean, because that just puts everything in such a different context in terms of generation, in terms of how big the footprint is.

It gets to those issues of is it just a small piece of this area versus having had something distributed over 50 percent of what that proposed area is. Then it puts it totally in a different context of fishery access, habitat impacts and then even unknown impacts because we don't have anything that large in the water that may affect flow or anything. Is anybody actually doing the bigger, longer term, at least initial ideas of what that would translate, given present technologies and kind of a case scenario of what would be a build-out for various things?

MR. HOOKER: That is a good question and I think that is one of the things that we were struggling with under the – you know, what kind of gave us this two-step approach, this site assessment piece and the construction and operations piece, was because there were so many unknowns that are out there and it is really hard.

I think the Department of Energy has a certain gigawatt goal. I think it was Ocean Conservancy or the Nature Conservancy or someone on one of the comment letters basically showed this, if we were to reach that gigawatt goal and at current technology with this spacing, it would take up this much of the ocean.

We could do a study like that but it is so unknown because there are so many other variables that play as to what will actually be developed in the end. We don't know who is going to actually

end up with financing; we don't know what other areas are going to be identified through the environmental process.

It is almost like it would be a bit of exercise in futility to try to say this is the maximum potential footprint of wind energy on the Atlantic Coast without actually having gone out and gathered all the data that is necessary to determine where these things are actually going to be place. That is one of the reasons why it was separated into, okay, we will issue a lease to give them the ability to go collect the data, so they have the assurance that they can go collect the data and know that they have the opportunity then to submit a construction and operations plan for that area that they spent all that money collecting data on and then we will get to an actual construction and operations plan.

Because it is such a new technology, I think that is where we will be for a little while. I mean even year to year the size of the turbines changes and the spacing changes. Maine is looking at floating turbines, and that could be a game changer if they are successful. People may even just decide to not do their close-in stuff and shift their effort further offshore to avoid some of the visual impacts that may occur.

MR. WILBER: I saw a presentation by the Clemson University folks a few months ago on the scale of wind farms and how they are changing, and they were focusing on actual individual wind towers. The wind towers now that are being designed and built, if you can imagine a 747 being spun around on the end of a tower, well the wind towers themselves are bigger than the 747 spinning around. This is how big these things really are. It is just an amazing thing to look at.

MR. HOOKER: The good news is with that that there will be larger spacing to allow other uses in them. The actual overall footprint may increase as a result, but the number of obstructions, depending on your point of view, would be fewer. I was going to maybe just ask if there were any other questions on this research collaboration or anything along those lines for folks other than just the general process side.

MR. PUGLIESE: On something that kind of connects to exactly what we were trying to do for what your request on priority research, but also to try to tease towards some of the discussion that has been on where you have other areas that are moving forward at different levels, I assume it would be beneficial to have something that may provide BOEM, since you are engaged in the council, you are engaging a regional view of some of these things, is maybe a review of what we know or what we can put together on fishery operations, on existing regulatory areas, spatial footprints and on what we have interpreted as essential fish habitat distributions from a regional perspective so that could be integrated into these discussions as some of these other task forces come online or efforts.

I just think given a lot of the tools capabilities and partners that we have at the table here, I think that is something that may be very useful, because I was able to look at the North Carolina material and then tweak some of that relative to information we had and kind of really integrate a little closer our designations or efforts. It is kind of asking a question that I would hope would be a positive thing to do.

MR. HOOKER: I think this is one of the things that we really would like to see is more – you know, there is a lot of good data that is out there, but where the input really needs to be I think is now that we know this is essential fish habitat or now that we know this is a habitat area of particular concern that has been designated, what does that really mean?

Does that mean we can't put a wind facility there? Does that mean we should avoid it entirely? It is getting down and having those discussions where, okay, now that we have identified that it is important, what does that actually translate into as far as the management of that area; how does that go?

I think that is really the next step of where everybody is doing a good job of let's compile all the data, but where we need to go from there is, okay, now we have all the data and now we just stack it all up on top of each other and whatever comes out to be the reddest area avoid that? That is a tough challenge. That is the sand in the ointment, so to speak, is trying to really identify where these things are best suited.

MR. PUGLIESE: Just to kind of connect to that, the reason I asked, we had a lot of discussion on mapping and yesterday's efforts talked about how much more we need to know and everything, and I think one of the things coming from this regional perspective is that I think hopefully one of the things that can be really clarified is that some of these habitat distributions that may be identified now may be only part of a continuous distribution of habitat that is unknown at this time, so that can be factored at least in the discussions and considerations as it is being moving forward.

Plus refining some of the fishery operations and working with our partners in the states and other contributors, both commercial and recreational fishermen, through really some of the more clear operational activities that are going on seasonally, et cetera, in our region to really feed into the fact that some of those habitats, if you are looking at those hard structures, hard bottom, live bottom coral systems off of these areas are supporting regionally managed fisheries.

You know, the snapper grouper fishery populations extend through the entire region and potentially get population effects if it is magnified over a large area and then applied to the region. Hopefully, that would be another benefit of capturing what right now may not be very clear on what contiguous habitats would exist

I think a lot of the things we are discussing in these detailed mapping discussions and recommendations would really begin to feed into research needs for those, but also the clarity of what you may have at risk if you are not getting that information into this process.

MR. HOOKER: Great; we look forward to receiving all that.

MR. WATTERSON: When you are talking about these wind turbines you are putting offshore, I have seen general pictures of what they look like above the surface. Can you give me some idea what they look like below the surface; are they based on pylons like oil rigs?

MR. HOOKER: Yes, there are a couple different designs depending upon the seafloor geology. There is what we call a jacketed structure. Think of a steel jacket structure for like a telephone tower or something along those lines. That is one structure that we know we are potentially looking at because in areas where you can't drive a pyle, so you have a much denser substrate, rock boulder that type of thing.

There is also a tripod arrangement where it is three pyles and then a platform. There is always a foundation and then a transition piece and then the actual monopyle that holds the generator. There are a few different designs. I am trying to think if we have them on our website. I know in our environmental assessment for the Mid-Atlantic we have a couple of different designs on how those look.

But, generally a tripod of monopyles or a jacketed structure with pins holding it down, there is the floating aspect, and then there is just the single monopyle design. Then there are several different designs under the floating on how that will work. They are being tested; they haven't really been settled upon yet in that area.

MR. WILBER: Okay, in the interest of moving on, the next item on the agenda was – and, of course, we are ahead of ourselves on the agenda – Roger wanted to see if there was any discussion among the panel or any recommendations the panel would like to make about potential collaborations or synergies between the various regional partnerships we heard about today or particular partnerships that you think the council itself should actively put more effort into reaching out to and trying to collaborate with. Roger, do you have any other kind of setup material for that?

MR. PUGLIESE: Yes, I guess one of the things I tried to do is there was that brief document you all received or picked up hard copies of, was at least trying to tease towards what either some of the existing opportunities for collaboration with the council or anticipated ones were so it started at least highlighting some of either ongoing efforts or looking to the future.

In the discussions and deliberations over what we were involved in yesterday in terms of getting in the AP's deliberations on critical information needs, research and recommendations and moving forward and supporting ecosystem and longer-term fisheries management; feeding then into today's deliberations on each of the different partners that have been identified at this table; what I wanted to do is at least open the discussion again.

We have already talked about a lot of opportunities to collaborate and did even have with our presentation of some of the tool development with the Digital Dashboard Services identifying connections and capabilities that can enhance the council's operations, enhance partnerships with our members.

The habitat for the other members, the invited participants, I would like to – I highlighted in the beginning, but the Habitat Advisory Panel of the council has been the group that really does move the council forward in habitat conservation and has set the foundation for such as the building of the Fishery Ecosystem Plan and moving forward into ecosystem-based management, and the broader view of conservation with our partners in the region.

The members here really are helping the council address their mandates but also facilitating the initial collaboration between those partners; and now with this discussion here, the opportunity to expand that to meet needs of individuals. The bottom line is we are trying to look beyond or reiterate some of the opportunities for collaboration, either programs, information gathering, or just ways to better transfer data and begin to put those on the table.

Then follow up with those with our continued deliberation with each of the different groups that have been represented; so two ways to do it, either open it up for individual AP members, or one thing I thought about is at least touching back with our presenters to see in this discussion now are there specific things that you immediately see as opportunities; kind of maybe building on some of the points that were highlighted earlier, maybe in the document or discussed on things that you see as enhancing some of the collaborations or envisioning.

Then I guess we could go to the AP members. That just might be an easy way to kind of transition into a broader discussion. I think everybody is probably thinking in their scope right now, but then given all these different discussions, maybe other things have come to light or are more obvious. If that seems reasonable, Pace, if we can maybe start that one; I think most of our presenters at the table.

MR. WILBER: Do we want to go around to the presenters from today and ask them basically what they got out of the day? Does Pat have an alternative?

MR. GEER: Roger, this is mainly for you. I know you have reached out to a lot of these groups already and you have worked very closely with the Alliance. What was the other one you worked really close with -- well, a couple of these you worked very closely with. Are there any of these groups that we have talked to today that you want the AP to reach out for you instead of you having to do it all?

MR. PUGLIESE: Well, that is a good question to ask before we get into that kind of general discussion. We do have new players involved in this process with the developing South Atlantic Landscape Conservation Cooperative. I think there are some great opportunities to tap in on efforts that are going through that organization.

I think they could potentially bring amazing tool capability and broader scale view that nobody else has in our entire region, because it is going to be ultimately, as Ken indicated in the vision, from inland all the way into the ocean; so efforts of collecting other information or data that would go into those systems, but also partnering to expand the view and scope and also just the fact of is this beneficial to included marine as a component of this system? I think that is an important side.

Working with that, I think the one reason I say that is it provides a real opportunity to our directives as well as the state directive because that organization has direct links to the climate science centers; the fully funded DOI Climate Science Centers because NOAA doesn't have money or has not allowed climate as to being the high priority right now.

There is that opportunity to provide some of the capability that may not be through other avenues. That is one effort and just participating directly in the overall organization, access the information or providing guidance and efforts, especially this strategic plan begins to move forward.

The other one is direct involvement, more involvement directly in the South Atlantic Alliance, the technical teams on healthy ecosystems as well as working waterfronts to get the fisheries components integrated into there.

MR. WILBER: Just indulge me for a moment in the afternoon. Pat brought up a very good point, and I would just like to do a quick little poll, okay? If you are in the horseshoe here and you have some kind of personal connection to the South Atlantic Alliance and one of its technical teams, just raise your hand. Mary, your hand should be up, too, you are in the horseshoe.

If you are involved in SECOORA or any of these ocean observing system stuff, raise your hand. If you are involved in wind energy either in a formal state task force or an unofficial state task force or something like that, raise your hand. Now, if you are involved in the South Atlantic LCC, raise your hand. That is what I thought was going to happen.

Really, of the partner groups that we heard about today, the one that we are not already naturally keeping close tabs on with is the South Atlantic Alliance, because all these other groups we all have – several of us are at least wearing multiple hats that include those other groups. Is that an important gap and how can we kind of minimize the damage or the problems that gap creates? That might be the question to turn over to Ken.

MR. McDERMOND: I hope we did a reasonable job of trying to explain what the vision is here. I am not sure we hit the point on all the questions, but if you see value and hope that you see value in what this LCCs are supposed to be doing and if you can see value in that across the coast and into the marine environment, and I can give you a couple of examples where I can see some value, but we need probably more than just Roger sitting at the table to help inform us about availability of information, to be posing the types of questions that could be benefited by the integration of all this information, whether it is setting priorities, whether it is helping integrate future change such as climate, urbanization, energy into your conservation priorities.

The more demands that are put into the bucket here, I think that will help also make the case to the partnership that this terrestrial, estuary marine connection is an important thing to consider. I think it is a gap that we are starting to make those inroads, but we are sort of in the infancy. I think that more help in that regard would be good.

It can be through some of these existing partnerships I would say though, too. It is not starting a bunch of new committees or – that is the way I think we are doing this business is by taking advantage of existing capacity, and it is sitting around this table right here, I think.

MR. PUGLIESE: To that directly, Ken, I think when you talked about the existing partnership activity, that is one thing I had been trying to identify, also. The Southeast Aquatic Resource

Partnership is formally under and connected directly into that system. Enhancement of direct activities under that partnership under the National Habitat Plan is also pretty critical because it does feed in there.

It has a very significant endorsement of estuarine marine as was presented by Scott earlier of the marine environment and the estuarine environment and commitment to those resources. I think getting all those types of capabilities and expanded existing links in there; I think that is the one thing I have been trying to highlight at the steering committee to try to calm down some of the concern that we are going way too far is that there is a lot to build from. That I think is a key point that you are making.

MR. McDERMOND: One other thing that I wanted to say; and I am not sure if this fits quite in here but it kind of gets to maybe an example where there is value added, especially on the last conversation, the wind energy, so there is a future change. There is something that all the organizations out here have to react to or proact to, I guess, in some way.

It is not much different than a highway, I guess. It is another infrastructure; it is another change coming down the road. One of the things we have heard early on in discussions like from Federal Highways and State D.O.T's is when they have to go through their preplanning or their processes that we were talking about here, they end up having to go to all these different groups; so the fish groups, the bird groups, the whatever others.

And so one thing that is really helpful to them is some sort of a way to bring all that information together in one view, if you will. Again, I know that is an audacious challenge, but I am sort of curious if you all see NMFS has to deal with it, Fish and Wildlife Service has to deal with it, each one of the states have to deal with these sorts of things; and oftentimes you are only looking at your individual data set versus how are these resources valued across the whole landscape and how are they important and how are we going to sustain them? It is usually not done by one place, and so being able to provide reaction or even proactive advise to these future changes that can actually be influenced would seem to be to be a valuable thing, so I will just lay that out there.

MR. DUREN: Ken and Rua, when I was listening to you speak, I kept getting pulled between two different thoughts, and one was that a lot of what you are talking about I almost felt like I was listening to a futurist talking. A lot of the things you are doing is from a very high-level long-term point of view, and it is good.

To the extent that you have provided insights to these organizations and others that are represented around the table, I think that is useful. But if there were some way to bridge from that high levels look to, okay, somebody has got to make a decision on changing the fishery management plan.

That is going to mean we have got to kill fewer or more fish or whatever and we've got to do that next year or somebody has got to make a decision on approving this project that is going to be moving dirt around next year. If there is somewhere to get from the high level to bridge to

how do we make a decision on something that has to be done now, that is what I have kept struggling and trying to understand when I was listening to your talk.

MR. McDERMOND: Well, you joined the crowd. I think that is actually one of our communications challenges that we are facing. What Rua talked about that really will – and I think it was Carolyn asked the question, Sue asked the same question – she didn't ask it in the short term but even just in the broader scope, how does this help me make a decision or how does it help me? You know, there are a thousand different questions out there.

This plan that Rua is talking about is to try to put an example out there of how this can work in a short time. It won't be perfect, but it will identify places on the map that says we need to take conservation action in this particular place if we want to sustain these resources at the levels we have talked about, that the partnership has come together to agree on.

It is not going to be everything to every person or every organization. We haven't figured out exactly how to scale these things down to a specific question yet, but you can come up with an example. This may not be like you are talking about, but let's say organizations are out there and so they see a spot on the map that says if we want to sustain – I am going to have to use a terrestrial example because I am probably not just as familiar with the aquatic or marine side, but if we want to sustain this population or this habitat type, it's threatened across the landscape, and if we don't take action and the place to take action given this future change, given our desires, here is where you need to go and have some sense of in the time when you need to take that action, like is it going to be taken over by urbanization tomorrow or in 20 years?
It should help people out there. And then also you can look at that and say that is affecting cultural resources, ecosystem services, wildlife. You can layer the interests, if you will. You can ask the question and then you can say as an organization I buy land or I regulate or influence policy that is going to affect that place in the ground, whether it is the water quality or what have you.

It should be able to answer questions about the kinds of things you are talking about. I can't map directly to your fish question, but it should be able to answer those kinds of questions, and it is how perfect is that answer going to be? Are you willing to act on it based on the credibility of the science we have put together?

Nobody has ever done it at that scale before. It is going to be constantly improving is our hope. Let me give you another real example, we connected with the Marine Corps Installations East. One of their goals is to conserve dark space for low-level flight operations in flight areas around the southeast.

That is not necessarily an interest that a wildlife person would have, but the reality is they overlap. They have got a map of where these areas are throughout the southeast. They have asked us, well, we need to know what is going to affect that area; who else can come to the table to influence the conservation?

Well, guess what, there are people that care about wildlife that basically this means no development, right, or limited development, so where is the priority? They have a huge area that

they need to conserve. They only have a certain amount of money. Where should they take action first?

We have these urbanization models that we can bring to the table, climate change models, and then we can identify within that corridor, well, there are some really important areas for species that are valuable and they are valuable for a variety of reasons. We can help bring those other interests to the table and say if you all were together you can conserve more than the one, and here are the priorities. There is an example of a specific decision, and we are doing that right now. We are working with that right now. Does that make any sense?

DR. MORDECAI: I am going to add one more thing onto that, and this actually even came up today when Tina had the tool up there and took the best shot that sort of, okay, here is our geo-portal for that.

Then Pace goes up and says, well, here is the question I want to ask of this. Okay, now I see where we were going. Now here is a real question I am faced with right now that I need to deal with. I think it is going to be part of some of those things we do our best to try to identify ahead of time on some decisions that people are making, because in reality, of course, everyone has to make decisions based on what they have right now.

That is why that idea of not waiting three to five years to get it perfect. You never get it perfect. But I think part of it is really that process of putting something out there for people to start saying this is it, this is the question that I really need to ask and then have those kinds of things really drive the development of some of these questions where people are ready to take action.

MR. WILBER: Maybe I am beating a dead horse in the ground, but I just want to bring it back to Pat's question, and are we asking Roger to do too much to be the interface between this panel and these various regional activities? We know that when you look across the South Atlantic Alliance and the Wind Energy and the Navy and stuff like that, Roger is not the only person who is being asked to make that bridge. I mean there are several of us involved in those activities, so it is as much a burden on us as it is on Roger to do that.

But when you get to the South Atlantic LCC, we are relying upon Roger or through a surrogate like Scott to do that. Now is that sufficient or do we need something more to ensure that the LLC is receiving the kind of input it wants as it starts to think about how it is going to grow into the marine environment?

Do you need something more than what you have got already in place to find out what the habitat panel here – what kind of input we could be providing? Does that mean another kind of meeting? Does that mean it is some kind of subcommittee? Does it just mean putting another person on your steering committee? I mean who knows what that could mean, or do you guys feel you are getting the amount of input you want?

MR. McDERMOND: I know that question was directed at the panel here, the advisory panel, but I hope the question is we don't need a lot of more committees and meetings. That is my

dream, anyway. Again, it does go back to this so SARP is there at the table, so we are making connections with the South Atlantic Alliance.

All of you all are engaged in all those things, too. I think the question is where are the gaps? Then the next thing is that we are just now through our strategic planning process starting to identify what are the questions that are most important right now. We are not going to answer all thousand questions right now.

What are the most short-term and near-term questions that we need to answer that are relevant to resource managers? I think that will then begin to help us see where we might need some focus on a particular question, whether it is wind energy, whether it is port development, whether it is a variety of different things. Somebody brought up – we had folks visiting us about sturgeon and restoring sturgeon populations.

As those issues arise, then we might need to focus down as we bring our bigger scale planning effort down to actually help to answer those specific questions. Then we might need to say, okay, we need to tap some people to help deal with that specific question, but here is another group we haven't – you know, here is our first time opportunity.

I think that it is not about setting up necessarily new groups but the points will be – and right now I don't know how many people – for example, we had a survey out there to do our strategic planning – how many people helped fill that out and say here is what is really important; here are the kinds of issues that are out there that we need answers to; the type of enterprise that the LLC is setting up would be in a great position to help answer those questions. It is the questions that we need, I think the issues.

MR. PUGLIESE: And I think it is a timing issue because I definitely wanted to have this interaction with the LCC, with this large group, with the other partners in advance of getting really into kind of some of the weeds. I know a number of the people that I would have liked to have involved directly in the survey without a primer on what the LCC was; I think the information going into that would have really skewed whatever would have been out of that.

It would not have been useful. This was the first opportunity for a lot of the advisory panel members, council and other partners to get kind of a clarification of where the LCC is and where potentially it could go; give you a foundation to get some real response. From my steering hat member, I would have liked to then looked at really getting the next generation of some input for the strategic planning now that there is more foundation and really get to exactly what Pace is saying is how then does that translate into that.

Then it also can feed back into participation, collaboration, enhancing connections with SECOORA, with the Alliance, with SARP and with the council and other partners in the region to make it more functional. That is part of the whole reason of this effort here, this day's effort. That is kind of where I thought the most useful move toward integration of the marine focus.

I'll take liberty just to – from the beginning, the example that I had seen with the ability of this to look at that broader scope and the connection to the climate science centers, I could see the real

potential use of having a tool that ultimately would provide us an understanding of change and modification of the essential fish habitat down to watershed levels and how that begins to impact populations, managed populations like gag in the South Atlantic Region.

Just the ability to begin to make the connections, number one, and then to have some very focused things that would provide the context, and that would have definitely connections with SARP and the Coastal Assessment Activities, with the Alliance as the individual states are refining information on habitats, on species, on fishing operations. There are some things that now we are at that point to step forward beyond where we have in the past.

MR. MIKELL: I may be wrong but I think this organization of the fishing management council is about 31, 2, 3, years old; the early '80s or the late '70s. Nobody seems to know, '76, okay. I have been involved in this subcommittee or this committee for about seven or eight years. You scientists can say what you want to say, but every time we come to the meeting, everything gets put a little bit further off. It may happen; it will happen sometime.

I want you all to put something down and say the ocean is healthy or the ocean isn't healthy. I keep coming back to this, but I keep coming back to it because of the things I said this morning. In South Carolina and in North Carolina, I am sure, and in Georgia and Florida, we can't eat the king mackerel that we catch because of the mercury.

The governor of South Carolina's kids can't swim in Myrtle Beach because of the runoff. You all keep closing down fisheries on a daily basis, or the council keeps closing down fisheries every time they meet because I assume the fisheries are in horrible shape. Why can't somebody just say that the ocean is in a bad way and we have got to fix it?

I don't know how to go about doing it, but I know one thing; we have got to do something and we have got to quit talking about it. We have just got to take some actions. The only way we are going to get actions is quit saying may or putting it off, or the next generation will solve it, or the next whatever. Let's put something down and have a positive report for a change instead of keep putting it off. It can't be that hard.

MR. PUGLIESE: Jenks, one of the first things that discussion on State of the Ocean, with even just putting that back on the table, I think that is going to be something that is going to be directed. As a representative on the board, that is going to be directed and hopefully we can do that on an annual basis to begin to get baselines; where we are, where we can go, and then how to influence it.

Other activities such as efforts on the water flow regime; that is moving way far forward to set and create inflow stream recommendations that are going to be for the long term because we are going to lose essentially all our estuarine capabilities if we do not move forward. I think those are some fairly bold steps that are being taken to try to get those down.

I think there are some things that are going to happen in response to this meeting that are going to have some significant steps forward. All the tool capabilities and things that we are trying to

do on that level to integrate these to understand that when you are looking at a problem in one small location that may not just be for that location as a huge information transfer right now.

I just think that we are trying to move forward with a number of these and this is the group that can move forward. I do appreciate you saying make it happen, and I think at least most of the people that have been involved in the processes we were talking about here are trying to leverage everything they can to better understand it and also make the changes. I am committed, so if you feel I fall short, I will go further, but I think there is a lot of commitment to make that happen. How we make it happen; we just have to work together.

MR. MIKELL: But the baseline is a moving target so we are never going to catch up with that.

MR. PUGLIESE: That is actually a very scary thing with regard to climate change issues on this.

MR. MIKELL: Yes, I understand that but why don't we stop the clock for 24 hours and come to some conclusion at that point in time and then move on from there instead of keep pushing everything off to the next go round. That is what I am trying to get done.

MR. GEER: We didn't get there overnight. I mean the problems we have didn't happen overnight and it is not going to be solved overnight. We live in a very what have you done for me lately society? It is going to take years to correct some of the problems that have occurred. I live in Brunswick that has five super fund sites. They have been working on those for 25 years and will probably be working on it for the next century because of the issues that are involved with it.

It is a slow process as we learn more, as we know more. The issues become more complex. I mean everything that you just said I could give you a reason why those things are occurring. I mean the beaches, for instance, they have a much more defined method of recording and measuring the health of a beach, which they didn't have ten years ago. That is why more beaches are closed now than ever before.

MR. MIKELL: I don't want to get in a debate, but most of you people are scientists. I am not a scientist. I represent probably 90 percent of the people in the country. We want some answers and we want to know something. You all have got some answers but you won't tell us.

MR. PRATT: Well, I can see both sides. I share Jenks concerns and I have been in this game about as long as anybody in here. I have been a fisherman and an environmentalist for almost 50 years. I have seen programs develop and get lost, Jenks, and it is kind of like an old friend of mine, she is dead now, said, every time I come to one of these meetings you all say may, could or possibly. You don't ever say it is going to be.

I understand your point that you can't say that because it is a moving target. It is a changing world and it is a very complex, interrelated system that goes all the way from Scott through Ken and Rua down to Anne back to the council. What do you do? But, you know, sitting here today,

this is the most encouraging meeting I have been to in a few years because I see what Scott has got and what Jennifer says, what she is doing, and Ken and Rua and Anne.

If we can find the mechanism to bring all that information to where Roger can punch a key and says I want to know and it will tell him; what that ocean-going fish relies on from Scott's point of view. What makes up the headwaters of that stream that puts the chemicals in it that makes it so it feeds the fish that that ocean-going fish eats, and what he depends on?

That is a very complex issue, and I don't have all the answers, because like Jenks I am not a scientist, but I have been watching for 50 years and I know what it takes to make that stream work so it supports all the fish. But as Jenks said and someone else said, if you want a decision you have got to stop waiting until we have conclusive proof. You have got to do it.

There are a lot of fisheries been shut down because, oh, my God, we killed one, and the fish are out there knee deep, and that has got to stop. We need somebody. I don't know who it is going to be, whether it is Ken or Scott or me or Jenks. Maybe me and Jenks will go buy us a 12-pack and get about half drunk, we still don't tell you.

MR. MIKELL: I think we need a baseball bat.

MR. PRATT: No, but at some point in time, Pace, somebody is going to have to step up to the plate and swing. He may miss the ball, but he is going to have to swing, because you never, like the old coach said, "Son, if you don't swing you ain't going to never hit that ball." Somebody has got to do it. Now I don't know; I will be willing to help anybody I could with what little bit of expertise I have got from personal experience.

Anne and I get in an argument all the time because she likes vegetation and I don't but we get along. I don't know how you do it Pace or Roger; I don't know how you make it all interface. Maybe Tina does as she was talking about getting all the programs, this Dashboard. If you can make that Dashboard all encompassing, then you can do it but I don't do computers so I don't know how you do that.

AP MEMBER: I mean, there is political will that is involved that we don't have control over. Science is public enemy number one sometimes, and we do have 98 percent of scientists believe in climate change, but less than 50 percent of Americans do, so climate change is going to severely affect the fisheries.

We have the science and we know the first steps we need to take to do it and no one wants to do it. There is no political will to do it. I think scientists; we are trained to say maybe, probably, because we don't know what is going to happen; but even when we are more sure than we are most of the time, there is still not the political will to do it, so how do you solve that coming as a non-scientist?

MR. MIKELL: Political will comes from the people.

AP MEMBER: So what is the public will?

MR. MIKELL: Right, the public will will make the political will change. The only way to hit the public will is to put some information out there, whether it be 100 percent correct or not, let's just show that it is on the downslide.

AP MEMBER: We have with climate change, we have shown –

MR. MIKELL: But there are other things besides climate change.

AP MEMBER: Yes, but to fisheries, I mean, that is just one that I think that we are more sure than others. I don't know the answer.

AP MEMBER: I agree with Jenks, because education is the biggest thing and I am involved in this on a daily basis. That is the only way you change political will. He never said it's right. It is policy issue. The South Atlantic Fishery Council does not – unless they are asked to comment on an Army Corps 404 project or whatever that is going to destroy essential fish habitat, they can't elevate anything to the CEQ.

They don't have that authority; we don't have that authority. But, Jenks, in 2006 we did draw a line in the shifting baseline with the Magnuson-Stevens Act. We said, damn it, we are going to stop overfishing. Taking fish out of the ocean faster than they can reproduce themselves is just stupid. The public said that very clearly. We had a unanimous vote in congress. Now a bunch of people want to undo that, though. I don't understand that; I have a charterboat business. I don't like these regulations, but I will survive them.

You know. what we have to do now is what these folks are doing, is connect the fish with their ecosystems and show it very plainly on a Dashboard and everything else and get some sort of habitat provisions in the next Magnuson authorization and through other bodies of federal legislation that makes it just as stupid. To destroy habitat faster than you can create it is as stupid as to take fish out of the ocean faster than they can reproduce themselves.

I am really fascinated by what you all are doing, and I think that you are doing it in a way that especially as kids come up and really tech sophisticated educational systems, that this is going to get easier, if it is ever easy. It is never easy but it will become more possible. You know, we are looking 2, 3, 4 years down the road to the next Magnuson Reauthorization Act.

I think that the quicker we have something in place to show the connection between habitat and fisheries production to make the case to the fishing community the healthier the habitat is the more fish you can harvest. We might have a golden opportunity in the next few years. All this panicky stuff you see in the legislature right now will go away as the economy improves, and hopefully the stars will align. I hate to sound high-minded and Pollyannaish but if you don't you will drive yourself to despair in this business.

MR. WILBER: All right, I've got to throw a trial balloon out here just to see if it seems like a good idea or not. One thing that I think this body could do because of who we are and what our collective technical expertise is and what our role is as an advisory panel to the council is that we

could put together something that will be in the council lexicon called a policy statement, but it could basically be just a statement where we make some pretty concise statements about what we believe is the status of coastal habitats and their relationship to supporting fisheries and set some goals for the ecosystem in terms of amount of protection, amount of restoration and try to bind those protection and restoration goals by certain years and see if the council would actually endorse that kind of policy statement.

Then it becomes fodder for the rest of us to use in our day-to-day activities as we do the individual negotiations with the Army Corps and the Navy and everybody else about all the various activities they want to do is that we can use this policy statement to kind of guide our individual discussions with them and kind of see what that could do.

Just to kind of translate it towards a little something the LCC folks were talking about, knowing what are the flows within the rivers, within South Carolina, North Carolina that are most conducive to diadromous fish and estuaries within the constraints of the existing dams; knowing what those numbers are and having some group like the LCC have their reputation standing behind those numbers.

That kind of a report would go a long way in my negotiations with FERC. I tell you my personal opinion about what those numbers are; that doesn't mean squat in a negotiation with FERC, but having something like the LCC do that is something else. We could do like a habitat kind of equivalent and eventually bubble that up to maybe getting council endorsement.
I don't know if Duane seems kind of okay with that, right? As many of you know, I use to work in the northeast and I use to work for the Hudson River Foundation in a roundabout kind of way. They put together statements exactly like this with groups that were not nearly half as talented as this group here, so it is something that we could do.

AP MEMBER: I second that motion.

MR. PRATT: One comment on that, Pace, is be careful and don't lock yourself, not Pace, but the council or whoever makes that policy statement into a static world. Don't go to historical levels, as we have talked about all day with climate change, and it is happening. I may not live to see it, but some of the younger people in here are going to see some major changes in this world because it is really accelerating. That needs to be a caveat in that policy statement that we are going to allow nature to do what she is going to do, but we are going to do our best to make sure it happens in an orderly fashion.

MR. MIKELL: I know they can do that because they use the word "may" and "if" all the time.

MR. PUGLIESE: Directly to Pace's comments and concept of moving forward, one thing we actually do have specific to the in-stream flow direction, under the original habitat plan we had recommended that on a regional basis we establish baseline in-stream flow recommendations. Now we may have an opportunity to have an organization provide, in collaboration with another organization, SARP, some of those baselines.

Beyond that we actually have a foothold in making some of these recommendations on habitat by integrating the Southeast Aquatic Habitat Plan, that at a first level began to try to look at specifications of habitat conservation goals and different things and that has been integrated into the FEP.

Right now we have a coastal assessment moving forward, engaging of the states; we have an opportunity to do exactly what you are saying with some of the efforts. I'll kind of bounce it to Scott to at least touch on that as an opportunity. I think it feeds directly into this and it is moving toward what the council intended from the habitat plan to the ecosystem plan, which took it another step up saying that we are going to look at ecosystem indicators, status and then it feeds into actually our five-year next update of the fishery ecosystem planning, which could be the fisheries component of a marine plan or whatever. With that I would like to defer or bounce to Scott just on a real opportunity to –

MR. ROBINSON: This is very similar to the approach we took with the Southeast Aquatic Habitat Plan, that we have quantitative targets for habitat restoration. You put those out there and your partners see where they can make progress against those goals and then you try to measure that progress.

I mean when we put this together, in a lot of cases we didn't have the numbers we needed on a regional basis to develop perfect targets, but we did develop targets for almost every one of those objectives that give us a goal to shoot for. Then as we do our habitat assessments we go back and revise those targets. I think that method has been proven in the bird world, because that is where we got it was from the bird joint ventures. It has worked well there; I think it can work with marine habitats, too.

If we say we want X amount of living shoreline on the South Atlantic coast and this panel puts that out there as a goal, and then you have everybody from the Nature Conservancy, to SARP, to Georgia DNR contributing what they can to those goals, I think you are going to make some real progress.

We are going to start a coastal assessment, but really what I am looking at is there is enough information out there, especially from what I heard from these other groups, that we just need to compile it in a way that makes sense to not only us but to this panel and to the people out there that can help us and provide political and public support for habitat conservation there. I mean, that would be the way I would recommend we go at it. We have a common set of numbers that we can work off of. I think that would be important.

DR. MORDECAI: To add to that and taking those – putting my LCC staff hat on, just like we are doing with SARP and these other groups trying to look at the targets that have come out from these partnerships, and maybe those targets and those indicators become the LCC's estuarine marine targets and indicators. I think it would be a nice opportunity for people not have to go to a hundred meetings to answer the same question.

MR. PUGLIESE: I think this is really evolving well because one of the keys on the SARP side is connected directly to that National Habitat Plan, which specifically is saying habitat

connection to fisheries, to fish production and making that link very strong. The opportunity to use the information education side of this to understand that the alterations of an estuarine habitat here is going to impact gag grouper; and alteration of nearshore hard bottom may impact gag grouper, alteration of areas in deep coral systems; understanding all these different pieces and how they are connecting with the partners we have, with the intent to direct for some of these other efforts focusing on making that real understanding of productive and healthy habitats are going to result in fishing and fishing opportunity. I think those are resounding issues and messages that we can weave these different directives to translate.

AP MEMBER: Roger, watching the council deal with the Magnuson requirements and implementation – I don't mean to be critical here; it is more of a piece of advice – I don't think you all did a good enough job. Let me rephrase that; one of the things that I would have done is point out like where we say the town of Palm Beach and to stop the dredging project, the beach nourishment project around the Lake Worth Pier and those nearshore reefs; I mean, thousands of people a week fish there; and if that project had gone through, no one would have fished there.

You would have been better off fishing in your swimming pool, because it would have been bad. It wasn't just a habitat issue, it was an access issue. I think that as we move forward with these restoration initiatives with these various targets; one of the things you ought to think about – and I am not a scientist, I'm not a biologist, but if you can think about how to spin this knowledge, not spin it, present it accurately and honestly as a way to enhance fisheries, but also as a way to enhance access both in terms of the total allowable catch for a species. And if you do it, you restore a seagrass meadow for the sake of gag grouper recruitment, but there is also going to be seatrout and red fish and things like that on it as well, just a piece of messaging advice.

MR. WILBER: Just trying to translate all this into some sort of action that we collectively can hold ourselves accountable for, at the next Habitat AP meeting the AP would like to hear from the council and support system, which I guess includes the State Subpanel Chairs, they would like to see a framework for a set of protection and restoration goals and a distillation of the numbers that are already out there among the various partner groups; and with the idea that during that next AP meeting the AP would collectively decide on what numbers and timeframes it wants in its policy statement. We could walk out of that AP meeting with that basically done and hopefully a unanimous endorsement of its contents for the council to approve at the subsequent council meeting. Does that sound like something feasible?

MS. DEATON: That sounds great; it sounds oversimplified, I think. I was just going to say, Wilson, how long has APNET been working on indicators of something to report?

DR. WILSON: About three years.

MS. DEATON: Three years to come up with a list of indicators to monitor so you could come up with the State of the Coast Report. I think that sounds great. I was going to ask if the information you think should already be in there as much as we can know in the FEP, that maybe you can pull things out of that to come up with short, brief, public-friendly document state of our ocean or something based on what we know to date. Then from there what you don't know and then use that to work on your protection and restoration goals.

MR. PUGLIESE: Yes, and definitely I think that is definitely a place to start from because we have that core FEP that we need to take further, but I also think this process of doing a coastal assessment right now, the engagement of the individual states, there is an opportunity because that is going to be on a fairly fast track to get that in place.

I think it actually can help feed into even the refined view of maybe some of those other information sources, making the link to the species, building it similar to the way that we have done it with other policy statements very clearly.

AP MEMBER: I would just say that one of the great things that this group could do is come at it from this fisheries' standpoint. We all are coming at habitat from all these different components. Don't try to be all encompassing to everyone. I think that is what our challenge is, that is where the linkage needs to come in.

But the idea of taking what is in the ecosystem plan and pulling it out into statements, making the link between habitat and specific species, getting at what you guys talked about a little bit yesterday, which instead of the complex, being able to share some of the relationships on specific species, that can then easily be translated back to the public as well as to all these other groups that are starting to work at it from different perspectives would be really helpful.

I mean, that is just one thing to think about like how can you get the great work that is already out there out in a way that is more easily communicated. I think some of the work that is going on with the Dashboard does a bit of that, but it still takes a little bit of digging into; so a policy with those quick overviews, that would be a great starting point.

MR. WILBER: The point I hope that I am making is picking up on what others have said is that a policy statement will be a living, breathing document. We do not have to wait for these assessments and all these other things to be done to create this policy statement. We can create the policy statement using the existing, easily accessible information coupled with best professional judgment, and then we can revise that policy statement and polish it as these other studies began to produce their products and so on. The only wait and if or may will be for the improvement to it, but we can actually get it done at the next meeting.

MR. MIKELL: Halleluiah.

MR. WILBER: I think.

AP MEMBER: I am going to go back to something. Jenkins, you kept asking the same question and it is a good question. I want to ask if anybody is familiar with the Chesapeake Bay's Report Card? Do we have anything in the states at all that is similar to that because to me that answers your question.

That answers your question; it is an index of several different estimates of biota and water quality and other things like that and they bring it all together. For the general public, if you can say the water quality is a C; well, that is not too good. The next year may go up to 50 percent or

40 percent, but I don't know, we probably have some of that in some of the states but I am sure we don't have something coastwide.

DR. REICHERT: Pricilla can probably answer that question, also. South Carolina DNR has both a an environmental as well as what we have called Status of the Resource for a number of species, and we are developing that for more species, which I think is a similar concept to the Chesapeake with I think it is a color, green, yellow, red in terms of how the resource is doing. We are developing that and it is already there for the environment for the creek surveys.

MS. WENDT: It's called the South Carolina Estuarine and Coastal Assessment Program. I am sure you guys are familiar with it, SCECAP. I am just looking on the website and it looks like the most recent data that is available goes through 2008, but the idea is to come up with an integrated assessment of different variables to characterize habitats as good, poor or fair quality, and red, green or yellow. It is being done; it has been done. Whether you would want to use those same metrics elsewhere, I am not sure, but it seems like it is pretty comprehensive to me.

MR. HOOKER: I was just going to say that I think the State of the Bay Report though is a nonprofit foundation's report which you know – there are two different reports, okay.

MR. ROBINSON: I was just going to say the Gulf of Mexico Alliance has recently developed one for the Gulf, a very similar thing. They just went through that process for the Gulf. It probably wouldn't be hard to do something similar for the South Atlantic.

DR. MORDECAI: I was sort of going to sort of add on to that. The reference Scott made about the bird world doing similar things. As of just about three years ago, they started releasing a State of the Birds Report nationally targeted at the public and congress to answer that very question just for birds.

They release it every year with a different theme, private lands and public lands; but basically, just like all these other things, pulling together the existing data and then taking that extra step to make it understandable in plain language and not getting into super amounts of detail. It seems like there are tons and tons of examples of it being done, sometimes regularly. I mean, just like in Chesapeake, that is a regularly updated thing.

MR. WILBER: Yes, there is also the Heinz Center's National Ecosystem Report Card that some of us in this room I know helped participate in the design of that report card. There are lots of models to be used for these frameworks. The South Atlantic Alliance, if the Healthy Ecosystem Team moves forward with that first set of activities, they will be meeting sometime between now and when the next time the AP would meet to kind of have the big workshop that it was talking about.

There are a lot of opportunities to pull from existing information or activities that are planned for the very near future to pull this together. We can take that as a charge from the AP to the council to try and pull this framework together in time for the next meeting. The good thing about that is it also kind of sets up the agenda for half of the next AP meeting, all right.

MR. PUGLIESE: I guess the other part – and I have said it a couple times and I will just reiterate it – is definitely move forward with the other technical side, with a coordinated group looking at the Digital Dashboard and where that can go and collaboration between partners as well as refinement of the capabilities in that system. Holding a workshop in early next year to do that I think is going to be real important, and the technical representatives from the organizations that are represented as partners as well as the GIS specialists from the states, et cetera, are going to be key players and other appropriate advisory panel members that could have inputs on those.

I think it is going to be real critical to take it to the next steps for operational. It would have a pretty significant role and then connecting into the policy statement and opportunities to enhance information and some of the directives that may come out of the policy statement. That is the other facet I think that is going to be pretty critical and important to move forward with.

MR. WILBER: All right, we are getting close to the end. Anything anybody else wants to add?

MR. HARRIS: Thank you very much. On behalf of the council, I just want to thank all of you, the Habitat AP members, the presenters, and the other participants for all of your efforts these last two days. I get to hear Roger talk about this stuff at our council meetings, and usually we give him about five minutes to summarize everything that you all told us in two days.
I can tell you it just doesn't cut it. I really heard a lot of great stuff these last two days. I am thankful that I now have a much better understanding of what Roger has been trying to tell us. We give him five minutes and he usually takes fifteen, as you can probably understand. But in any event, it has been very enlightening and eye-opening to me to hear all these programs actually being presented by the people that run the programs rather than Roger.

I think you are on the right track. You are the Habitat Advisory Panel for the council. We don't tell you what to tell us. You tell us what you think we need to know. Just keep up the good work, you are on the right track, Pace, great job running the meeting and we will look forward to the next meeting, and hopefully it will be before I leave the council next year. Anyway, thank you all very much, I appreciate it.

MR. WILBER: Thanks, any bookkeeping stuff?

MR. PUGLIESE: Just a footnote to that. I think we may try just to facilitate moving some of these things forward and try to get this meeting maybe earlier in the year. We were going to actually try to have two meetings this year to set the stage and then finalize; and then just given everything else going on and a lot of other involvement, it was almost impossible. That may be something that we might try to do, and that would also guarantee that Duane could really be in that next one, which I think is going to be a really critical meeting, that next one.

MR. WILBER: I get to like bang this because we are done, right? All right, thank you, goodbye.

(Whereupon, the meeting was adjourned on November 16, 2011.)

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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT ADVISORY PANEL MEETING

Charleston Marriott Hotel
Charleston, South Carolina

November 15-16, 2011

INDEX OF MOTIONS

PAGE 7: Motion to accept the plan to complete the guidelines and to open it up for comment to the entire committee by January 15, and then for Roger Pugliese, Pace Wilber and the state subpanel chairs to finalize the guidelines based upon the comments received. Motion carried on Page 10.

PAGE 25: Motion to make a research priority the examination of deep-dropping and wreckfish fishery impacts to deepwater coral. Motion carried on Page 26.

PAGE 30: Motion to support research and EFH designation of habitats associated with specific species use of estuarine, nearshore hard bottom or other habitats. Motion carried on Page 30.

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