SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT ADVISORY PANEL MEETING

Crowne Plaza Hotel
North Charleston, South Carolina
April 1-3, 2014

Summary Minutes

Habitat AP:

Pat Geer, Chair
Dr. Christopher Elkins
Terry Pratt
Carter Watterson
Dr. George Sedberry
Jenkins Mikell
Melissa Yuen
Alice Lawrence
Pace Wilber
Terry Gibson
Steve Trowell
Dr. Amber Whittle
Priscilla Wendt
Susan Hilfer
Bill Parker
Thomas Jones
Mike Street

Council Members:

Dr. Wilson Laney
David Cupka
Mel Bell
Doug Haymans

Council Staff:

Gregg Waugh
Julie O'Dell
Roger Pugliese

Observers/Participants:

Howard Schnabolk
Lisa Gregg
Jessica Coakley
Gregg Bodnar

Additional Attendees Attached

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council convened in the Crowne Plaza Hotel, North Charleston, South Carolina, Tuesday afternoon, April 1, 2014, and was called to order by Chairman Patrick Geer.

MR. GEER: All right, let's get started. Welcome to the Habitat and Environmental Protection Advisory Panel meeting. My name is Pat Geer; I am the brand new chairman replacing Pace Wilber. I have been on this committee since 2002, and we've had two chairmen. I don't plan on staying on that long. I'll do my term.

I want to welcome everybody and we have a couple of changes to the agenda, so I want to go over those first. The first change is tomorrow morning. Because of some conflicts some of the members have, we are going to switch the initial energy policy statement revision with the initial artificial reef policy statement development.

We're going to switch those around so we are going to the artificial reef discussion at 9:00 a.m. and the energy policy will follow that. I don't see any other changes to the agenda other than that. Can I get a motion to approve the agenda? Consider it moved; okay second.

MR. MIKELL: Let's make sure Roger is in agreement with that.

MR. GEER: Consider the minutes approved. The next thing let's just do open statements and introductions. Let's go around the table and introduce ourselves. Let's start with Dr. Wilber over there.

DR. WILBER: Pace Wilber; NOAA Fisheries here in Charleston, South Carolina.

MS. COAKLEY: Jessica Coakley; I'm staff with the Mid-Atlantic Fishery Management Council; and I'm here to learn more about your habitat process and meetings.

DR. LANEY: I'm Wilson Laney. I am the Chair of the corresponding council committee here to observe the meeting. I am with the U.S. Fish and Wildlife Service based in Raleigh, North Carolina.

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

MR. MIKELL: I'm unknown, Jenks Mikell; conservationist Edisto Island, South Carolina.

MS. WENDT: Priscilla Wendt; South Carolina Department of Natural Resources, Office of Environmental Programs here in Charleston.

MR. PARKER: Captain Bill Parker; charter fisherman, Hilton Head Island, South Carolina.

MS. YUEN: Melissa Yuen. I'm the habitat program coordinator at the Atlantic States Marine Fisheries Commission.

MR. BODNAR: Gregg Bodnar, North Carolina Division of Marine Fisheries, Artificial Reef Program.

MS. GREGG: Lisa Gregg; Florida Fish and Wildlife Commission, Division of Marine Fisheries Management.

DR. WHITTLE: Amber Whittle; Florida Fish and Wildlife Commission.

MR. GEER: I'm Pat Geer; I'm with Georgia Department of Natural Resources.

MR. PUGLIESE: Roger Pugliese; South Atlantic Council staff.

MR. WATTERSON: Carter Watterson; Department of the Navy.

MR. JONES: Tom Jones; Georgia recreational fisherman.

DR. ELKINS: Chris Elkins; North Carolina recreational fisherman.

MS. LAWRENCE: Alice Lawrence; U.S. Fish and Wildlife Service out of Athens, Georgia.

DR. SEDBERRY: George Sedberry; NOAA Sanctuaries in Savannah, Georgia.

MR. PRATT: Terry Pratt; commercial fisherman in North Carolina.

MR. STREET: Mike Street; North Carolina, retired from the Division of Marine Fisheries.

MR. TROWELL: Steve Trowell; North Carolina Division of Coastal Management based out of Washington, North Carolina.

MR. CUPKA: David Cupka; council member, South Carolina.

MR. HAYMANS: Doug Haymans; Georgia DNR, council member.

(Whereupon, introductions were made by the audience.)

MR. GEER: Welcome to everybody.

DR. LANEY: Mr. Chairman; I forgot to mention that I am also sitting in for my colleague, John Ellis, who is actually on the committee representing the Fish and Wildlife Service from North Carolina. John couldn't be here at this time, so I'm doing dual duty.

MR. GEER: As you usually do; duly noted. I want to welcome everybody. We have some guests here, some long-time members on this committee and we have a few new members as well. I hope it is informative to the students that are here and to our visitors from the Mid-Atlantic as well. I guess we can move on. Most of today's topics are dealing with our policy statements that we have created. I will let you mention anything you want to bring up before we start with that.

MR. PUGLIESE: Just as Pat has indicated, today is really focused on shoring up and finalizing some of the policy statements that this group has been working on for a while. We had some discussions at the last council meeting and some comments. Just to make sure that we address

any of the concerns and that these are in the best shape as possible, the council wanted us to be able to move them forward, address these comments and finalize to bring back to the council in June.

Today we'll be looking at the Aquaculture Policy, the SAV Policy and then how to shore up also the Invasive and Beach Policy. A lot of policy discussions, but I think it is at a stage where we can move forward. You all can add these additions in and move on to some other policy discussions we're going to have tomorrow and then into the rest of the meeting. With that said, I'll pass it back to Pat.

MR. GEER: All right, the first one we're going to be discussing is the Aquaculture Policy. I think what we're going to do is Roger is going to put what we have up there right now and then try to incorporate the changes that we were suggesting. Amber Whittle had several comments that she had, which was Attachment 2 I believe in your handout. This is going to be kind of dry to go through this line by line and put the additions in, but I think that was what we were considering doing.

MR. PUGLIESE: Yes; and I think what we've been provided – and I sent out the latest version the other day. If you didn't get the e-mail version, we do have hard copies of this. It integrates both the existing policy and the recommendations and comments into this document. You also were provided some of the comments directly from FWC that was the second attachment I think of the briefing materials.

But this one is the most updated, integrating the recommended wording and some of the comments that were provided and worked on both with Amber and in cooperation with Lisa Gregg from the commission. That is where we stand, and what I've got projected is that latest document.

MR. GEER: How do you want to proceed?

MR. PUGLIESE: I guess we'll pass it over and we have the comments, we have the document, and however you would like to address this. Right now we had originally set it up where we've got the policy statement and then we are going to go into round table discussion, so whichever way you would like to address it. If you want to do it as we go through the policy or if you want to do the overall comments in advance; that is your preference.

DR. WHITTLE: As you guys can tell from this, this is not my field of expertise and it is Lisa's. She came to help us and she is definitely going to go through it. I have learned that Florida is very different than the other states in terms of our Aquaculture Policy, and Lisa is going to tell you why.

MS. GREGG: I don't know if we're so different. I know that we've done an awful lot of work both within our Division of Aquaculture over in our Department of Agriculture and Consumer Services, and with stakeholders. We developed best management practices for net pens and that has been since 2005, maybe 2006, somewhere around there.

We did that quite a while ago. We also have genetic and health standards that are incorporated into FWC rules that govern any kind of releases into the wild when it comes to aquaculture

activities or stock enhancement or research. It really doesn't matter what purpose the release is for, all of the potential risks and considerations that need to be made for those; we've done rulemaking. Those kinds of things have been incorporated into rules.

I think a lot of the comments that you see from the FWC have just been based on our many years of experience and at least planning for offshore aquaculture either in state waters or in federal waters outside of state waters. We've been working on this for quite some time. That is where at least Florida is. I don't know how you want me to do this. Do you want to go line by line? How do we need to do it?

MR. PUGLIESE: I think what we can do is just walk through here. I think we've got the comment and the integrated materials. That would be the simplest way, because the rest of the document is pretty well where it is at in terms of the review, et cetera. It really focuses and that is what is highlighted in this document. If we do that, it would be the simplest way to address those and acknowledge. We can go through those and then follow up with any additional comments from the panel members.

MS. GREGG: The first comment that we had; we weren't sure – well, we weren't sure, the definition that was used in this aquaculture, that was used in this policy; it says that it covers all authorized production of marine finfish, shellfish, plants, algae and other aquatic organisms for a number of purposes. But I think what we were a little bit confused with, because it did include plants within the definition of aquaculture for this policy – and then how does the Magnuson-Stevens Act cover – it is not covered under the definition of fishing is it or is it?

MR. PUGLIESE: About the only thing that we've addressed that is a non-fish component is our Sargassum Plan. The Magnuson Act does identify that as a fish under Magnuson.

MS. GREGG: Okay, so it is a fish under Magnuson but technically it is a plant. I think at least on our commission level we were just a little bit confused, because there are some things in the policy that make complete sense when you were talking about animals; but when you start talking about plants, it may not necessarily – it didn't make a whole lot of sense. Maybe one of the things we just need to do is be aware of how this policy developed and kind of substitute plants because that is part of the definition of aquaculture. I think that there might be one or two spots that I think we pointed out specifically.

The next section; Overview of Marine Aquaculture and EFH Interactions, there are just a couple of minor language recommendations there. Under the sentence; "The environmental effects of marine aquaculture can vary widely depending on the species and genetic stock selected for culture; the location and scale of the aquaculture operation, the experience level of the operators, the culture systems, facility design, bio-security procedures and the projection methods."

There was just some language, and I think some of the things you will see is that a lot of the FWC's comments focus on genetics and health. Those are the two primary focuses of our comments. Roger, how do you want to do this? Does anybody have any questions or do we need to vote on things as we go along?

MR. PUGLIESE: No, it is usually by consensus.

MS. GREGG: Usually by consensus, okay. All right, next the section on escapement.

DR. WHITTLE: I guess if anyone has any comments or questions just do it as we go along.

MS. GREGG: Yes, please feel free to interrupt me as we go along. There were a couple spots in the document where we had some conflicting statements, and this is one of those. That last sentence there on the first paragraph; "The use of local native species can result in little to no impacts on EFH in the event that escapement does occur."

Now if you look two comments below that. The first sentence – yes, that other one. Even through use of native species, escapees have the potential to alter community structure, disrupt important ecosystem process, and affect biodiversity. That statement says even through the use of native species, but yet two paragraphs before it implies that the use of native species can result in little to no impact. We've got some conflicting statements here and I don't know how you would like to resolve that.

MR. PUGLIESE: The recommendation is to remove that. With the statement made later in the policy identifying that there is clear potential; that is the obvious recommendation.

MS. GREGG: That was obvious to us; I just want to make sure. That comment in between – we just made a comment that there are some species that are invasive in Florida waters and also culture for food, but we're not sure if specifically Oreochromis were culture for food and we were just saying that you could get around that by listing all species; generally referring to Tilapia Cichlidae and then that way we don't have to be very specific about exactly which species they are; and it would apply to more than one state.

Again, as we stated initially, again with regards to health; one of the primary issues that we felt like attributing to likelihood of escape from aquaculture operations would be also the adequacy of the bio-security and contingency plans. Like in the event of a hurricane; you know, what is the contingency plan to address a net pen in the water? Should they move it? What kind of things could be done to avoid escapement when you've got inclement weather, significant weather events on the way, and things like that.

We felt like that is just something that should be another consideration with regards to escapement. That comment there was just the language comment. Again, we talk about escapement. Going back to before where we eliminated the sentence with regards to saying that use of local native species can result in little to no impacts on EFH; again, it is going back to instead of saying preventing, saying minimizing the likelihood of escape.

We've already said that escapes are going to happen; we know they are going to happen. We are going to minimize or we would like to minimize the impacts of those through evaluation of a number of factors. Disease in aquaculture, there at the bottom, there were just some additional things that – like I said a lot of things that we focused on were genetics and health. This is one of those with regards to health. We just added some things in there about accredited health professionals, about regularly inspecting – I don't know if it is just language.

We call them stocks rather than crops but it is really not a preference. One of the things that last sentence there, we felt it was very important that culture facilities should be required to report

disease and mortality incidence to the appropriate state and federal agencies; again so that state and federal agencies can potentially look at what is going on and assess the risk to the wild stocks from this disease event and determine if any kind of management measures should be put in place to address that.

Here we've got just some citations to support some of the comments that we've made here. I think with regards to international trade in live fish and shellfish has led to the introduction of disease to new areas; I guess it was just a question. We were just wondering if we wanted to limit that to just about international trade in live fish and shellfish has led to the introduction.

What about aquaculture products in general in addition to fish and shellfish; because the discard of seafood processing waste in water bodies and things like that. There are some other things that are attributed to it. It is just a question; just a thought for people to consider.

We weren't sure, because we weren't familiar with this NAAHP 2008 Document regarding whether or not that addressed quarantine procedures. If not, we felt like that ought to be addressed. There are a group of folks from North Carolina that is working on this, correct, Roger?

MR. PUGLIESE: Chris worked on it. We've got a big group that is outside of the AP that had input.

MS. GREGG: Well, that is what I am talking about, outside the AP. Some of these comments with regards to citations and things that we felt like if particular documents didn't include things, then maybe it is something you might ask them to address.

MR. PUGLIESE: I think we can ask them, but I think the point that you're making is that even if this does not – this is probably appropriate to include in here so it is very clear that you intend to have it. I think regardless, this is probably appropriate to include anyway, and a lot of these different ones. AP members, feel free if there are any issues with some of these recommendations; now is the time to do it.

MS. GREGG: Yes, please. I feel like I am talking to myself and boring everybody.

MR. PUGLIESE: That's okay. No, I really appreciate all the work. What you're doing is really refining and catching some of these types of issues. It was just so big of an effort, some of these kind of just dropped through. The experience Florida has with this will really shore this up even better.

MS. GREGG: It is a huge effort. I do want to kudos to everybody, because it is a very well-written document. It is a lot easier to go back and edit and find little things that could have been considered or might have been addressed than it is to originally write it from scratch. Further down; talking about communicable diseases; we just felt like there were different types of operational categories and their potential impacts and their levels of risk in the environment to EFH, to fisheries, to just resources in general. They were different.

There were levels of the potential impacts. We felt like closed onshore systems had a – we tried to identify them; these are the potential impacts for disease transfer that they had. On the second

page we had flow-through onshore systems, then inshore and nearshore cages and net pens or offshore cages and net pens. We just tried to identify the potential risks associated with each one of those types of facilities based on their locations and whether they were open or closed systems and things like that.

MR. GEER: Lisa, before you go on, I had a quick question about the three comments you had before that Number 7 – because aquaculture products in addition to live fish and shellfish; e.g. discard of seafood processing waste in water bodies; are you talking about processing the aquaculture products, just aquaculture products and not seafood in general?

MS. GREGG: Just aquaculture.

AP MEMBER: I probably ought to remind you that in North Carolina we have a lot of boats that go fluke fishing and pull in wild stocks from Rhode Island even come back to North Carolina and process those fish.

MS. GREGG: That can be a disease transfer vector, also. When you're moving species or moving from one place to another; you always have the potential to impact animal health. It happens all the time. Again, some of this is just for thought; you don't have to incorporate it at all. I guess bottom of Page 6 we just had again isolation and quarantine.

We're going back to the quarantine issue that we felt like needed to be addressed and sticking a few words in. At the top of Page 7; I think this is one of those situations where we talk about use of drugs, biologics and other chemicals where we say aquaculture, drugs, biologics and other chemicals play an important role in the integrative management of aquatic animal health; this is one of those where you discuss animals, but we don't necessarily discuss plants.

I think this is kind of one of those things where we've got the definition of aquaculture that includes plants, but yet pretty much a lot of this is just dealing with animals themselves; so just again pointing it out. One of the larger comments that we made was that we should identify the use of antifouling biocides for nets, pens, and cages to try and keep off the fouling organisms that will build up on these facilities. That is where we just put a sentence in there; some chemicals may be used as antifouling biocides for nets, cages and platforms. That next comment is just a language thing, infestations versus infections; again just nitpicking, I think.

In this situation, again, we're trying to talk about the impacts of the chemicals used in aquaculture. Again, the impacts are going to vary differently based on the systems, whether they are closed onshore system, flow-through, inshore, nearshore, and offshore. Middle of Page 7, Roger, just as disease, we've just kind of broken things up into different types of system. Page 8; I think in this section there was some concern in that middle paragraph. That was it.

Talking about parasitic diseases and then there is some concern with the citation made there in the middle where it talks about research suggests that environmental impacts from parasiticide treatments are minor and restricted to spatiotemporal scale of infestation and treatment. The citation that was provided for that didn't seem to be focused on the statement that was made, so we just kind of ask that they go back and potentially look at that.

There are studies that have shown that there is a level of resistance with sea lice because of largesse of quantities of drugs and chemicals. There is some evidence to show that. I think it was just a matter of refining those statements and making sure that we have some citations in there that are accurate or that accurately reflect the statements that are provided.

The same with that bottom paragraph where we talk about vaccinations; where it says vaccinations become a basis for good health for most finfish operations. There are just some statements that are made that in some respects could be viewed as controversial. If we're going to be making those kind of statements, it would just be good to support them with citations.

Page 9, just a sentence up there that didn't seem to really fit in with the rest of the paragraph; it didn't seem to be value added so we could potentially look at taking that out. Water quality impacts; this was a big issue probably because our health specialist is also a harmful algal bloom specialist, also. Jan is very big with that.

There is a lot of language in there about harmful algal blooms. Again, it is a matter of going through and reviewing the citations and some other citations were provided to support other viewpoints. I think probably where it talks about linkages between aquaculture facilities and algal blooms were not evident; and I think that is actually pretty evident.

There is at least one citation there that supports that. We discussed contingency planning for net pen relocation and early warning systems designed to detect early blooms. This is contingency planning not only for escapement, but also for potential algal blooms. You will see a lot of repeated thoughts and just applying it to different sections of the policy. Page 10, minor comments; again just another statement that if it is an accurate statement, then a citation is needed to support it.

Page 11; between 11 and 12 there were two comments. This is another situation of conflicting comments where we say in some cases moderate discharge has been shown to enhance local productivity of marine species including algae and fish. Then there are three citations to support that; but if you look on Page 12 – I don't know if you can get down to that – where we say that it is not common for increases in chloral or algal production to be measurable near aquaculture operations, especially in well-flushed areas.

It just seems to be that we've got one statement with three citations that support saying that moderate discharge has been shown to enhance local productivity of marine species; and then you've got a statement on the next page where it says it is not common for increases to be measurable near aquaculture operations. We just need to address those two.

MR. PUGLIESE: A quick question I was going to ask; with the second statement, is the recommendation removal of the first essentially?

MS. GREGG: I think probably so; but the problem is that in Page 12, that statement is not common for increases, blah, blah, blah. There is a therefore after that where they are saying algal blooms are not expected to result from nutrient enrichment from fish aquaculture operations where properly sited.

That is a big therefore, also, and it is dependent upon a statement that is not supported by any kind of citations. It is in conflict with another statement that is supported by three different citations. It is just a matter of the conclusion that is being made there doesn't seem to be supported. If that is the conclusion, then that is fine, but it just needs to be supported with some kind of citation or literature that is going to support the statements and the actual concepts that are being pointed out.

Go back to Page 11, Location Specific Interactions with EFH; the Onshore Aquaculture – right there, just real quick – because that B, it says this whole section talks about onshore marine aquaculture operations have the potential to impact a variety of EFHs including. In B it says exposed hard bottom, for example, reefs and live bottom in shallow and deep waters.

Well, if we're talking about being in deep waters; that is not going to be an onshore marine aquaculture operation, so let's probably strike that or at least evaluate the statement and see whether or not it actually applies or is applicable to onshore operations. Back to Page 12, at the bottom of it, where it talks about moderate nutrient loads discharged from aquaculture operations can also increase productivity of some marine environments.

Our comment here was that this was presented as a benefit; but if you are talking about an ecosystem that is dependent on nutrient poor and clear water, then obviously that is not going to be the case where you have nutrient loads. It could be detrimental to the other types of ecosystems. I'm not quite sure how – maybe because it says summary and environments; maybe identify the marine environments or at least identify the fact that it can also have an impact to environments that are dependent on nutrient poor and clear water.

MR. STREET: There are a number of areas in North Carolina Estuarine Systems that are naturally very low in productivity; highly acid, very limited species diversity and things like that. We have had people back when I was working argue that whatever their project was would improve the area; but it is not naturally in that way, it would alter the area.

It becomes a value judgment of whether or not; what to do. In fact, there is a project right now, a mine that would end up putting both nitrate and phosphorous into an area very, very low in productivity. It could actually increase the fisheries, but that is not its natural state. You have to decide a value judgment there.

MS. GREGG: Mike, I think in that situation you kind of run into a situation of – you know, like you said, you are altering the environment and enhancing it, kind of like in many respects like an artificial reef or something like that for the benefit of fisheries. You are right, that is value judgment and it is a judgment call; but in order to do that, I would say that whatever this project is, is going to have to go through some kind of permitting process.

It is going to have to go through some kind of EFH consultation through the National Marine Fisheries Service. I think that can be accommodated for in the language here. I don't see why we can't accommodate for it. Just as we're saying, it can be a benefit to increase productivity in some marine environments, and you also say but it can also be detrimental to other ecosystems that are dependent on nutrient poor clear water. I think that we can certainly put something in there that includes your sentiment. Again, it is a value judgment as to what the benefits and drawbacks are going to be for that area.

MR. GEER: Pace, did you have a question?

DR. WILBER: No, I have a comment. I find this whole paragraph to be pretty troubling given the number of things that are cited elsewhere in this document and pretty well supported the fact that this whole paragraph doesn't include any citations. It is full of more weasel words than anything else. I think this is more speculation on the part of the authors as opposed to something proven enough to be true to be part of the policy statement. I would recommend it be deleted.

MS. GREGG: Pace, I think there were a number of places where we said that citations were needed to support things. I think that you are right; there was a lot of speculation I think that was made on behalf of the authors.

MR. GEER: Any comments on that at all, about deleting it?

MR. STREET: I agree.

MR. GEER: I agree if you don't have references, but I want to hear from everyone else, if I can; so strike, done.

MS. GREGG: Page 13, all the way to the bottom; I didn't quite understand this. I don't think any of us did where it talked about the environmental effects of offshore shellfish and finfish aquaculture are not well-documented because few operations exist in the United States.

Well, I don't think that there is a number – because so many other countries are doing offshore aquaculture, and they have respected universities and they write papers and they are published, just as much as they are in the U.S.

It is not quite clear why we are not taking the information from that research and applying it as best as we can to the situations occurring here in the South Atlantic. It was just a matter of if we are not going to use their data or the data that exists regardless of whether it exists from the U.S. or not; if we're not going to use the data, then reasons should be provided as to why we're not using it or why the data is not applicable. It may very well be that it is not.

AP MEMBER: Perhaps it is not applicable if that ecosystem has little resemblance to the U.S. ecosystem and we ought to say that.

MS. GREGG: That was the comment. If the entire body of offshore aquaculture research from other areas outside the U.S. are completely not applicable to the U.S. because the water bodies are different or whatever, then you need to make that statement or identify it; but we shouldn't make a statement that it is not well-documented because few operations exist in the U.S. We need to identify it, because there is a significant amount of data out there and literature out there regarding aquaculture.

MR. PUGLIESE: I think at least what makes sense is to flip that around, because I think the intent was that knowing exactly what the impact in U.S. waters is probably more of what I think they were trying to get. Because you are right, two aspects; one, the applicability is different for outside of our region, plus the fact that we do not have information on it. Flipping the wording

around within that identifies the unknowns of environmental effects of offshore in the U.S. waters.

MS. GREGG: It is hard to say even within U.S. waters, because you've got Kona Blue in Hawaii, and that is very different from southeastern waters. I probably think that it would probably need to be a little more specific as to it is not applicable to – or the body of information that is out there right now isn't applicable to the southeastern Atlantic because of the fact that all of those bodies of water are different.

MR. PUGLIESE: You may have to specifically say the South Atlantic, because you do have the cobia culture in Puerto Rico.

DR. WILBER: I think there is an easier fix to this paragraph and just simply say the environmental effects of offshore shellfish and finfish aquaculture are not as well documented as they are for inshore waters; and just strike the reference to any country or anything like that. Then the rest of the paragraph stands fine.

MS. GREGG: Okay, this one down here was probably one of the bigger issues that we had concerns with this policy where we talk about only native or naturalized species should be used for aquaculture in federal waters of the South Atlantic unless best available science demonstrates use of non-native or other species would not cause undue harm to wild species, habitats or ecosystems in the event of an escape.

That was very concerning to us, because at least in Florida we've already got rules that say you are not allowed to use anything but native species. No if, ands or buts, you just can't do it. Those are in the aquaculture best management practice; those are in our genetic risk assessment processes. That was one sticking issue that was very concerning to us. I think in our comments if you want an example as to whether or not, you know, why it is so concerning.

MR PUGLIESE: I think these ones here are pretty critical, because one of the things you do not want to do is have direct conflicts, especially if there are more conservative rules at the state level and have a lot more experience than we do. Some of this wording is tied directly to the aquaculture programs side of thing, so I think this is real important coming out of this group for the region. You can look and weigh in here if you have another concern.

MS. GREGG: I've worked with Michael Rubino, and I'm surprised that he said stuff like that or his staff did.

MR. GEER: This is an important topic so deleting that one word may be very important.

MS. GREGG: Well, deleting or naturalized and the whole idea of science demonstrating – and it may very well be that if anybody is really concerned about it, I think that our geneticist, Mike Tringali, did a really good job explaining why this is such a significant issue and the language changes. I don't know if you want me to read that or if – okay.

MR. PUGLIESE: Anything that enhances the record on building this I think is important.

MS. GREGG: In this situation, the term "naturalized species"; that was what was very concerning; and the example that he provided was feral mallard ducks. They are naturalized in Florida, but many of the 90,000 domestic mallards that escape each year despite our state permitting and containment requirements and everything that we have in place; they continue to negatively impact native model ducks, because they hybridize with them.

That is just a terrestrial example that we have in Florida. If there were naturalized species, then you would be very careful. They felt that if there were some genuine examples in any of the South Atlantic states, that it ought to be very specific and identify what those are. I don't know if there are any.

MR. GEER: I would think some of the catfish species would be that. Wilson, you may want to chime in on this; channel cats.

MS. GREGG: Again it is going to be based on is there some kind of criteria that it would be based on to identify it as naturalized.

DR. LANEY: I don't know, having some experience – and Melissa may want to chime in here, too, although I think we hashed this issue out at ASMFC before Melissa came on board. But there certainly is a lot of concern on the east coast about introduced catfishes, which technically are native to the U.S. but they are not native to the South Atlantic coast, such as blue cats and flathead cats.

I guess the further north you go, channel cats are not native to some of the northern drainages. ASMFC actually passed a resolution encouraging the removal of blue catfish, I believe. I may not have the specifics of that exactly right; but we can pull it up and provide it to the committee if there is some interest in that.

But certainly those species, because they get so much larger than a lot of our native species, do create impacts in the South Atlantic drainages. That is in cases where they have been released into the wild. They are not aquaculture operations, but they did in some cases originate from aquaculture operations. They were released.

MS. GREGG: Or escaped.

DR. LANEY: There are concerns there again even for our native catfish. I know you have non-native catfish abundantly in some waters in Florida, including national wildlife refuges, much to our chagrin.

MR. PUGLIESE: I think one of the keys is that we're talking about applying this to aquaculture in federal waters. I would doubt that there is any type of a naturalized species that we could identify with in our region, especially if we're talking about –

DR. LANEY: Unless you want to consider lionfish a naturalized species.

MR. PUGLIESE: We sure don't want it in aquaculture.

MS. GREGG: I think that you just continue to and provide it some support as to why. Just using the term "undue harm", you just said it was kind of general. It didn't emphasize the potential impacts well enough and it is just vaguely perspective, best available science demonstrates. It lacks serious rigor considering the potential ecological cost of being wrong. I think that is a very big statement.

MR. PUGLIESE: To that; I think the bottom line is this is probably the most significant impact of the potential for genetic impacts. You look to the Pacific Northwest replacement of the salmon populations with genetic different species; that is a real issue.

MS. GREGG: Yes, and that is with the next comment in Number 5. I think he provided a very good kind of a compromise, where it talks about – the original statement was the use of genetically engineered aquatic organisms should be considered separately pending approval by FDA.

He said that was fine; but as long as the FDA's approval process included rigorous and documented biological assessment which concludes that there is no possibility for genetic exchange with natural organisms or irreversible form of ecological impact. It is not just leaving it up to the FDA saying; okay, the FDA approves it, that is fine; but it is FDA approval that includes some kind of genetic risk assessment process.

DR. WILBER: I think we have to be really careful with these two paragraphs. We're kind of modifying it now to make it inconsistent with the NOAA Aquaculture Program. Do we really need to go that far given that this is an information document? It is not regulation; it is not going to dictate how the council is going to comment on any potential proposed offshore aquaculture facility or something like that.

Now as an information document, a balanced discussion of the different points of view is really good; but taking sort of an extreme point – and I don't mean extreme as in the sense of extremist, but kind of going to the point of where there is no room for the alternate point of view when that alternate point of view is widely supported by an agency that has a lot of interest in aquaculture is not I think a good thing to do.

For those of us who were part of the original Aquaculture Policy Statement and all the difficulties we had in taking positions that were different from the NOAA Aquaculture Program; this is not a fight worth picking. This is a case where a balanced discussion of the opposing points of view is really helpful to people who will pick this up in the future, but we shouldn't be excluding or taking an extreme position.

MS. GREGG: Just one comment on that; I would be surprised if it is really that far off, because I can't imagine that the NOAA Aquaculture Program doesn't take genetic impacts and things like that into consideration. I would be interested to see what actually was conflicting with this, because I would be very surprised.

DR. WILBER: Yes, they take genetic information into consideration. They have a whole technical report on how to take genetic information into consideration; but phrases like "naturalized species", those are in the NOAA Aquaculture Policy Statement or program statement. When we start striking those out, we're running into some issues. One other

alternative you can take is you can sort of have two versions of this part of text; and when this policy statement goes to the council for approval, you could present both versions of the text to them and they could pick one over the other.

MS. GREGG: The other issue is, too, Pace, is that NOAA's Aquaculture Program had to take into consideration all of the areas where aquaculture was occurring. Sure, they probably have other areas outside of the South Atlantic that actually have naturalized species and potentially needed to have that taken into consideration; but I'm not sure that it is appropriate for the South Atlantic. I think that is specific to what we're discussing here.

DR. WILBER: Let's not lose sight of the fact that this was written by scientists who work for the NOAA Aquaculture Program, who are stationed and do research in the South Atlantic. I think that kind of lapse is probably something that could have possibly happened, but not something that is likely to have happened given the process that got us to this point.

MR. GEER: Mike, did you have a question or a comment?

MR. STREET: Yes, it uses the word "species". Some species can have a very, very wide range; but the local ones to a given area might be somewhat different. Some stock from outside a local area might have some genetic advantages. Naturally, I'm not even talking about the GMO. If they were brought in then to a local area as the parent stock or whatever for growing – I'm not sure what the status of it is – but bluefin tuna; is the Pacific bluefin a different species from Atlantic bluefin?

There are believed to be a number of different races or whatever term is appropriate. If you use the word "species" that suggests that the ones that are primarily on this side of the Atlantic, which spawn in the Gulf of Mexico, are the same species as those which spawn in the Mediterranean; now I don't know if the DNA work has been done to decide that.

Certainly, from an evolutionary viewpoint, those that spawn in the Gulf of Mexico have some reason that they have survived there from an evolutionary viewpoint and those that spawn in the Mediterranean have their genetic reasons. Do you start moving them around or leave those from the Pacific or the southern bluefin off Australia –

How much is it the same species; I don't know. There are some potential issues there when you start throwing them all together. Of course, that is why we have striped bass from New Jersey that colonized the Pacific, et cetera, and why there are flathead catfish having very serious negative impacts in some of the eastern rivers in North Carolina. People just threw them in there. This is a very messy area. It is an area where taking certain actions could have some very, very serious long-term consequences. The most conservative approach is use what Mother Nature has put there. I personally would prefer that.

MR. GEER: Mike, instead of the word "species", would you want "native populations"? We start splitting hairs here.

MR. STREET: Yes, we are; but if it is going to be any aquaculture site, is it at a specific location; it may be; but I'm not a geneticist, not by any means, believe me, if you go back to my

academic background. But there are potentially serious consequences of making a mistake in that area.

MS. GREGG: I think that is what we're trying to point out. We have a genetic risk assessment process in Florida. We have a flow chart that you can put any single type of project through, whether it is a net pen or it is a stock enhancement project or a research project. Like I said, we treat all introductions into the wild equally.

We have a flow chart that specifically says if it is this, then it goes this. It gauges the level of risk by the time you're done as high, medium or low. Low genetic risks obviously mean the project should just go ahead and be approved. High ones mean they should be disallowed; but a medium risk means well, maybe it should be approved and you just have to have some monitoring measures in place to look at the potential impacts.

I think that our statements – and again I am just going to go back to his. I understand Pace's concern; and I think that the South Atlantic Council as a federal agency does need to be cognizant of what NOAA Aquaculture is doing. I think that there needs to be some coordination with the authors of the document.

If they are the ones that are from NOAA Aquaculture and say, well, present them with this language and say is there a problem with that in the South Atlantic? We don't really have – if anybody can think of naturalized species that might need to be included; then that was the exact comment that we made.

Well, if there are naturalized species that need to be included go ahead and name them specifically. Don't just say naturalized species in general. I think that it is a matter of going back and working with the authors of the document and specifically asking them whether or not this could be appropriate for the South Atlantic.

I can tell you that language, if it stayed the way it was, it would be inconsistent with Florida. That does pose some problems with regards to consistency reviews through the Coastal Zone Management Act, because all of the permits that would potentially be issued for these aquaculture projects will have to go through a consistency review.

DR. WILBER: I don't understand how an information document produced by the council would cause a CZM problem for the state of Florida.

MS. GREGG: No, I'm saying that you're right, not this document in particular, but it is my understanding this document will be informing regulatory processes down the road in the event that they do occur for a fishery management plan or anything else like that. This document is being designed to inform that process. It is just a consideration.

DR. WILBER: I'm not really sure what we mean by inform the process. Hopefully, these documents are useful to the process and they will inform it, but we don't know that for a fact. In the hope that it does; that is why the balanced discussion approach I think is really what is needed. Again, I do think coordinating with the authors is good, but this is going to have to be at a specific point brought up to the council when we ask the council to approve this policy statement.

MR. GIBSON: I just wanted to reinforce what Lisa is saying and what Mike just said. I worked on bluefin as an advocate for the last five years; and that would be a mess if we brought a new genetic stock there. There is no doubt about it. We made a joke about lionfish as a naturalized stock; well, hey, those things are delicious and they are pretty easy to raise in captivity.

I could certainly see someone coming along and saying, "Oh, don't worry about it, we've got it all under control and let's raise some lionfish offshore." I have a real problem with that word "naturalized". I am not a geneticist, but something more like a native population or local population or something like that is the right way to go.

MR. PUGLIESE: Just a real quick comment. Ultimately this is a council policy statement; and I think to the degree that we have – we have worked very closely with our state partners; and I think it is really important to take to heart. While I understand where the NOAA policy is, this is the Habitat Environmental Protection Advisory Panel, and I think you really need to keep some of those issues in focus.

I think a lot of statements have couched at the council members. We have three members with us here, can bring forward some of those concerns; but it is going to be up to this group on what you really feel is the recommendation. You've heard the state of Florida; you've heard some of the considerations that were already integrated. I think this was specifically why we wanted to get the other input is to make sure that this is not going to run into issues with other ongoing activities especially at the state level.

MS. GREGG: I guess I am a little bit concerned that it is not very clear how this document is going to be utilized, because like I said if it is meant to inform policy process, yes – I mean, probably both sides should probably be addressed saying there are certain schools of thought that said this way. There are certain schools of thought this way. I am not sure – I don't know; I guess it really is going to be how the document is meant to be utilized.

MR. PUGLIESE: Just quickly; our council has not gone the road yet – it may happen in the future – of the Gulf of Mexico Fishery Management Council in terms of actually having an Aquaculture FMP and being able to, under the individual plans, allow or disallow aquaculture of those species.

I think that in lieu of that, this was one kind of intermediate step to be able to provide this guidance on ongoing activities and potential future activities. That does not preclude the council from ultimately going down those roads. I think that is where we stand. This is something that if things would come up in terms of aquaculture, this is the council's recommendations on where they should be going in federal waters, period, in lieu of actually having the FMP, which, as I said, it is still – you know, the purview of the council has made very clear that you can – and the Gulf Council is already going down that road. That is kind of in the policy world where it is supposed to be more than just an information document.

MS. GREGG: If it would help the situation, I can certainly work with our geneticist to help develop these comments, Mike Tringali who works with the NOAA Aquaculture Program on a regular basis. I can certainly have him work with the authors of this document to see if they can't come up with something.

It may very well be that the authors of the document say, oh, well, I see what you're saying and why it would be fine for the South Atlantic – do you know what I'm saying? If they go back and forth, I think that there can be some discussion there. If you want us to go back and work on that further, I would be happy to do that. Again, like you said, these are the sticking points. They are the points that generate a lot of discussion.

MR. MIKELL: This may be a stupid question. Would it be a sticking point on both sides of Florida?

MS. GREGG: Yes, it is a sticking point on both sides. The Florida rules are the Florida rules and they are statewide. We've advocated just the same exact thing with the Gulf Council. That is how they are doing it.

MR. GEER: I guess I am hung up on this term "naturalized species", because I think of that as like the catfish species that were introduced 100, 150 years ago. They are naturalized. I don't consider lionfish naturalized yet. I guess that is what I am kind of hung up on. When is a species naturalized and do we have any in federal waters? Lionfish is the only one that has come up. I don't know about that; I guess I have a difference of opinion on that term.

MS. GREGG: That is the one thing we do point out in our comment is if you are going to use the term, go ahead and define it and identify what exactly do you mean by a naturalized species?

MR. GEER: Well, there is probably a definition of that out there already; wouldn't there be? Wilson, did you have a question?

DR. LANEY: No, Mr. Chairman, I had a comment. I guess one other species I can think of – and George may want to speak to this one – is orange cup coral; is that considered a naturalized species? That one is pretty widespread and there is concern about it. That is another introduced marine species that is – I guess we would consider that naturalized.

Maybe somebody knows is there a certain minimum amount of time required before something is considered to be naturalized? Lionfish have been around since, what, George, '82 I think in South Florida, anyway. I don't know whether there is a temporal dimension to something becoming naturalized or not.

I thought it had more to do with establishing a breeding population that persists through some period of time; and, again, I have no idea what that period of time might be. That is the only other species I can think of right off the top of my head that is a marine one that is present.

DR. SEDBERRY: I don't know what the definition of naturalized should be either; but the orange cup coral, the Asian green mussel, the Titan acorn barnacle; those are all offshore in federal waters along with lionfish and should be treated the same, I guess. They've been here about the same amount of time in geological terms, anyway.

MR. GEER: But they're also on an invasive species list. Can something be naturalized and also be invasive?

DR. SEDBERRY: Again, I am not sure what the definition of naturalized is. I guess it is whatever we define it as and just make sure we're clear about it.

DR. LANEY: There is a formal process that you go through to get something listed as a nuisance species. That may not be the right term, but there is a federal process that you can go through to get something put on the list. I think the answer, George, is yes, it can be naturalized but then still go through this other administrative process and be considered an undesirable invasive species.

MR. PUGLIESE: I think we're at a point where we're having a debate back and forth on these. It is very clear the intent in terms of trying to be as conservative as possible for conservation from the advisory panel members have made that clear. We do understand that this has some potential conflicts with the existing NOAA policy, but it has a direct conflict with the state in both the east and both sides of the state of Florida, which is something that the council is trying to rectify for other fisheries management issues.

DR. WILBER: We've heard the objection from the state of Florida. What about North Carolina, South Carolina and Georgia, so it caused the same consternation in those other states.

MS. GREGG: I think Mike represented North Carolina, too, at least his aspect of it.

MR. GEER: I would prefer native species. Maybe changing that from native species should be – or something with the word "preferred" instead of "only" might be the way. It is not as strong. It is not as definitive, but I certainly don't want somebody bringing in aquaculture shrimp and trying to raise it on our coastal waters of Georgia. We don't allow it right now.

MS. GREGG: Would getting together some more information help; I mean, trying to figure out how the Gulf Council has dealt with this, how NOAA Aquaculture may potentially be different than the statements we have made, whether or not there are some definitions out there for native and naturalized? Would that help with the process?

MR. PUGLIESE: Yes, I think the position is fairly clear in terms of the two sides. We can actually pull that additional information together and have what the definition of naturalized is from the NOAA Policy and look to the Gulf Council. I think that could be information for the council's deliberation in terms of the next stage of where this goes.

That is going to be a policy call, especially if there is consideration. This is coming back very specifically because of the state concerns of the state of Florida. If we have something that ultimately is going to be in violation of the state of Florida's policy, it is going to get bounced back and forth. We're going to play this game on this.

I think it is fairly clear what the intent from the state of Florida is, the concerns that have been raised by the AP members, how this is integrated or drawn from – at least the original wording from the existing NOAA policy. This moving forward then with what the definition – and truthfully we can do all this and maybe that is something I can run down and we can have the definition of what naturalized species is and look at the Gulf conditions and how they deal with it before this gets – you know, at the end of this AP meeting.

MS. GREGG: Potentially discuss or at least address the issue that Pace raised with regards to NOAA Aquaculture; where do they actually stand? How do they actually feel about this in the South Atlantic Region?

DR. WHITTLE: We're only having a problem with 4, is everyone okay with 5?

MS. GREGG: No, 4 and 5 are both.

DR. WHITTLE: But genetically modified.

MS. GREGG: Oh, yes, we haven't gotten into genetically modified organisms yet.

MR. STREET: Are there any actual examples that we could look at that exist not just in the U.S. but elsewhere? I know, as you said, other countries are far ahead not only in freshwater aquaculture but in marine aquaculture; in pen raising, in moving species around. Bluefin is one of the ones that they catch them small and put them in pens to raise.

Are there some, I don't know, but I think it would be worthwhile to examine some actual cases and see what is done and what good there has been, whatever that means, and what bad there has been, whatever that may mean from such examples. I think some practical experience somewhere I think would well be worth examining.

DR. LANEY: Is it an issue if there are no naturalized species in the South Atlantic that would be appropriate candidates for aquaculture? We've named three species. I know the green mussels are on the west coast; I'm not sure they are on the east coast. Are they on the east coast, too? Okay, so there are three potential species.

But if there aren't – and I don't think any of those are desirable. I won't speak for the states but they may not be desirable aquaculture candidates. If it turns out that there isn't any, I like Lisa's suggestion that if we can come up with a list of those that might fall into that category, then we might be able to address Pace's concern and the council's concern or the advisory panel's concern at the same time. If it turns out there aren't any, then is it still an issue or not? It seems to me if there aren't any, then you don't want to say that you can use them if they don't exist.

MS. GREGG: I think just in working with aquaculture folks in general, it is not necessarily whether or not there exist examples now, but it is whether or not what you're doing or the policy decisions you're making might hamper aquaculture advancement. I think that is primarily what they look at and it is not necessarily if there are examples that exist now. I think they are concerned about their options being limited in the future.

MR. GEER: I guess at this point what we're going to do is try to look at the NOAA Aquaculture and how they address that. We really can't find any examples of what you are saying.

MS. GREGG: Potentially, maybe, I don't know for sure.

MR. GEER: We could talk about this all day; and I don't know if we're going to get any resolution on it. I knew this was going to be a hot topic when we brought it up. What is the opinion of the board? Do you want to basically look at this some more over the next day or so

and maybe readdress it; find some time before the end of the meeting and address this one paragraph? What do you want?

MS. GREGG: Well, again, there were two issues. One was the native versus naturalized and then the second one is the genetically modified organisms.

MR. PUGLIESE: Yes; and I guess to, Pace, is there a problem with the second in Number 5 also? It kind of left it generic enough with that one statement and now this is getting into more specifics that really kind of the state is recommending. I'm not sure it really compromises the original statement.

DR. WILBER: I had some issues with Item 5, too, particularly striking the part that if FDA approved the use of certain genetically modified organisms; the council would still oppose it. I think there are a whole lot of ifs in that to get to that reality. Why we would decide what the position is before we even know what that road is going to look like I think is a bit odd.

The other thing, too, is I might disagree a little bit with Roger that this is more an information document than anything else at this point. I don't think whatever is said or not said in this document is going to constrain an aquaculture proposal anywhere in the South Atlantic. It is going to inform how people look at it; it is going to jumpstart how they look at it.

But how they ultimately comment or approve or deny the application for aquaculture is going to be governed by their own programs, policies and authorities. It is not going to be governed by what is or is not said in this document that the council produces. I think to some point we are spending an awful lot of time working about a purely theoretical problem here as opposed to a practical one. Finding a practical way out of this; a balanced approach is the practical way out.

MS. GREGG: Well, maybe just identifying what you just said is that there potentially may be conflicts with states; and you can allow this or you cannot allow it or you can do this. You can allow native and naturalized based on what was originally said in Number 4 and then provide another option or you can do this. You can use the original language and then provide an "or" with the alternative language. Then say the states may have different approaches.

MR. PUGLIESE: I was reviewing at least some of the background to the Gulf of Mexico, and there was I guess a 2013 Harvard Review of the activities, and it identified that NOAA will only allow culture of native species managed by the council, except shrimp and corals.

It goes into some details about non-native applicants must also certify all native brood stock harvested from or progeny of the same population in the Gulf of Mexico. Applicants must provide hatchery certification to brood stock and tag marked. It is getting to kind of really tracking the genetics and a pretty significant emphasis on native species in the Gulf of Mexico, at least what I'm reading so far.

MS. GREGG: Well, Roger, you said something that brings up an issue. Now, will you guys only have authority over species that are aquacultured that are managed species? Is this only going to apply to managed species? If that is the case, then it is going to have to be native. There is no naturalized managed species.

MR. PUGLIESE: Yes; and I think that is why you have an FMP in the Gulf of Mexico and the FMP is tied to their managed species. Yes; I think in terms of the Gulf's actions; we are not managing the actual actions yet in the South Atlantic.

DR. WILBER: I think Lisa used the word "authority". I don't think that is the right word here. I don't think the council is going to be the permitting agency for offshore aquaculture, right?

MS. GREGG: Well, is it; I don't know.

DR. WILBER: They would be the role of a commenting agency, and they might have some roles like in terms of how the aquaculture facility impacts the act of fishing; but are you guys the ones who actually would approve or deny a permit to establish an offshore pen?

MS. GREGG: I think we do.

DR. WILBER: I don't think the answer to that is yes.

MS. GREGG: I think it is actually.

MR. PUGLIESE: In the Gulf of Mexico, that is the FMP. I think the permitting would be just like fishing permits. Now, our council has not gone that route yet. If they will go – we have not gone to an FMP level.

DR. WILBER: We don't know.

MS. GREGG: Also the issue – the whole goal of the Offshore Aquaculture Act, the federal Act, was to streamline all of the permitting processes into one. I think one of the permitting processes was the councils. I think eventually what NOAA Aquaculture and what they would like to do; the goals are to streamline the permitting process. But I think at this point, I think the councils will be permitting. I am not positive.

MS. COAKLEY: I'm sorry; I'm just a guest so I am not as familiar with your processes here. But in the Gulf, when you had mentioned that in the Gulf the councils are permitting; the council actually has the permitting authority or does it give that authority through the FMP to NOAA/ NMFS to issue those permits? That is where I think we're getting confused.

The councils were neither the implementing agency nor the enforcement agencies. It is still going to go up the chain to NOAA/NMFS in order to do it. The FMP is that guidance document that informs how the regulations are written, but NMFS is ultimately dealing with issuing those. I don't know of any council that has that authority.

MS. GREGG: I think you're right. If you look at just like charter permits and for-hire permits or commercial permits; they all are identified through the FMPs, but they're not issued by the council.

MS. COAKLEY: Can I just make one quick comment on Number 5 while I have my microphone on? Again, I am not a member of the committee. I guess in reading this – and I guess it was Pace who had commented on sort of simplifying some of the language in here – I

think it highlights that you've anchored your action either pending FDA approval, that agency; but you may ultimately be dealing with NOAA/NMFS or another entity that is dealing with approval of these processes.

That isn't either clearly laid out or known at this point. It also says following a rigorous and documented biological assessment. That comes with a definitive conclusion that there is no possibility for genetic exchange, so it is very unclear to me here who does the biological assessment. Is this like a willy-nilly, anyone can come forward with a documented biological assessment?

It is a lot of detail in there that isn't very tight in terms of what that expectation is. Sometimes it is better to leave some of those things out. It could be stating that the South Atlantic thinks that only genetically modified organisms should be used after a rigorous and thorough examination by the permitting agency. It could be shortened and simplified in a way that doesn't leave those loose ends out there. Again, it is just me.

MS. GREGG: Actually it is deferring to the FDA, because that was the original language was FDA approval. We just expanded upon that.

MS. COAKLEY: That last comment, the no possibility for genetic exchange, I've never seen a biological assessment that has ever been that definitive. They usually say it is unlikely; it is science, you are never going to get anything that definitive, so maybe loosening that language up a bit. The council doesn't want to bind itself up with its own policies if in fact at some point it supports something that conflicts with it.

MR. GIBSON: It just occurred to me there could be a huge loophole here. What about fisheries that have no fishery management plan? What if something like pinfish that have a really high quality of oil; somebody in the late seventies tried to make fish oil out of them. Here is arguably the most important bait fish in the South Atlantic.

It goes offshore in large spawning aggregations, feeds all the groupers. Then all the babies come in the spring and feed all our inshore fish. What happens if somebody wants to stick a pinfish pen out there and he is using genetically modified pinfish? They grow really fast and eat less; how do we manage that?

MR. PUGLIESE: Terry, when I stated only council-managed species; that is specifically with regard to the Gulf of Mexico's management plan. They basically preclude – if I'm reading this right, they preclude any other non-managed species from getting aquaculture permits. At least that is the way it is written.

MS. GREGG: It is; and I think that may have been based on General Counsel's opinion. Terry, just to address what you were saying; if that was to occur outside of Florida, then it would be a situation of whoever would be the permitting entity, whether it was the Corps or the – well, the EPA would probably have to permit it through NPDES.

Again, that would go through a consistency review; and in that situation Florida would identify the activity of whether or not it was consistent with Florida's regulations. At least in Florida, if

that was occurring outside of Florida, that would be addressed. I'm not sure how other states are set up.

MR. GIBSON: Let me get this straight. If Florida objected to it, they couldn't land them in the state water; they couldn't bring them into state waters?

MS. GREGG: Well, it is kind of a more complicated process than yes or no. Technically when it comes to any activity that is federally authorized, federally permitted or federally funded; they have to go through what is called a consistency review through a state's coastal management program. That is pursuant to the Coastal Zone Management Act.

Now every state; their programs are all individual, and whether or not they have authorities or regulations included in their state's program that might address the issues that are being – you know, like in this situation Florida does have regulations with regards to genetics and health and even aquaculture – we have aquaculture BMPs – that would address the use of non-natives and/or GMOs.

We do have the ability to extend that out into federal waters when those activities in federal waters might have the potential to affect Florida's stocks. We can definitely show the linkage there for that. I can't say that is the same for other states. I don't know how their states are set up.

MS. WENDT: This might be nitpicky, but the use of the world "shall" in Number 5 is sort of inconsistent with the other recommendations which are stated as "should". It seems to me that a policy document that doesn't have the force of law or regulatory requirement; that "should" would be more appropriate.

MR. GEER: Anything else on Number 5? We spent a lot of time on these two, and I knew that was going to happen. We spent close to an hour on that and we've got three minutes to finish.

MS. GREGG: I think everything else from here is – again, we made some comments; some of them we did address and some of them we didn't address in all of these. I think beyond that was Page 23 Appendix C.

MR. STREET: What are we going to do with Number 4 and 5 then? Are we going to leave them in abeyance to see if some people can get additional information and hold them off?

MR. GEER: I believe that is what we decided to do. We did some wordsmithing and we're going to look at it a little bit more and hopefully be able to come to some definitive statements by the end of the meeting. Is that what everyone else thought?

MR. PUGLIESE: Yes; I had already followed up some on what the Gulf's position was as one of the aspects. The other thing is to find out what NOAA's definition of naturalized species is and if there is any way to find out if it really applies to our region. We're getting really close.

MR. GEER: It is kind of a placeholder right now, I would assume. Does anybody want to add anything else to this right now? We've got a little bit of homework to do on these two.

MS. WENDT: Another nitpicky thing; "shall" also appears in the first line of Number 5.

MR. PUGLIESE: Specifically with regard to the whole thing about no, one last point, the inclusion of saying no possibility of genetic exchange; is that something that is very specific? Do they very specifically say no exchange at the state level?

MS. GREGG: I think even Mike would agree, no reasonable. I think he used the same wording before, you know, when there exists a reasonable opportunity for escapement and disbursal in waters of the state for which their culture and commerce are prohibited by policy.

MR. STREET: I was going to suggest minimal.

MS. GREGG: Well, minimal is less restrictive if that is what you were looking for.

MR. STREET: I'm looking for the most restrictive.

MS. GREGG: Well, then reasonable is better, because minimal still does allow some amount.

MR. GEER: Any other comments on this? Anymore "shall" that should be "should"? Thank you, Priscilla. Moving on.

MS. GREGG: Page 23, Appendix C. I think a lot of this stuff can be addressed by the authors, because this is all should you use bacterial slime versus biofilm. What is the FFDCA definition of drugs? Are these considered drugs? Are these definitions from FFDCA? We bring up the issue again about antifouling agents.

A statement that we think is redundant that is already stated above. One of the comments that we made in the other document – it wasn't included in here – was that perhaps in Appendix C that we should also – because it talks about the approved and conditionally approved drugs for use in marine aquaculture; and you've got active ingredients, trade names, indications.

But a big piece of information that is very applicable to this is also labeling specifications, because things can't be used extra labeled. As far as I know, there is maybe only one or two drugs that are actually labeled for use in a net pen. I think maybe one, and it may even be restricted to inshore net pens.

Then the other issue is, too, the IMAD approvals. That should probably be in as part of that appendix also, because there are some drugs that are conditionally approved or being tested at this point that are under some strict conditions that are being used, also. All of that is identified in that other document where we said what things were addressed and not addressed and partially addressed; that kind of thing. You can pull those out. Exactly, give it back to the authors to let them deal with those. I think that is really about it.

MR. GEER: Are there any other comments? I see people shaking their head. We're going to go ahead and clean up 4 and 5.

MS. HILFER: On Page 21, Appendix A; list of potentially affected species currently identified; in going through that list, you just sort of start very specifically. Then like the last one is federal

or state-protected species; but why are they singling out summer flounder, bluefish, and red drum and then grouping the others so generally? I mean you don't have sea trout; you don't have a lot of things in there.

MR. GREGG: I think it is based on their fishery management plan, right?

DR. WILBER: That list needs to be edited. It has species that are no longer managed by the council and it has species managed by our neighboring council from the Mid-Atlantic and not by the South Atlantic. We need to police this list, but it is just editorial things.

MS. HILFER: Yes, and it is just like the last thing – then it just throws in federal or state-protected species like everybody.

MR. PUGLIESE: Yes, this is carryover from some of the old policy where it didn't pull in the most recent species' list and that was something that we were going to get done.

MR. GEER: I think that is going to be a factor in all of these policy statements, because they all have similar lists like this. We may have to do a lot of editing on those. All right, last chance. We are going to do a little bit of homework and wordsmithing on Items 4 and 5, on the type of species and the genetic information as well.

We'll provide that by the end of the meeting. Are there any other comments? Okay, great, moving on. We were only a few minutes behind on that one. Good job catching up. The next policy statement is going to be on SAVs; is that right? You can bring that up. I know there are some comments again by Florida as well.

DR. WHITTLE: It is only one comment, and it goes back to where is water quantity addressed; because when we had done it, we put it in there and then you said you would put it in in-stream flows, and then it didn't really make it in there, so just where – it is addressed just a little bit I think in each policy.

MR. GEER: For those of you following along on your computers, it is Attachment 4B. Okay, Amber, what were your comments again? It was just a couple of them?

DR. WHITTLE: It is actually related to in-stream flows. It is related to Alice's and not the SAV one.

AP MEMBER: Yes, on the agenda it has got in-stream flow as Attachment 4. It is actually Attachment 2, and then the SAV is Attachment 4.

MR. GEER: Roger just informed me we're doing both.

DR. WHITTLE: For 4B, the Florida comments were the FWC is unclear why this policy, meaning the in-stream flow policy, excludes any discussion of SAVs. We suspect it might be because there is a separate SAV policy, but the separate SAV policy does not fully address the water-flow issue.

The FWC recommends this water-flow policy be amended to generally incorporate SAV into the multiple discussions and perhaps refer to the SAV policy for more in-depth discussion. The SAV policy on Page 4 under – I'll just read it to you; it is where the bullet starts – the South Atlantic Fisheries Management Council supports efforts to; and then you go down.

When you go down, it says evaluate water quality criteria needed to support SAV survival and growth and support policymaking to manage quality and quantity of surface runoff. That was our idea on SAVs. Then I think, Alice, we went back and forth with that one statement if you want to address that. Then we can see if we need to expand either one.

MS. LAWRENCE: Yes, I know; we presented the draft In-Stream Flow Policy Statement in November. Then one comment – I guess this kind of goes along with what you are saying, Amber, is you wanted to make sure that the in-stream flow policy encapsulated freshwater in-flow issues. We did have some conversations back and forth, and we ended up just leaving it very broad and general in the in-stream flow statement; not specifically dealing with SAV the way it is written right now.

MR. PUGLIESE: The original flow policy that was finalized and then brought back to the council that we're referring to is actually embedded in that first bundle that is under Attachment 3A and 3B. The in-stream is embedded there; then Attachment 4 is the SAV. We're kind of going back and forth with regard to those two.

DR. WHITTLE: Right; the original discussion we had basically was that in-stream flow as it relates to SAV would be included in the in-stream flow policy; and it would be duplicative to expand on it too much in the SAV policy. It was mentioned but not expanded upon. Then if I am remembering this correctly, Alice, you guys decided you weren't going to deal with estuarine effects in your in-stream flow. That was going to be more related to actually habitat in the stream. Is that correct; am I remembering that?

MS. LAWRENCE: I'll look at the e-mail right now while you are talking.

MR. PUGLIESE: Also while she's looking; I think the SAV policy that is presented here also did have some final revisions since that time. This is the version that you had supplied after, I guess, the November meeting and even after what was bundled in that first package. The SAV was the most updated one.

DR. WHITTLE: Ours didn't have too many revisions, the SAV.

MR. PUGLIESE: There were just some tweaks afterwards you all had done; but this was the most recent one that is available.

MR. GIBSON: This may be a little nitpicky, but can you go straight all the way back up to the top? It says something about Florida and North Carolina having ideal conditions. United States SAVs found primarily in the states of Florida, North Carolina, where environmental conditions are ideal for their propagation.

I beg to differ; there is no seagrass in the Indian River Lagoon anymore. There is no seagrass or very little in the Caloosahatchee. It seems to me that if we're getting at how to improve the

situation; there needs to be a tense change there; "were once" or "formerly". We need to get back to the future and not act like everything is okay right now because it isn't.

DR. WHITTLE: It depends on where you are. On the west coast, other than the Caloosahatchee, like Sarasota Bay there is more seagrass than there was in 1950. In Indian River Lagoon before the last three years, there is also more there than there had ever been before. The condition – if it wasn't ever there before like in South Carolina and Georgia, you won't ever get it. We can certainly change the word "ideal", because that is a little idealistic.

MR. GIBSON: That is the word that I edit out of everything that my partner writes and every fishing magazine story says the ideal rod for this, the ideal rod for that. There is nothing ideal; it is life. I assume we're on a net loss situation with grass statewide, I assume. It just struck me as a little not reflective.

MR. GEER: Terry, what about just putting the word Florida and North Carolina where natural environmental conditions are ideal.

MR. PUGLIESE: Truthfully, this was really getting to the fact that those were the only two states that supported it. It gets to the idea that in those states you have like that is the habitat that is functioning for settlement of gag versus oyster and other habitats in South Carolina and Georgia.

DR. WHITTLE: I would say where environmental conditions support their propagation.

DR. WILBER: I would get more to the point, which is what Roger was saying is that the purpose of that statement is to explain why that section doesn't discuss South Carolina and Georgia. Why not get to that point in the first sentence there and say in the South Atlantic Region SAV is found primarily in the states of Florida and North Carolina, where environmental conditions are more favorable than in South Carolina and Georgia. Then you don't have to worry about ideal and the natural and all that other kind of stuff, but you're getting right to the point as to why we're talking about North Carolina and Florida.

MR. GEER: Where conditions are more favorable than in South Carolina and Georgia for their propagation – oh, more favorable than in South Carolina and Georgia, period, and then delete "propagation".

MR. STREET: The first sentence; the first line says is found primarily in the states of Florida and North Carolina. That suggests that some is found in South Carolina and Georgia.

DR. WHITTLE: The freshwater SAV is.

MR. STREET: Okay.

DR. WILBER: There are some people who alleged to see ruppia in the bays here in Charleston; so that is where that comes from.

DR. LANEY: Dr. Wilber is referring to me. I have actually seen ruppia growing off a certain dock near Charleston Harbor, so there is some; but I think generally speaking there are tiny amounts of it, probably. Is that acceptable to you, Dr. Wilber, if I say tiny amounts?

MS. LAWRENCE: I don't know; I know this is kind of complicated. I'm on the in-stream flow when we're talking about this right now. The way that it is right now, it is listed as riverine, estuarine and nearshore flows. I think during our discussion at the November meeting, Pace had suggested including a sentence saying that changes to freshwater in-flow were not a focus of the policy statement.

We had talked about this, Amber and the rest of us. I had initially included a statement like that and then I think it kind of conflicted with what Amber was looking for. I took that sentence out again. It is just broad riverine, estuarine, flows. There is nothing in there specifically to SAV, the way it is written now.

DR. WHITTLE: Could we just put in a reference to SAV and how water quantity affects SAV?

MS. LAWRENCE: Can you review what I put in or can you help with this, because I am not a vegetation person.

MR. GEER: We're kind of jumping around a little bit at this point. Can we get Mike's concern about the word "primary" taken care of? Are you okay with "primary"?

MR. STREET: Yes.

MR. GEER: That statement is okay. Pace, was it you who brought this up originally; you wanted the terms South Carolina and Georgia?

DR. WILBER: It was me, but that is fine.

MR. GEER: That's okay, Terry?

MR. GIBSON: Yes.

MS. YUEN: I have a few questions about the second bullet under planning, if you can pull it up, in the SAV document. The regulatory definition of SAV habitat; is this supposed to be the official definition of that term? It just says a shallow water habitat with appropriate sediment, depth, light penetration and wave energy.

I feel like it should say necessary for seagrass growth, just to mention it; because the very beginning of the document defined SAV habitat with seagrass in the term. Then the second part of that, including areas without existing SAV, I was wondering if that was intended to mean historically existing SAV is for restoration purposes; just to clarify that.

DR. WHITTLE: That is from North Carolina, and what it is; it is regulated differently between Florida and North Carolina in that they regulate a patch if it has ever been there before or could be there. I don't even know that you don't even necessarily have to have had documented that in

the past it was there, but if it has the right conditions that it could be there. Is that right, Mike? This is Anne's.

MR. STREET: Yes.

DR. WHITTLE: Historical might even be limiting.

MR. STREET: The definitions that you gave applied several years ago when I was still there; there may have been some changes. There have been changes in a lot of things in North Carolina in the last four or five years; but back then it was quite an inclusive definition.

DR. WHITTLE: Well, Anne is my co-author on this and she hasn't changed it yet.

MR. PRATT: I can't address all of North Carolina SAV because I don't fish the whole state; but I can address the northeastern corner; and that is the Albemarle system in the northern part of the Pamlico. In that area I have fished for 50 years. I fished when I first started in no vegetation to now almost complete coverage of vegetation. It is not decreasing.

I did some work with Bill Hassler in the seventies and eighties on striped bass and shad and herring. His finding was that shad and herring and probably striped bass prefer a clean, sandy bottom as a juvenile fish. That is in a contour less than 4 feet to about 2 feet. Now that contour is completely vegetated, so that juvenile fish doesn't have his original habitat. I would be very careful in promulgating a policy that dictates we make habitat what it was not originally.

MR. GEER: Are there any other comments on the SAV policy? None whatsoever? It was pretty clean; you did a good job on it. I guess we can move back to the stream flow, and it is embedded so we will have to find it again.

MS. LAWRENCE: What I sent you all in January is 2B.

MR. GEER: We wanted to add in one of the sections. Was it under policy about SAV; is that where that was?

DR. WHITTLE: Alice and I agreed to work together to come up with just a statement probably under 4; hydrologic alterations have caused impact to a variety of habitats and just specifically call out SAVs and refer to the SAV policy. We can probably work on that and get the wording back to you before the end of the meeting.

MR. GEER: It is getting close to break. Are there any other comments on this policy for the alterations to flow? Not hearing any, everybody is okay with it with Amber and Alice creating that one change, and they will get it to us? Okay, we are scheduled for break at 3:30. Why don't we take it now and come back at 3:30?

MR. GEER: If everybody can get back to their seats, we will move on and finish up for the day. We have three more policy statements to complete today. The estuarine invasive, the offshore invasives and dredging impacts. I believe what we're going to try to do – and it hasn't been done yet; but instead of having an estuarine and an offshore invasive, Roger's suggestion was that we combine those two together. I think we talked about that at the last meeting.

A lot of the material is the same on both of them; it is just the species we're talking about. Eventually this is just going to be a Non-Native Invasive Species Policy Plan instead of one for inshore and one for offshore. I think we talked about that before.

I don't think anybody had any problems with that; it kind of made sense. I guess what we'll do on this; are there any major comments on this that anybody wants to address at this point? Priscilla, you took the lead on these, I believe?

MS. WENDT: Yes.

MR. PUGLIESE: Look at the Word version versus the PDF. The PDF is probably just the statement. PDFs are statements, because that is what is getting posted actually to the website, and the markups are on the Word documents so we can work with them.

MR. GEER: I've got them as Documents 5A and 6A, for the estuarine and offshore invasives.

MR. PUGLIESE: The B's are actually the Word versions.

MS. WENDT: The first edit is on the third page down under "Threats from Invasive Estuarine Organisms"; I think, Pat, you had a suggestion that I added in there regarding the parasitic nematode that either infests or infects. I'm not sure what is the right term here?

MR. GEER: Good point; I think it is an infestation of the swim water.

MS. WENDT: Okay, infestation, so we should change that back.

MR. GEER: Thank you for finding that the genus had changed; I didn't know that. I thought you had spelled it wrong and then I looked it up and low and behold it had changed.

MS. WENDT: I just added in a sentence there about how the parasite affects the species. Then on the following page we added in – under the list of invasive species, we added in lionfish, which appeared in the Marine Invasive Species Policy, but had not been included in the Estuarine Policy Statement.

I guess it was not until fairly recently that they've been found in estuarine waters. That was added in there and the Asian tiger shrimp, Penaeus monodon, was also added in. Then we added in a reference to the ASMFC document regarding the eels. I added in a reference to Knott et al regarding the Asian tiger shrimp.

MR. GEER: There is another one that just came out on tiger shrimp that just came out this week. I will get that for you. It is a cooperation between all the states.

MS. WENDT: All right. Let's see, there is another reference on lionfish further down, Schofield et al. That was it. I don't think there were – I don't recall any changes to the Marine Invasive Species Policy Statement. The only thing I guess left to do is to combine the two. I think a lot of the language is the same.

MR. PUGLIESE: After going through that, I know we had discussed that, and then I really realized that basically the full policy recommendations; you have actually updated and refined them in the estuarine that were transferred directly. What we need to do is just kind of wordsmith the front, connect those in, and identify it as a combination of the marine and estuarine and add in some of the text that may reference some of the other marine. By adding lionfish in there you kind of captured most of it the discussion.

MR. GEER: I kind of have one general statement overall. When you are describing these invasives, for some of them the name infers where it originated, but for other ones we don't have that. Would it be beneficial to have four or five words saying where they are indigenous to? I guess I am asking the entire panel what they think about that.

For instance, the green porcelain crab, it doesn't say where it is from or where they think it originated from. That may be of some interest or concern or whatever. I don't know; is it important to know where these organisms originated from, what area of the world? Some of the names kind of infer that. Some of them don't, though.

AP MEMBER: I think it is of interest. I don't know if it is necessary.

MR. GEER: It is unnecessary.

MS. WENDT: Is that information readily available do you think in the literature?

MR. GEER: I would hope so.

DR. LANEY: I was trying to think of a reason that information would be useful. This may be somewhat out in left field, but I know there are cases where organisms have been introduced one place or another. Then at some point, years later they get wiped out in their native habitat. Countries have actually come to places where they were introduced to try and secure stock to reintroduce them back to where they were originally wiped out in their native habitats originally.

Maybe from that perspective if we know the origin of some of these species, it might be useful to have that information in the document, I don't know, just to kind of document the genetic source material from which the introduced populations originated in case anybody needs to know that for any purpose in the future.

That is the only reason I can think of that it might be useful. I agree with Amber, it is interesting to know. I think the public might be interested in knowing where these things came from. I would just say if we're going to do it for part of them, we ought to do it for all of them just to be consistent, I guess.

AP MEMBER: I just noted going through the list that for many of the species we actually list what potential threat they propose to the environment, but for some others we don't; such as 9 and 10, the green porcelain crab and the spiny hands crab. It just mentions where they are found but it doesn't say what kind of threat they pose. I don't know if that is something we want to go back and elaborate on or add.

MR. GEER: Is that because we don't know?

MS. WENDT: I don't know. I can go back and look and see if there is some information on that.

AP MEMBER: That would beg the other question. If we don't know that they pose a threat, should we still include them?

MR. GEER: They are still an invasive.

AP MEMBER: They are, but at the top we're discussing threats. The list of the section is threats from invasive estuarine organisms.

MR. GEER: That is why we need to finish these policy statements, because the more we talk about them the more we add.

MS. WENDT: I'll look and see what information is available on each of those species regarding particular threats.

MR. GEER: My comment about origin was basically just for interest wanting to know. Roger said half the species you can infer it by their name; the other half we don't know. I would think eventually someone would ask where did it come from; how did it get here? I think if you know where it is from, you can probably infer how it got here; was it ballast water or was it some introduction by aquarium trade or something like that maybe. It is up to the panel. I just threw that out as a thought.

MS. WENDT: I'll look into that, too, but I'm not sure it is going to be that cut and dried. I'm not sure that the source for the invasion is necessarily known.

MR. GEER: Really in a lot of cases, like for tiger shrimp you are really just shooting in the dark and you are taking a guess at it; but knowing where that organism originated from might be of use.

DR. LANEY: Again, Priscilla, probably the only way we would know that is if somebody has done some genetic work on it and they can trace it back to the source population based on the DNA.

MR. PUGLIESE: I think what Pat really was just getting at it is kind of the origin of what country or what part of the world is it coming from. You ought to be able to go to fish page or fish or some of these other ones that quickly identify its natural occurrence and basically put the name. I think that is all this is going to be there.

Then those couple threats I think is going to be key to add in. I think those may be fairly straightforward to be able to just list the general threat to habitat or species is. They've been raised enough times before that also ought to be something fairly straightforward to add in. Those two things can shore up that whole list.

MR. GEER: All right, so we are going to combine these two. A lot of them are the same, so we are just going to put them as one.

AP MEMBER: I have a question for Priscilla. At the risk of showing my ignorance; in the last sentence that says the extent to which tiger shrimp are transmitting viral diseases, blah, blah, blah; I am assuming that they are not bacterial pathogens that normally affect shrimp; that only viral diseases have been reported in shrimp; is that where that comes from?

MS. WENDT: I don't know, quite honestly, where that comes from. I would think that bacterial diseases are a possibility as well.

AP MEMBER: Maybe infectious diseases might be more general?

MS. WENDT: Yes; that is probably more accurate.

MR. GEER: Okay, anything else on these two? All right, so we're going to combine them as one and we can move on. The next one is effects on EFH from beach dredging and filling and large-scale coastal engineering. Roger is getting that up now.

MR. PUGLIESE: Priscilla just provided the most recent update. I didn't get a chance to distribute it out, but we have it right here. The original version I think is included in that collapsed packet. This is the most recent.

MR. GEER: This is Attachment 7A. Well, the newest one we just got; it is hot off the presses.

MS. WENDT: I just highlighted that related large-scale coastal engineering projects, because all the policy really addresses is beach dredge-and-fill, otherwise sometimes called beach nourishment. It doesn't really address things like beach scraping. I think we agreed not to include sea walls, groins, jetties and other structures in this policy statement. I was not sure whether we wanted to include beach scraping or not as a separate sort of engineering technique. I guess that is a question for the panel, whether they think we should address that or not specifically.

AP MEMBER: What is it exactly?

MR. GEER: That was my question, too.

MS. WENDT: Basically it is just getting some kind of heavy equipment out there on the beach and scraping up sand from I guess a nearshore shoal or just from the lower part of the beach and piling it up on the upper end of the beach. There is probably a better definition than that.

MR. PRATT: That is pretty good; from the high-water mark down, below the high-water mark.

MR. GEER: What is your pleasure? Should it be included as a separate item?

MR. STREET: It is not large scale. It is generally done on a very local basis. Although through an emergency permit after a hurricane or something, it may encompass several miles of beach all in one municipality; but it is still pretty small scale and generally temporary, emergency type thing, so-called. Of course, it does have an effect on the organisms living in that sand that is

scraped; but it is not a big engineering project with all kind of plans and a lot of permits and lots of public review and things like that. It is quite different in that sense.

MR. PUGLIESE: I guess that is a question I had is basically what we're talking about are things that are usually done on emergency basis after storms.

DR. WILBER: Roger, what Mike said is definitely my experience in North Carolina; but in South Carolina it is the opposite. Isle of Palms, you know, it is a 150,000 cubic yard scraping project. They do call it an emergency, but everybody has used the word emergency in a different way. It is a different scale in South Carolina than what is the normal practice up in North Carolina. Honestly, I don't know of a time when it has been done in Georgia or Florida. Maybe those folks would know better.

DR. WHITTLE: Patricia, is it a concern in South Carolina?

AP MEMBER: It does seem to happen more frequently and does seem to generate a lot more controversy and regulatory loopholes or hoops that people have to jump through to do.

DR. WHITTLE: Well, if it is important to South Carolina, include it.

MR. GEER: I'm fine with that; is anybody opposed to it?

MR. PARKER: I think years ago on Hilton Head when they started doing these things, they would do it with what they call pan scrapers and remove it from here and take it over to where it would get a scarp on the beach and it might be a mile long, maybe two miles long.

But in recent years, the town government – and I guess they had done four or five beach renourishment projects now, which they call it dredge-and-fill. They will call in a big dredge company and do a lot of beach, maybe – well, the beach is 11 miles long approximately. It might be five or six miles along say the south end.

Recently they had to do up at the heel of the northeast corner, which are spots where it normally gets eroded away through the years. It is kind of a cycle, but they now realize they have to do this every four or five years in certain places. That is done with big dredges. Offshore they pump this heavy-grained sand; it is a little heavier than the beach sand. They pump it from a mile or two offshore into the beach and then bulldozers spread it around. That is the method that they use right regular.

MR. GEER: Well, we'll include it then.

MS. WENDT: Okay; and I'll look at the rest of the language in the policy to see if -- I think the threats to the beach habitat are essentially the same; but I'll see if there is anything else that needs to be modified.

MR. PARKER: I think it is mainly a threat to the tourist trade.

MS. WENDT: Right, and people's private homes.

MR. PARKER: In Georgia, most of their islands – I'm sure there are plenty of Georgia people here – are protected. Tyebee I believe is the only one that has a beach renourishment occasionally. I can't tell; maybe St. Simons.
MS. WENDT: Further down on the next page; the original statement was there has been little or no consideration of the hundreds of other species affected many with direct fishery value. It seems to me there are a number of studies that have addressed other species, mostly benthic in fauna, and more often on the beach as opposed to in the dredged areas.

A lot of that literature is not peer reviewed; it doesn't appear in the white literature; but it just seemed a little bit of a misstatement to say little or no consideration. I said less emphasis has been placed. I don't know where the hundreds of other species came from, but that is sort of not a very scientific way to state that.

I don't know whether there is – there are very few literature citations in this particular policy statement, a lot of broad statements. I don't really have a problem with that. The list of references at the end is just that; it is a list of references, but they are not specifically cited in the text. I don't know whether people have any objection to that.

I don't know what the source is or the original primary source is for some of these statements since I didn't write the original policy. In Item Number 4 there; opportunities to avoid or minimize impacts of beach dredge-and-fill activities on fishery resources; I changed offsets to mitigation for unavoidable impacts. If anybody has a problem with any of these word changes, let me know. Number 5.

DR. WILBER: In mitigation here, do we mean the sequential mitigation process, avoidance minimization, compensation, or do we mean compensatory mitigation?

MS. WENDT: Yes; it would be compensatory mitigation I guess in that case, because we say avoid or minimize first and then we could add in compensatory there. We talk about compensatory mitigation further on, but you could add it in there.

AP MEMBER: I have a comment. Actually Pace brings up a good point there. This is actually an issue we get into all the time with coastal construction projects. When the states are talking, when they usually use the term mitigation, they are usually talking about mitigation; just compensatory mitigation.

But usually on the federal level, like with the Army Corps or with NOAA and whatnot; when they talk about mitigation, they are talking about the all-encompassing process of avoidance minimization and compensatory mitigation. A lot of times when I've worked on documents that are a combination between state and federal; what I like to do is I like to put a definition in. If you use the word mitigation throughout, use it by the – you know, we define the term mitigation is compensatory mitigation or mitigation is the all-encompassing process. It might just help to throw a definition in there at some point in time.

MS. WENDT: Compensatory mitigation is referred to later on. There is no section where there is a definitions section, so I was trying to figure out how to just incorporate it into the statement.

DR. WILBER: By beach; is this including the borrow area in this statement or is it just the fill area?

MS. WENDT: I think it refers to both.

DR. WILBER: Okay, so there are plenty of compensatory mitigation projects targeted at the borrow areas for beach nourishment, especially in Florida. I only know of one compensatory mitigation project targeting the fill area for a beach nourishment project, and that was in North Carolina when they grew donax in hatcheries and sprinkled them out on the nourished beach; which I thought was pretty cool. If we're going to talk about – I'm sort of losing context of where this bullet fits in relationship to all the subheadings and stuff. If this includes the borrow areas, there are lots of borrow area mitigation.

MS. WENDT: Are you suggesting that the language needs to be changed there or something needs to be added in regarding that?

DR. WILBER: Yes, I just don't know exactly what to propose; but we would need to put in like maybe a note to clarify borrow areas or something and work on that offline.

MR. STREET: I have a problem with the term "borrow areas". I know the Corps uses it, but they are mine sites; because borrow means to take and then put back; and it is the intention of putting back. Mining means you take it and that is what these are, they are mines. They are open pit mines.

MS. WENDT: I tried to be careful about not using that word.

MR. STREET: The ASMFC report from around 2000 or so, 1990's, somewhere in there, says mines. That is because that is how I edited it.

MS. WENDT: Right, and that was a very helpful document; 2002.

MR. GIBSON: Yes; those advertising geniuses have now taken to calling them donor sites. They recently dredged up the spawning aggregation site for all of our clupeids off of Stuart, and I politely pointed out that they might as well have borrowed one of my kidneys without asking me for one.

MS. WENDT: Okay, so where are we?

MR. GEER: We're going to work on Number 4 offline and just clean up the language.

DR. LANEY: Priscilla, if you need that ASMFC document, it is online; but I also have it on my hard drive here.

MS. WENDT: I've got it, thanks. Number 5, I just added these are the habitats likely to be impacted; waters and benthic habitats in and near the dredging sites. I added in "and". Letter C, waters and benthic habitats "in and near the fill sites" rather than "or". Number 6, underwater; if I am misinterpreting something that was originally intended in the policy statement, let me know, but subtitle seemed more appropriate unless there is some other meaning of underwater that I am

not familiar with. Onshore, it seemed to me that should be nearshore rather than onshore. Worm reefs, they are subtitle, too, I believe.

DR. LANEY: Roger, could you back that up to that species list; Pace, looking back to C –

MS. WENDT: Red drum needs to be deleted?

DR. LANEY: Well, yes, red drum is not an EFH species for the South Atlantic Council. It still is for the Gulf Council but not for the South Atlantic.

MR. GEER: This goes back to the list we talked about before, though, we have to update all of them. I think it is virtually the same thing.

MR. PUGLIESE: Well, one consideration, though, I think that it is going to go back and forth between – because it was specifically to try to capture some of the other managed species in our region. That is why I was saying at that introduction, because it talks about the South Atlantic Council and Mid-Atlantic Council managed species, to capture summer flounder and bluefish. The bottom line is we need to make these consistent and update it to the most recent.

MS. WENDT: Should we delete that or leave it in?

MR. WATTERSON: I was just going to point out for the intro paragraph under Number 7, also you might want to put in there National Marine Fisheries Service or NOAA, because they designate EFH and HAPC for highly migratory species within the South Atlantic.

AP MEMBER: Again, this list, because it was on the old one; for the record I think it needs to be worked on to take out specific – matched up with the general definitions of the pelagics. Anyway, you said you are going to work on the list to get it together. It is virtually the same as before. You're leaving out some of the fish and lumping them in large groups and then taking a few of these out individually.

MR. GEER: This list is pretty similar. Is it the same list in all these for the most part? Do you want to just bang these out right now or do you want to just have us do this offline?

MS. WENDT: Offline. Will somebody send out the definitive list so we can all be consistent?

MR. GEER: Yes. We're finished with that; no one has any problems adding NMFS for the highly migratory species.

MR. PUGLIESE: Carter was just making a point the way we have it stated in here on the descriptive section, it talks about the South Atlantic Council as well as Mid-Atlantic Council and now National Marine Fisheries Service; and when we say the Mid-Atlantic Council in the case of North Carolina, it includes –

MR. WATTERSON: I mean the Mid-Atlantic Council, particularly in the case of summer flounder habitat areas of particular concern; they've actually designated seagrass all the way down to Florida. It is kind of misleading just to say Mid-Atlantic Council in the case of North Carolina, because they have designated a lot further than that.

DR. WILBER: Delete "as well as the" and just have Mid-Atlantic Fishery Management Council and National Marine Fisheries Service. Delete "as well as the" so it is just a simple list. While we're at this level of nitpicking text, are we ready to shed the label EFH-HAPC and to simply live with HAPC, because all of the Coral HAPCs have now been designated as EFH-HAPCs, and we don't need to continue to promulgate that confusion.

MR. PUGLIESE: The problem with that is if we do not make that distinction; those are two distinct and separate aspects of. One is regulatory and one is very specific to EFH-HAPCs and EFH. I understand with the way we have done that; but it has to be done as we go through on any other Coral HAPC.

DR. WILBER: I understand, but that distinction I think at this point in time only matters for the council's management of bottom-disturbing fishing activities, because that is really where there still remains a separate Coral HAPC authority that the council can exercise. Right now all the other things that we used to call Coral HAPCs, because of CE-BA 2 are now EFH-HAPCs.

I don't think we are off designating new Coral HAPCs without also making them EFH-HAPCs. Again, this distinction matters to a very small audience. I think by kind of putting in this language in a lot of other documents, we do cause some confusion. I won't say anything more.

AP MEMBER: Do we want to take it to the level of HMS Management Division? Does it matter? I mean, you were just very specific with everything else. I didn't know if it mattered.

DR. WILBER: You need to stick with National Marie Fisheries Service, because that is where the designation of authority lies. The head of the HMS Division does not have the authority to designate HAPCs or EFH; it is a higher level authority.

MS. YUEN: It still says HMS after National Marine Fisheries Service in the parentheses.

MR. PUGLIESE: But that is what this is tied – that is why this is being put in here – it is tied to a specific designation for HMS species. That is why it is in this list. The South Atlantic Council designates and the Mid-Atlantic Council designates for their managed species.

MS. WENDT: Is highly migratory species used anywhere previously in the policy statement? If not, we need to spell it out.

MR. GEER: Any other comments on this? Moving on.

MS. WENDT: Moving down to the end of Number 7, I just added in a couple words there. The original statement was critical prey base or killed or directly affected. I would say being killed is pretty directly affected. I just said are killed or otherwise directly or indirectly affected by large dredge-and-fill projects. Scrolling down to Number 11; this was one statement that seemed to really need a literature citation. I'm not sure where this came from; recent work by scientists in East Florida has documented important habitat values for nearshore hard-bottom habitats.

MR. PUGLIESE: I think this is Ken Lindeman's work that was done when we were developing this policy or during that time.

MR. GIBSON: It was a DEP-funded effort to identify the things that are obligated to nearshore hard bottom. It was done four years ago, three years ago. It was Lindeman, Schneider, a couple of turtle experts. I have it right here; I can e-mail it to whoever.

MS. WENDT: Yes; if you could e-mail the literature citation; that would be good.

MR. WATTERSON: That first sentence under Number 11 reads kind of funny, anyway; I think we need to wordsmith it.

MR. GEER: That goes back to having your references at the end versus having them there.

MS. WENDT: Right, most of the other statements are so broad that you could probably support them by any number of different references. This one seems so specific, but maybe we should just make it more general and add the reference in the list of references but maybe not specifically refer to recent work by scientists in East Florida.

MR. GEER: Could you just say recent work by Lindeman et al, 2009, in East Florida?

MS. WENDT: Sure.

MR. GIBSON: The reference for that probably was Continental Shelf Associates. I think it went through them.

MR. GEER: I was just going based on the references she had at the bottom.

MR. GIBSON: I believe that the report that we are starting to list is Lindeman et al with Continental Shelf Associates et al or something, if you do that with the name of the company. Who should I e-mail the report to or the reference to?

MS. WENDT: You can e-mail it directly to me or to Pat or to Roger.

MS. GREGG: Just one quick comment; starting off the sentence with recent work by, the work is already three to four years old and this policy might last for the next seven or eight years. Do we really want to put recent?

MR. GEER: How about work by Lindeman et al and Coastal Associates; is that what you said?

MS. GREGG: Continental Shelf.

MR. GEER: Continental Shelf and just add the year after it. We'll get the reference on that one. Terry, what year do you think that was; you said about four years ago?

MR. GIBSON: I think it was completed in 2009, I want to say. I'll find it right now.

MR. STREET: Go back to Number 10; the reference is a little bit different. Example of these habitats includes critical habitat areas; that is where the CHA in parentheses should be; that is at the very end of it. Then if you want to reference the Coastal Habitat Protection Plan, well, you

can either say CHPP or you can reference. The latest one is Deaton et al 2010, if you need a reference. I think that you referenced that in some of the other stuff.

MS. WENDT: Okay, are we moving on? I just highlighted the next two sections because these seem to be the most important ones; the threats and then the actual policy recommendations. Okay, some of this is just wordsmithing. There was a suggestion that more attention be paid to borrow sites or more information be included on mine sites, dredge sites.

I divided the first one up into benthic organisms and then I added in fish larvae as well as other planktonic and nektonic organisms at or near sediment dredging sites due to entrainment and decreased water quality. Then the next change I added in – and some of this I got from that North Carolina document, Mike, that you mentioned – decreased primary productivity at dredge sites due to greater depths and increased turbidity; increased deposition of fine grain sediments and organic matter in dredged areas potentially resulting in decreased dissolved oxygen and increased hydrogen sulfide level.

I deleted that reference right there just because it just seemed arbitrary to include it there and nowhere else. It does appear in the list of references. Otherwise, all the threats are the same. I don't know if people think anything else needs to be included or whether that pretty much covers it.

MR. GEER: Okay, at the bottom you have consider including breakwaters and groins, and I guess we decided not to include them.

MS. WENDT: Where is that?

MR. GEER: That is at the very end of the document. Am I jumping ahead?

MS. WENDT: Yes; those were I think notes from the last time.

MR. GEER: I had an older version; I'm sorry.

MS. WENDT: Those were just notes to self, I think.

AP MEMBER: I have a question. On Page 2 what do we do about red drum? It was mentioned under Number 7 on Page 2. We had red drum; we said something about it wasn't EFH.

MS. WENDT: I think it was decided that somebody is going to come up with a definitive list of species and we'll just use that.

MR. GEER: Red drum will be removed from the list.

AP MEMBER: It is managed, though.

MR. GEER: By ASMFC.

MS. WENDT: Moving on to the actual policy recommendations; that first one is crossed out not because it was deleted, it was just moved. I think that I had changed some of the wording a little

bit. In the first one I just changed the word "provides" to "considers". I added in – we talked about cumulative impacts last time.

I added in an item that says all EAs should include an analysis of the cumulative impacts associated with other beach dredge-and-fill projects and other large-scale coastal engineering projects that are geographically and ecologically related. Then the following one, I don't know why those habitat types weren't included in there to begin with, but anyhow.

This is where we talked about compensatory mitigation; avoid and minimize impacts to SAV, hard bottom, corals and coral reef habitat to the maximum extent practicable, and provide compensatory mitigation for all unavoidable impacts. Project construction should be timed to minimize adverse effects on biological activity.

I started to put in the dredging window that South Carolina uses, but I didn't know if we wanted to be that specific. I didn't know what they were for the other states, so I just left it at that. I don't know whether anybody thinks it is important to include or not. I guess it depends on what kind of biological activity you are concerned with.

MS. GREGG: I was going to say in Florida, because we have – a lot times our construction windows are based on manatees and sea turtles, and it is not necessarily for other reasons.

MS. WENDT: Maybe we should just leave it more broad.

MS. GREGG: Yes; I would leave it generic.

MS. WENDT: Then the following item addresses compensatory mitigation as well. Compensatory mitigation should include compensation for all reasonably predictable, direct, indirect, and cumulative impacts to SAV, hard-bottom, corals, and coral reef habitat, taking into account uncertainty about these effects. Compensatory mitigation should be local, up-front, and in-kind, and should be adequately monitored.

The next one addresses what should be included in a monitoring plan just very generally. Projects should include baseline and project-related monitoring adequate to document pre-project conditions and impacts of the project on benthic infauna, SAV, hard-bottom corals, and coral reef habitat.

Assessments of recovery should be based on comparisons of abundance, biomass, species diversity, and community composition – I added that in – in project and reference areas before and after dredge-and-fill operations. All assessments should be based upon the best available science.

MR. MIKELL: Well, not a question but probably a statement. With Number 4, this is kind of where I have a problem with bringing in and pushing and shoving the dirt from the beach up on the higher lands. A lot of times people don't have the opportunity to have to do baselines and whatever to save whatever they are trying to save. I kind of think that this document ought to stay on the large projects and let the states handle the small projects. That is one of the reasons.

MS. WENDT: I think the title to the policy statement includes large scale.

MR. MIKELL: I've got no problem with large scale, but small scale I do.

MS. WENDT: Right; well, to me it suggests that you are not including small-scale projects.

MR. MIKELL: But I thought we did include them?

MS. WENDT: Well, it depends on – we were talking about beach scraping in that context. I guess in North Carolina they are probably considered small scale. In South Carolina they can often be larger scale.

MR. MIKELL: What is the difference between large and small and who decides?

MS. WENDT: You could add in for the first recommendation – and this doesn't address what you consider to be large scale versus small scale, but you could say large-scale projects should require the preparation of an EA. I don't know if somewhere down the list, and maybe also for Item Number 5 large-scale projects should include baseline and project-related monitoring. Would that address your concern?

MR. MIKELL: Well, after a real good northeaster on Edisto Beach, which is what I'm familiar with, it is not unusual to have one or two bulldozers out there trying to not only to save the road, but to save some houses and so forth. Granted, they might be built too close, but I guess what I'm trying to say is who are we to say that they shouldn't be able to do that? Who gets the permit? Does the individual property owner get this permit or does the town of Edisto Beach require to have a blanket permit? I just see a whole can of worms.

MR. PUGLIESE: I think the idea is if you go back to the lead into this – with the whole policy statement and the lead into this specifically cites its policies are related to large-scale beach dredge-and-fill and related projects. I think that is trying to get back to the scope. Even though we've had the discussions about the scraping, it has been in the context of large scale.

I was going to ask that question, because in here we have that title in the front and then we've got this huge – I think a number of times we've talked about large-scale beach dredge-and-fill, because this is something that is going to go right through the whole thing. I think everybody's intent is the same in terms of what we're talking about, because you don't want to get outside the bounds.

MS. WENDT: Well, I suppose you could specifically state somewhere toward the beginning that the policy is not meant to address small-scale or emergency dredge-and-fill operations, which will be handled locally on a case-by-case basis or something.

DR. WILBER: If the movement of sand requires a permit and the agency issuing the permit feels that their internal policies are exceeded or a trigger has been reached that requires coordination with other agencies; then the agencies that are being coordinated with should feel free to grab from this policy statement and use it as fit to make their recommendations. That said, I am not aware in South Carolina of the Charleston District ever coordinating with resources agencies other than perhaps the Fish and Wildlife Service on a sea turtle nesting issue; you know, the movement of sand related to a single house, or a small cluster of houses.

When they've done coordination with other agencies and it led to a whole bunch of stuff is when you're talking about a mile of the Isle of Ponce. In that context, even though that might be sometimes under 100,000 yards, which is maybe some people use as that threshold between large scale and small scale; they do the activity frequently enough that it is a chronic source of a physical disturbance to the forage base where federally managed species eat.

I think we should be drawing from this policy statement in those contexts. I would kind of trust the permitting process to basically handle this and not end up pointing us towards projects that we really shouldn't be commenting on at all.

MR. TROWELL: I agree with what Pace is saying. A lot of times the permit process is handled by our state coastal management program in coordination with the Corps in dealing with the endangered species and the turtle stuff. It is usually hot spots, one or two or three individual houses, nothing more than say a quarter mile of beach. Most of the time it is individual houses and lots, and it is real small scale.

MR. MIKELL: I just want to be on the record.

MR. GEER: Duly noted.

MR. GIBSON: Under number one, it suggests that projects should require at a minimum the preparation of an environmental assessment, especially if there are reefs at risk but also if cumulative impacts from repeated projects are likely, which they are.

MR. GEER: Any problems with that? Seeing none.

MS. WENDT: Terry, were you suggesting that cumulative be added in there somewhere; assessment of the relative and cumulative impacts or relative cumulative impacts or just plain old cumulative?

MR. GIBSON: Just cumulative, I think.

MS. WENDT: That is fine with me. How far down had we gotten? I think we had gotten down to Number 6. I added in a few recommendations regarding the quality of the fill material. That was raised as an issue last time we met, I believe. It said projects should include baseline and project-related monitoring, blah, blah, blah – okay, adequate to document pre-project conditions and impacts of the project on topography, bathymetry, water quality including turbidity, total suspended solids and dissolved oxygen, and sediment characteristics, including grain size, sorting and mineralogy in both the dredged and filled areas. Then I went on to say fill materials should consist of no more than 10 percent fine grain sediment; but then I questioned whether we want to be that specific.

MS. GREGG: It is the same situation with the construction windows, because I know that there are specific – like grains that are specified at least in Florida's regulations on beach renourishment. I would imagine that other states probably have specific regulations.

MS. WENDT: I think I got that from the North Carolina Document.

MS. GREGG: Right; I'm just saying that I don't know what Florida's are, but I know that we have regulations on them.

MS. WENDT: Should that be stated more generally or just not make any statement about the percentage of fines?

MS. GREGG: Yes, I think it should just say fill materials should match the sediment characteristics. Just cross it out until you get back to "and match". It is already there, you don't have to retype it. After "should; right there you go.

MS. WENDT: Then I said fill materials should conform with compatibility criteria included in all applicable state regulations. Then I am trying to put in a little more information about the mined areas. Dredging should be limited to bathymetric peaks rather than depressions or level sea bottom in areas characterized by strong currents and sand movement in order to increase sediment in filling rates and decrease the duration of impacts to benthic habitats.

MR. GIBSON: A couple things; I just want to be on the record. A; we shouldn't be doing any of this stuff period; it is crazy. But if we are, if we're talking about 10 percent fine grain sediments in a million cubic yard project, you are talking about 100,000 yards of mud – or somebody else who does better math than me; am I right, is that math right? This is one of the chronic problems.

Second, our state, because I sued them left, right and sideways, they decided instead of fixing the problem and not letting the Corps and the various and sundry coastal engineers just throw whatever up there and make up a report of about how great the stuff is.; they decided they would just weaken the sand requirements. It is not FWC; it is DEP.

I am not pointing a finger at you, Lisa. There is a real problem with turning this back over to the states. In North Carolina you've got a suite of bad actors; Harry Simmons and all those guys up there. They would love to do away with every single regulation associated with beach dredge-and-fill projects, and they have the juice to do it right now. I don't think resorting back to the state regulations is the right thing to do. I think the feds and the council should tell these people that if they are going to do these things, they should put native beach sand there or nothing at all.

MS. GREGG: Terry, this is not a regulation, so this isn't telling them to do anything. This is a policy statement and it is not going to be a rule or a regulation or anything. They can't tell the state what to do. I think that being general and stating what is necessary for these projects to be the least impact as possible, if there is such a thing, I think that is the best way to do it. There is no choice; the fill material has to conform to state regulations.

MS. WENDT: I suppose we could just leave out that sentence entirely.

MS. GREGG: That second sentence about saying it conforming to the state regulations; I don't think it is value added. I think they are already going to have to do it anyways.

MS. WENDT: Just delete that?

MS. GREGG: Yes; I think the first sentence is more important by saying what the fill material should be like.

MR. STREET: When we were talking about above this cumulative, direct, indirect impacts and EAs and all; you are treading on some things that are kind of very specific and have very real meaning in rules both federal and state. I am not sure how we should handle it. The reason this gets to the step-wise view of going through a permit and EA, EIS, what they include and all that sort of thing; so what we've got here doesn't quite match that.

An EA is the first document – and if I'm wrong and it has changed or something, because I haven't dealt with these things in some years now, so please correct me if I'm wrong. An EA is the first document, and it deals with direct and indirect likely impacts. Among the alternatives that an EA is supposed to include is whether or not to produce an EIS.

That is the step-wise progression. Then if it goes to an EIS, at the EIS stage you are supposed to do cumulative impacts. The EA doesn't – this is under NEPA, and I know it is under the state North Carolina Environmental Policy Act; so you are in some very specific territory here, and I don't think this language is in keeping with it. What you want I think is some more general statements and talk about all impacts or some things like that. But right now I guess 2, 3 and 4 are not quite accurate from a process viewpoint. Thank you.

MS. WENDT: Well, how shall we address that?

MR. GEER: I've already decided we are finishing at 5:00 today regardless of if we're done with this or not. I was getting pats on the back for being ahead of schedule and now we're going to be 30 minutes behind. Could you just make it as simple as saying the environmental assessment process instead of listing the EA, the EIS? No?

MS. GREGG: I don't think so, because there is a very specific distinction between EAs and EISs and all of the NEPA documents.

MS. COAKLEY: I'm not sure about the state laws, but under NEPA both EAs and EISs do have a cumulative impact evaluation in them; they both do. That is not an issue here if you are talking about the federal requirements. I don't know what the state program is like.

DR. WHITTLE: I thought it was also a pretty fuzzy distinction between EAs and EISs; that you can have very detailed EAs, and on the other hand you can have EISs that are not as thorough as some EAs, but I don't know.

MS. COAKLEY: But the distinction is in an EA under NEPA it is a FONSI, finding of no significant impact. You're saying that you're not expecting the impact to be significant, which is why you do the EA first to see if you can support a FONSI statement that you are not expecting a significant impact. If you can't, then usually it is NOAA Fisheries, if they can't support the FONSI statement; then you know it has got to be elevated to an EIS. Do you have to use the term EA? Can you just say a thorough evaluation of environmental impacts and just put that in there and get rid of the EA language, get rid of the cumulative effects language; just as an idea to streamline it?

MS. GREGG: I think it can be general as to what these projects – what level of information that you think is necessary to fully evaluate the projects or how you think the projects ought to be conducted. I think that is the general information that probably should be in that section. I do agree that referencing EAs or EISs or anything like that is too specific and it is not going to be accurate.

MR. TROWELL: Any time in the state of North Carolina the coastal management CAMA permit is required; the state legislation has done away with the EA requirement and the necessary elements in a major CAMA dredge-and-fill permit applications are spelled out in rule; the necessary elements. They are to be a sediment grain size bar side information and all that. It is spelled out in rule. There is no EA requirement. That has been done away with.

MS. GREGG: Florida doesn't require EAs or EISs or anything like that either. We always review the federal documents that are required, but we don't require it on the state level.

DR. WHITTLE: Right. I think this was added in by the Habitat Panel at an earlier meeting. I guess because it was considered by some to be important to sort of spell out what our recommendation is regardless of what is required by the states. If there is a way to state that more generally or just not reference the environmental assessment and just speak more generally about a –

MS. GREGG: How about identifying South Atlantic Council's best management practices for future renourishment projects and just say this is what we think ought to be followed? It is just this AP's opinion or the council's opinion in the things that would make a beach renourishment project better; but it doesn't reference an EA or anything like that.

MR. PUGLIESE: Pace, I'm going to tap on you. To a great degree, the reason all of this is being done is to try to be available to either in the EFH review process or state review processes; and I know some of this was brought in because it was specifically trying to tack in when something maybe identifies impact on EFH and get into where there may be an assessment.

What is your thought about making this more generic or keeping this tied back to an environmental assessment of something, whether it is just say environmental impacts associated with this or whatever; because I think it is pretty critical. What we're trying to do is trying to make these more useful for both the EFH process, for the states, and for other agencies that may want to use them. What the avenue is to make that happen, I think is where we are kind of at right now.

DR. WILBER: I personally would avoid the general statement approach and try to be as specific as possible; because in the general statement approach all we're trying to do is find an artful way to summarize existing processes that are outside of our control that are required by other people to do. The issue is what are the three or four, five, six things that are most important to the council when examining a beach nourishment project?

I do note that an EA includes a cumulative impact assessment. A lot of beach projects don't have a NEPA environmental assessment, but they have what the Corps will call an environmental assessment; which is a statement of findings, which is a big document attached to the permit that the Corps uses to create the administrative record to support the decision it made.

Corps people often call that environmental assessment, statement of findings. It is also known as a record of decision. It has got a whole bunch of names that slightly refer to different components of it. The key part though is those documents are not submitted to the public for review. They are buried in filing cabinets. Those documents don't always include a cumulative impact assessment.

If a cumulative impact assessment is something the council really thinks should be a part of every beach nourishment project, then come right out and say that and not really worry about how that cumulative impact assessment fits in with NEPA documents, 401B statements, and all that other kind of stuff that is in the regulatory world.

If you go down a couple more when you talked about matching the compatibility of sand, well, there are at least 20 different ways to characterize sand; so which of those parameters are most important in determining compatibility from a council fishery perspective? Is it grain size, is it the grain size distribution, is it the presence of a certain grain motile size class, is it the color, and is it the mineral composition of the sand grains?

There is a whole bunch of things that it could possibly be. That is the kind of information that is not out there now that would be helpful to get to if we feel we can get to that point. I know at least in that example we're really kind of pushing the science as to what we really honestly can prove to be true; but it is a policy statement. It is not a peer-reviewed scientific paper. If we feel it is important enough to say it, we could.

Now Number 8 there I think is a good example of something that is specific. It talks about how to do the dredging. There are a lot of people who would disagree with that; but the fact that the council believes that dredging practice is the best way to do a beach nourishment project to protect fishery habitat; that is a valuable statement to have there the way it is written. That is a good thing. I would try to strive for that level of detail in as many bullets as you can get; but these overly general bullets really don't do anything.

MR. PUGLIESE: To that in effect what is here right now it is at least getting closer to specifics. The bottom line is it is closer to specifics. If it can be even more specific, like with regards to the comments on the specifications of fill characteristics relative to maintaining and connected to species or the habitat on the beach or something like that. Then it would even be better.

MR. STREET: Yes; go back up to the beginning of this section. You want to say something like you have there that projects should require the following types of information; and then start listing; you know, a thorough review of the habitats at the mining and filling site. Just start listing things, the types of things you wanted to document, alternatives, impacts of various kinds. If you don't want to use cumulative short-term, long-term, impacts to the habitat and the species prey and predator and this kind of stuff; and then you can get into two or three different categories of types of information you want.

DR. WILBER: I agree, a list of information would be a really useful thing to have. To kind of take that one more step further is what is the council's recommendation for dealing with multiple, as an example, nearshore hard-bottom surveys from a particular area? Over ten years you can have three surveys and the acreage of hard bottom can vary from a half of an acre to four

acres. How do you pick a number for your impacts from those three surveys? Do you average the three surveys; do you take the biggest number?

Do you take the most recent number? Do you do some fancy GIS analysis and do a cumulative footprint kind of approach? That is where a lot of the fighting in the trenches now is on beach nourishment projects. The council stepping forward and saying, look, we want to do a cumulative footprint analysis, that is what we want to do; that is where we want to be for SAV impacts and coral reef impacts. That would be an extremely valuable thing to do.

MR. GEER: Okay, it is 5:01. I said we would stop at five o'clock. We're obviously not going to get through the rest of this today. We can pick this up first thing in the morning if you want. I leave it up to you. I told you I would get you out of here by 5:00, though. Well, we went through the whole document. Now we're discussing some significant changes to these recommendations. What's your pleasure?

MR. PUGLIESE: I was just going to say you all have accomplished a lot. We've gone through a lot of different things and really even at this stage have dug even further into some of this to try to make it again to that call of making it as useful as possible. We could go a long way with what Mike has started in terms of trying to restructure and reorganize some of this and to list.

That is something I think we can do, but we are at the twelfth hour to be able to try to do that. Maybe if you could think about that, at least the core of what those might constitute, I would say we could start with this, because I think we do have a little latitude. We have shuffled around the agenda now, so we could start with this for a while so that we don't lose Pace. I think we can get through this portion if we have a little bit more thought about how to start laying out some of the listed items within this.

MR. GEER: Pace, when is your conflict tomorrow? We could start at 9:00 and do the artificial reef summaries and then jump into this for like 30 minutes or so. Then you should be back by then. Okay, does that sound good to everybody? We might have some videos and nice pictures in our artificial reef thing.

That should be a little bit of a break from looking at policy statements and bickering over one word here or there. I know this is tough. A lot of us who have been on this AP for a while have gone through this before, and it is tough. It is tough to sit here and do this all day. All right, with that; Roger has something to say.

MR. PUGLIESE: Just one last quick statement. Lisa had followed up with some comments we had on the aquaculture, just for note. The sentence in the council's policy regarding naturalization is actually in the NOAA Aquaculture Policy, but it is in an appendix to the policy. It is not actually in the policy statement itself; and it does not have a definition within the policy anywhere what it means. In the policy there is no reference at all to any of the genetically modified organisms. That is not even addressed at all; so just for context of the discussion we had earlier on and where that stands.

MR. GEER: With that, we are adjourned for the day.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday morning, April 1, 2014, and was called to order at 8:30 o'clock a.m. by Chairman Patrick Geer.

MR. GEER: All right, welcome back, everybody. As we said yesterday, we are going to have a little bit of change in the schedule. We're going to start off with just briefly talking about some of our artificial reef programs. We put this together pretty quickly. This is just the precursor to starting a policy statement on artificial reefs. We have a couple presentations we are going to give. We're going to start off today with North Carolina, and, Gregg, you are up first.

MR. BODNAR: Thank you very much. Again, my name is Gregg Bodnar; I work for the North Carolina Division of Marine Fisheries in the Artificial Reef Program. I am here in our Habitat Chief Anne Deaton's staid. I was asked to go ahead and give you a little bit of an overview of the North Carolina Artificial Reef Program.

I'll give you a little bit of background for the North Carolina Artificial Reef Program. It really began in earnest in the 1970s. Before then we had a lot of private organizations, fishing clubs, and things like that that were sinking materials. They were anywhere from white goods to cars, car engines; just pretty much anything that they could get on a certain sized boat to go ahead and put offshore to use it as great hard-bottom areas, artificial reef areas.

In the seventies North Carolina Division of Marine Fisheries centralized all those permits, took over from the private stakeholders, and was then put in charge of the artificial reefs in North Carolina. It really began in large-scale enhancements through the Liberty Ship Act in the seventies, and also one of the first materials that we put down was boxcars.

I won't discuss tires and things like that. That is a four-letter word for us now. To get that end done, we no longer use tires. I'll talk a little bit about some of the materials that we use in habitat enhancement. Our primary objective is to develop, maintain, evaluate and administer that successful artificial reef system as an integral part of management programs; to enhance those fisheries habitats, but also do it with the interest of two other stakeholders, public fishing and scuba diving opportunities.

What that has created right now is 41 ocean and 8 estuarine reefs throughout North Carolina from basically the Virginia border and Oregon Inlet down to South Carolina and one reef that kind of melds the line between North Carolina and South Carolina. I'll be speaking about three different categories today, and you can see the North Carolina Artificial Reef System that we have. I'll talk a little bit about coordination; a biological, which is mostly what I do; though right now my boss along with Anne and a few other individuals in our section are right now out on some health leave.

Myself and the other biologist we have in the artificial reef program are kind of doing triple duty, not only doing our jobs, but also doing the coordination aspect of it. I'll talk a little bit about that when we get into some of the permitting that I'll talk about as well; and then some regulatory issues that we have in North Carolina as well right now.

Coordination, two different funding sources or two major funding groups that we go through – the primary funding, which is most of our general operations which I think every state is facing right now are ever-dwindling state appropriations. Then we have two grants that we usually go through, Sport Fish Restoration Grants, which is a majority of our operational funds for both biological sampling and coordination.

We have two Sport Fish Restoration Grants that we work from right now. One was segmented to the coordination side and one to the biological side. Coming up in 2015, we're actually going to combine those two into one large grant for processes of streamlining. Then we also in the past few years have a state coastal recreational fishing license; and the monies from that go through and are available for grant processes.

A lot of what the CRFL license goes to and one of their mission statements is to manage, protect, restore and develop, cultivate and enhance those marine resources of the state of North Carolina. A secondary funding source – and this is usually for specific jobs or projects, one-time grants, mitigation or reclamation are used sparingly; because those particular grants are fleeting, they may have money in them available; we usually use those for specific projects.

A lot of times we have gotten monies to do work with our Oyster Sanctuary Program. Through the Navy we have some Golden Leaf Funds and other things like that through North Carolina, through Tobacco. One of the grants I will talk quickly about this morning is a grant through the Department of Justice through hog waste reclamation plants.

The enhancements usually come from the Sport Fish Restoration and CRFL Grants. Right now our current focus for about the past five years is addressing finfish utilization in estuarine reef sites throughout Pamlico Sound, their tributaries in New River, and also the Cape Fear River. In those eight estuarine reef sites we have, we have currently enhanced three of those and we are in the design phase of one, which is our Ocracoke Reef Site, which I'll talk about briefly here.

Ocean enhancements are still ongoing, and they are usually taken care of through those CRFL grants. We just finished one CRFL grant to create and do the initial enhancements off of Brunswick County in Long Bay and also through reef associations. Very little of our money that we get through Sport Fish Restoration, CRFL, those one-time secondary grants we have; very little of that actually ends up being used to buy or purchase materials.

Most of the materials that we use to enhance our reef sites come from a very large private base of civic groups, artificial reef associations, and fishing clubs. Without those organizations, we wouldn't be able to do the scale of enhancements that we do in North Carolina for quite a few years. The first reef site I'll talk about that is going to give you an overview of our estuarine reef sites is AR-396, which is in the Neuse River, just off of Oriental.

This reef site was originally set up as a one acre reef site just below the L in Oriental; that northernmost boundary was a one acre site. One of the interesting things or one of the challenges that we're facing right now is as these reefs were created in the early sixties and seventies through Loran and through dead reckoning, a lot of these materials were put down; and unfortunately they were put down through unintended error.

A lot of what we're doing right now is actually increasing and expanding the size of these reef sites to accommodate the originally permitted site to encompass the existing materials that were down and then that gives us a larger area to go ahead and enhance those reef sites. AR-396 Oriental originally had some scrap steel and tires and a slight marl mound. That was only one acre in size.

We increased the acreage to 63 acres to encompass that material; and you can see here the sidescan of AR-396. The farthest to the right there; the new marl mounds that we created; just to the west or to the left of that, you can see the reef balls, which is a very common, prefabricated, artificial reef unit that we use in North Carolina. They are varying in size – and we'll talk about a little bit of that here in a little while – anywhere from about a foot and a half inside to six feet in height.

The next one over to the left is the scrap steel and tires, which were used quite a bit in the seventies. You know it was that wonderful idea of at the time we did not have any recycling opportunities for tires, so they decided that it would be the best unit to use. You can't just throw them in landfills; end up being used as artificial reef material at the time.

Unfortunately, in North Carolina, we are still dealing with beaching of tires that were put down in the ocean. We're still pulling them up on the beach, though. Thankfully over the past few years it has been dwindling. What we referred to as the materials of opportunity, which is in the upper left hand corner there, which is concrete reinforced pipe. I will talk a little bit again about the cost-effectiveness of using materials of opportunity versus those prefabricated units as well.

The newest reef site that we're looking to enhance is AR-298 in Ocracoke. This is in Pamlico Sound. It is in about 20 to 22 feet of water. Currently the material, which is a 28-acre reef site, has a few barges, a tug, and some limestone marl mounds that were put down through our Oyster Sanctuary Program.

This is a program that basically mirrors the Artificial Reef Program; but what its consistent use is, is for the upkeep and for the management of our oyster stocks in North Carolina, where the Artificial Reef Program is usually towards the finfish side, recreational diving and fishing opportunity. The projected enhancements; we're increasing the reef size. Once again, you can see the sidescan mosaic there of the top and the bottom sidescan images there.

The insets are of two barges that we have on the reef site; and then the one to the farthest left in the middle there is the 65-foot tug. The projected enhancements that we have for this reef site; once again, one of the very common materials or prefabricated units that we use are reef balls. We're going to be using Goliath, Ultra, Palate, and Bay balls.

The Goliath Ball is basically the largest one they make and about 5.5 feet across and about 6 foot high, down to the Bay balls, which are only about 2.5 foot high by about 2.5 foot wide. Concrete pipe and square box culvert catch basins; and we're currently in the design phase right now. One of the things that we do when I talk about some more in depth of the materials is durability and stability of materials as one of the biological samplings that we do for a lot of materials that we put down in North Carolina; and also looking at specific metrics of those materials and how those metrics relate to a particular species that may be using the reef sites.

Additionally, in coordination right now we are updating our master plan, which is our guide to what we do in the program. The original master plan was developed in 1988 and we're right now in the processes of updating that master plan to get it into compliance and to use it, like I said, to guide us for the next five years.

Also we are updating our reef guide, which is one of our main public interactions. We are very well received in North Carolina, the Artificial Reef Program; for the opportunities that it provides both divers and fishermen. One of the ways that we get that information and disseminate that information out to the public is through our reef guide.

Originally it was printed on waterproof paper and still to this day – it was printed back in 1995, and still to this day I get phone calls of people asking for those waterproof guides. They were in Loran numbers, they are very outdated, they are almost useless now; but I still get people calling years later for that reef guide.

That was kind of one of the antithesis to create that printed reef guide again. We're breaking it down into regions north of Hatteras, Hatteras to basically north of Hatteras, Onslow Bay, which is south of Hatteras, and to Frying Pan, and then on to the western side of that into Long Bay. One of the things we're also interested in or also pretty excited about is an interactive website that will incorporate sidescan images, history and photographs into our reef guides.

Right now basically our interactive reef guide on our website consists of each reef site and a printout of that material that is on that particular reef site. Getting into the 21st Century, we're looking at updating it with the overreaching availability of GIS software now. We're really trying to make it more interactive.

What you are going to be able to do with our reef guide is you are going to be able to look at all of North Carolina, look at all of the reef sites that we have and be able to zoom in onto a particular reef site, get pertinent depths for that reef site using the charts that are available through NOAA. As you zoom into the individual reef site, you will be able to see in scale all the materials that are put down on that reef site.

You'll be able to click on that particular material and you will be able to get the metrics, the date it was put down, the average depth in that area, what that material is. If it is in the case of a shipwreck, its pertinent characteristics, its links, the beam, pictures of the material, history of the material. One of the things that divers in North Carolina are always looking for with the World War II shipwrecks that we have in North Carolina is the history.

You just go out and dive any boat, but why do you want to go ahead and dive this boat; so getting pictures, sidescan mosaics, any related history of that particular material goes a long way into cultivating that interest in the artificial reef program in North Carolina. In hopes to have that public support for when our ever dwindling budget goes down; that we're able to still stay around and do our job.

(Question asked off the record)

Mr. BODNAR: It is very difficult now; but basically if you do a Google search for North Carolina Division of Marine Fisheries, it will get you there. It is actually www.portal. It is through our department now, the Department of Environment and Natural Resources. It is not as

simple anymore; but if you do a Google search for NCDMF Artificial Reef Program, it will get you there and it will be pretty much the first thing that pops up.

If not, it redirects you there because everybody always looks for NCDMF.net. The biological side of the artificial reef program right now; we're looking at two different sections of our sampling. We are sampling our inshore artificial reefs in Pamlico Sound and its tributaries and trying to assess those reef sites as essential fish habitat; what is being utilized at certain times of the year.

We basically do our sampling from May through October. There are particular species that we're looking at, too. These species have management plans in place or about to have management plans in place with the case of sheepshead; but we're looking at sheepshead, black sea bass. Gag grouper is one that we're very interested in.

We look at some sea trout and the three flounder species that we have in North Carolina as well. The other side of our biological sampling is a juvenile abundance index. A number of years ago there was very little done in North Carolina looking at the ingress of larval gag grouper and then looking at juvenile gag grouper as they settle into the seagrass areas of North Carolina; where they move.

There were papers done in North Carolina back in the eighties identifying that, of course, gag grouper utilize our seagrass beds as juveniles; but then there was a wonderful sentence in a lot of the papers that were written says that once they move from the seagrass beds in August, they move to more complex habitat. Well, what is that more complex habitat?

It is assumed with the oyster beds that we have in North Carolina, we note them on our inshore artificial reefs, on the rock jetties; but exactly where do they go; what do they utilize and in what amounts, and what areas do they utilize those reef sites? We do that juvenile abundance index. We do it for gag grouper, black sea bass, sheepshead, the flounders and sea trouts.

Then we are also are identifying and looking at the movements of those particular species in the seagrass beds and then on to more complex habitats, which we're hoping and that we're assessing that is our artificial reef program. Besides the finfish studies that we do; we also do a lot of durability and stability tests. Durability is looking at the particular material that reef is made out of. Concrete is a very common material that we use; but with the influx of new artificial reef materials, it seems like almost every salvage company wants to create an artificial reef unit to use that.

Well, what is it made of, what PSI the concrete is – reef balls are well known as a prefabricated unit, because they have done a lot of the hydrological tests on it. They've looked at the material, that their concrete is PH neutral to help with settlement of marine sessile organisms; so looking at the durability or the suitability of that material, what that material is made out of.

Also, when you're looking at what that material does and once it is in the water; how it interacts with the sea bottom, how it interacts with waves, how it interacts with storm events and things like that. One of the things that we really look at in the artificial reef program is if you put down a material and it is only there for two years, three years; it really doesn't do you any good.

Especially for the amount of money that is paid per unit of material and then to get that unit of material on a vessel out to the reef site, deploy the reef site as something that may only be used for years is not a good use of the ever dwindling resources that we have. In North Carolina we have kind of a benchmark of about 35 years, which is about the average lifespan of some of the reef species that we have, some of the groupers. You are looking at a material that hopefully will be years beyond that; but as a benchmark or as a baseline that we try to use.

Then also we look at reef site selection criteria. The estuarine reefs that we have in the rivers, these are wholesale different than what an offshore reef site will be for the most part. You have certain sand sediment depths in offshore reef sites until you get to the hard bottom. Water depth and things like that are pretty much most of the metrics that you're going to look at.

On the inside every reef site is different, whether how far it is up a river, what that river is like, what the soft sediment and type is. In the case of the Oriental Reef Site that I showed you, on the deeper edge of it, on the southern edge of it in about 16 feet of water, we encountered – when we did some of our sediment type and depth studies; we're finding that soft, fluff sediment in those areas that was in excess of what we could measure it to the point of when we settled down onto the bottom in our dive equipment to try to figure out the depth of it, we sunk down into that material to about your thighs.

Then, of course, as you're sitting in this in blacked-out conditions, you're wondering just what you're settling down into. Each reef site has its own interests; and within that reef site itself, there are so many different bottom types that you have to account for when you are deciding what materials may be in; salinity regimes in those areas as well.

Geographic location and distances to inlets can be very important, too, in determining where you are going to set a reef site, and then again what types of materials; what finfish species may utilize that also. One of the main things that we use when we do reef site selection is our sidescan sonar.

We have two sidescan units, one for inshore and one for offshore use. They are instrumental in determining not only reef site selection; but also in that, durability and stability and also in mapping our reef sites as well. Right now we're in the phase of our large-scale oyster restoration feasibility study.

We're looking at trying to determine two different types of remote settings; both using hatchery reared larvae and also in situ setting of culture material, using crushed concrete and reef balls and seeing how well those two particular types of remote setting can be used in large-scale oyster restoration reef sites in North Carolina. Since we're here in a habitat discussions, I wanted to talk a little bit about the materials that we use. There are three different groups or categories that we use in materials, and those are prefabricated units, which are those reef units, the reef balls and things like that.

We also have ones that we used back in the early nineties called H units; natural materials, rock, shell and where to use materials of opportunity. These are things like that reinforced concrete pipe, waffle boxes, and culvert, manhole sections, ships, concrete rubble, and things like that. Like I said, when we do put down these materials, we look at the durability and stability.

The durability is what the material is made of; how well will that material withstand the elements; and then the stability of the material; for instance, subsidence? As that material over time subsides down into the sediment, then you end up using surface area.

If you could have the material or unit that is made out of concrete; will it last for hundreds of years; but if its design ends up creating that there is subsidence for that material and within a number of years that material is gone; it has actually subsided underneath the surface of the sediment; it doesn't do any good as a reef material.

The Gulf States and Atlantic States Marine Fishery Commission Guidelines is our material bible that we use, and it is updated every five or so years. That pretty much takes the material that each one of the artificial reef programs use and gives you both pros and cons, what happened in the particular state, why it may have been good or bad, and then be able to use that and be able to take other programs; the information that they've gathered, and utilize that in your reefs research.

Then each one of the materials that we use, there are varying characteristics of each one of those materials. There are six characteristics of habitat complexity that were identified by Gratwicke & Speight in 2005, and those are rigosity or the overall bottom contour profile, height of the material off the bottom, percent live cover, variety growth forms, variety of refuge sizes.

It is not just the amount of holes or the amount of refuge that is available for species, but it is the variety of those refuge sizes. If you're using concrete pipe and you're using concrete pipe inshore, and it is 60 inches inside diameter; that is not very good for a grouper that is 6, 7, 8 inches. That doesn't' work for them; it doesn't provide that refuge.

You need those varieties of refuge sizes, the cracks, the crevices, the large holes, the small holes, and also the percent of hard substratum. There are a lot of these finfish species. Estuarine-dependent finfish species are also hard substrate dependent as well. You need that hard substrate for the sessile organisms in addition.

Also, you have to identify those materials with specific species' habitat needs. Ledge material is one of the interesting metrics that we look for with gag grouper. They are ambush predators. You can see that on the right-hand side in the middle picture there are some offshore materials of opportunity ledge that we found.

When we put that material down in about 50, 60 foot of water; before you could even note any kind of bacterial growth, sessile growth on that material, there were gag grouper just all over that reef site and they were utilizing that ledge material. Being able to identify particular species' habitat needs and then finding a material that satisfies those habitat needs is something that we utilize quite frequently in North Carolina.

On the regulatory aspect of it, right now the other kind of billboard that we have besides the web and the artificial reef guide that we have is our buoys. Unfortunately, our ocean buoy system is very expensive; it is about $10,000 per buoy system. We have 35 reef sites offshore in North Carolina that we buoy; and that includes the two buoys, chain, hardware and sinkers.

Basically you have to believe that all of those materials that are for that buoy are consumable; that they will be used up, lost at one period or another, the chain degrades, the buoys may be lost.

After a while the buoys may have to be taken out of service due to damage. On average it is about $70,000 per buoy cycle to take our landing craft out and to service each one of our buoy systems. There is an ever-increasing cost of single recovery events whenever these buoys fall off.

You see the picture down there is the most recent reef buoy that ran away on us and ended up beaching itself, thankfully. It only cost a day's worth of work. But those ever-increasing costs is making the ocean buoy system in North Carolina basically unfeasible. We're looking right now; and we have U.S. Coast Guard approval to remove our ocean buoy sites and we're awaiting North Carolina Coastal Management and Army Corps approval as well. That is all I have for you.

MR. GEER: Does anyone have any questions for Gregg?

DR. LANEY: Thanks, Gregg, good presentation. I had a question. I understood from some of my colleagues that the Army Corps of Engineers is at long last going to provide the long-awaited mitigation for the Wanchese Harbor/Manteo-Shallowbag Bay Project in the form of 42 acres of oyster reefs I think to replace marsh acreage that was lost. Are you guys going to be involved in the design and siting of those reefs?

MR. BODNAR: That is mostly in the Oyster Sanctuary Program, because that material is – there is a blurred line between those two particular programs in North Carolina. We do a lot of that and we will utilize some of our expertise in that. They are well versed in the North Carolina DCM CAMA Permit. That is being created right now.

I know the permits are in the works right now; they are in the design phase of – I believe a lot of that material is going on the Pea Island Oyster Sanctuary Reef Site; but, yes, that material is moving forward and they are in the design phase of that right now.

MR. MIKELL: The inshore reefs; are you putting them in water that is moving fairly fast?

MR. BODNAR: That is one of the interesting things about the estuarine reef system. Each reef site is in itself different. We have two reef sites and an oyster sanctuary in the Neuse River. One of our artificial reef sites is in fairly moderate flow up near New Bern, in fairly low salinity waters. Then the Oriental Reef site, which is down closer to the mouth of the Neuse River, is a little faster flow. Yes, we do have quite a few artificial reefs in the reef systems that do have some fairly high flow in those areas, fairly constant downstream flow.

MR. MIKELL: But you don't have much tide; do you?

MR. BODNAR: In those reef sites, no, there is not really much. Most of that is actually windborne tide.

MR. MIKELL: You answered the question about offshore; but how about inshore; how long does it take to populate an inshore reef?

MR. BODNAR: Once again, not very long as well. You will get bacterial growth, you'll get sessile – you will get bacterial growth within a matter of days. You will get sessile growth; it

really depends on when the material is put down. A lot of times in the oyster sanctuary they will put down the cultch material right before sat sets, so that you can get that down.

We also try to do that as well to make sure that we put down the material in an advantageous time for oysters, for having the material that may be – sometimes logistically it is impossible to go ahead and put that down, because the vessels just aren't available. But within a very short period of time, you do get that sessile growth.

Within a matter of months, you'll have the barnacle growth. Depending on where it is, you may have sessile sargassum growth. On the Ocracoke Reef Site we get a lot of that as well. You will get a very short period of time, but just like anything; you know, you get a new restaurant in your neighborhood and people are going to populate it; it is the same thing with finfish.

There is that current disturbance, there is that something new in the water, and they will go ahead and investigate it. They'll go ahead and populate, whether it is in a transient period of time, before you get that sessile growth. With a lot of the estuarine-dependent species, they are looking for that sessile, they are feeding on that; especially the sheepshead.

You will get even some of the mud bottom areas with red drum, croaker and things like that. They will still inhabit those areas. They will look for those disturbances in those areas. In a very short period of time – we've put material down in February, and we were fishing it in May with success.

MR. PUGLIESE: I think I know the answer; but the juvenile index, I assume it is part of the overall Pamlico Survey or connected to the overall Pamlico Survey?

MR. BODNAR: It is separate from that. It is an instance that we had in North Carolina where there was an opportunity for funding and there was a need. There was a species that we have near and dear to our hearts. Our methods and materials mimic some of the juvenile abundance indices that we do in North Carolina through some of our other programs.

The data is available to be used in those. Though it is not actually funded by those particular programs; that data is available to those programs. A perfect example is sheepshead. In North Carolina we're getting ready to create a fishery management plan for sheepshead. Right now one of the needs that they have is a juvenile abundance index for sheepshead.

I was very excited to be able to send out that e-mail saying, just to let everyone know, we have four years of juvenile abundance indices for sheepshead available. You've got to start somewhere, of course, but at least we have four years of data available to be used. Any of our material, any of our data; though it may be written up in reports for the Artificial Reef Program, are available to be put into a fishery management plan to be able to put into whoever might need that data.

MR. PUGLIESE: Yes; I very specifically was asking because of the overall SEAMAP overarching connection to the Pamlico Survey and the integration into the overall fishery-independent survey activity in the southeast. Wherever there may be other facets that can be added in or connected into that information, I think it is going to be important. Also, I assume

that is the same with the gag. We've got the gag ingress survey that is ongoing; so I assume that is potentially also connected.

MR. BODNAR: Yes; and that ingress survey was very interesting. Two years ago now was our best JAI for gag grouper. Just anecdotally we noticed that we had two different size classes in that cohort. Going back and talking to our gag grouper lead; they noticed in their larval ingress that they had two different pulses.

We were able to see that in the juvenile abundance indices on some of the regressions that you had two different groups. If I remember right, they were about 20 millimeters size differences, which if you're looking at it I believe it is about a millimeter in a half a day growth at that time. It just about exactly mirrors those two pulses.

MR. PUGLIESE: It is exactly why we're having some of these discussions. What about some of the environmental data being collected, because there is a lot more work to try to begin to connect both and not only use the information for juvenile indices sampling, but also begin to make that connection with the oceanographic and environmental, both inshore and offshore, and then make the linkage between the systems.

MR. BODNAR: Yes; the habitat program does have a methodology in place that we utilize to describe the area that we are in and what we're sampling in. Every time we go out and do a JAI trawl, at least once a year we take that habitat information, we take that habitat data, we take percent – during our tows we take percent seagrass coverage. All that data has been cited upon by the habitat section. We do take that information as well. We try to get as much data that is useful to as many people for our particular programs and what we do so that you show it that you are as vital as possible.

MR. GEER: Thank you very much, Greg. I think with these three talks you are going to see a lot of overlapping.

MR. BELL: Good morning; I'm Mel Bell. I am the Director of Office of Fisheries Management for South Carolina Department of Natural Resources. My artificial reef coordinator, Bob Martore, is actually at sea right now on the RV Palmetto. My reef guys aren't here; I am standing in. I do have a background in reefs.

David Cupka and others were kind enough to hire me back in 1983 to be the artificial reef coordinator for the state. I did that for a number of years. Let me first, in discussing our program, recognize the fact that while we've been building artificial reefs off South Carolina since the sixties and actually history-wise documented reefs in South Carolina back into the 1830s. This state has a history of utilizing manmade structures to enhance the fisheries. David actually started the official program back in '73. Everything we're doing today is sort of built on his shoulders.

Greg covered a lot of stuff which I am not going to cover; because Pat is correct, if you talk to any of the reef programs or get briefings on any of the reef programs, you are going to hear a lot of the same sorts of things. I am going to try to cover some things that are unique to our program and also to kind of get you to think outside the box a little bit with artificial reefs. I'm sure you're all familiar with them and why we build them.

Basically off the coast here, most of the ocean bottom does not look like that. Most of the ocean bottom is not that nice hard substrate, which is, of course, important to a lot of our species in the snapper grouper complex that we manage as well as other pelagic species. Most of the bottom looks like that. That is a majority of the bottom.

The real simple concept with artificial reefs is we take bottom like that and we specifically look for flat, featureless, vast expanses of sand bottom and we convert them into a hard-bottom reef community through the addition of various materials. We use the same types of materials that North Carolina uses, that Georgia uses, that Florida uses.

These are a lot of materials of opportunity; boats, concrete, interesting things occasionally like surplus army vehicles, subway cars. Subway cars, after they've been on the bottom for a year or so – I'm going to use a little video in here so you can watch fish move around and get the concept; but it is a fairly straightforward process we all follow. You add hard, suitable, clean, hard substrate to an area of sand bottom and eventually a reef forms

You find the same species composition in the depth of water where you would find if there was a marl outcropping there, the same sort of thing. The primary focus of artificial reefs over the years has been for the enhancement of recreational fisheries in this nation. These are the types of guys you're making happy with this; not only making them happy, but making a lot of people happy.

The other group of users on artificial reefs would be our recreational dive community. The recreational divers can be consumptive uses in that they may be spear fishermen or like to spearfish; but a lot of times a lot of our divers just like to look at the interesting things out there on the reefs.

Of course, the recreational fishermen would be a consumptive use of the reef, divers kind of so-so. About 50 percent of our recreational diving in South Carolina is on our artificial reefs offshore. That is the traditional customers for reefs; and the traditional reason we build reefs is for recreational fisheries' enhancement.

Again, we have 45 permitted sites along the coast. We have an Artificial Reef Management Plan that has been in place since '92 that kind of directs how, where and why we build reefs. Our system would look very similar to North Carolina's or Georgia's. They are in depths of water anywhere from 10 feet to 110 feet. It is a very simple formula. Our motto for a while there was if we build it they will come. If we build it, the fish will come, the fishermen will come, and the divers will come. It is a fairly simple process.

Now, we spend a lot of time making sure we do it in the right way and in accordance with best management practices and the safe way. Of course, we have to go through the whole permitting process with the Army Corps of Engineers and our own Office of Coastal Resource Management in state waters; but it is a very simple, straightforward process.

This is the way artificial reefs are traditionally used in this country. You build it, you fish it; you build it, you fish it. We also do a lot of things that Greg mentioned. We have a lot of outreach

type stuff. Obviously people are interested in locating our reefs, interested in what goes on at the reefs, so we have various tools, both internet-based and in print, to communicate with folks.

We also have been operating sidescan sonar since the nineties and have upgraded that over the years. You will find that a lot of the reef programs rely on the use of sidescan as a way of monitoring. We are required in condition of our Army Corps permits to do what we call compliance monitoring to make sure that the materials we put down are doing what they are supposed to be doing and staying where they are supposed to stay.

Yes, tire is a four-letter word; and we did some of that back in the sixties and seventies like everybody else; but we have been blessed in that we haven't had any mass strandings as occurred in like North Carolina and Virginia. Again, our program does the same thing as any program does. We have a heavy use of diving in our program.

I was the scientific diving officer for the DNR for years. One of the current reef staff is the new scientific diving officer. We spend a good bit of time in the water monitoring what is going on at the reef; are the materials working; what is going on biologically speaking? We also maintain buoys just like the other program. These are the things that all reef programs do.

We also have done some economic studies; and this is sort of interesting. Back in '06 we were looking at what sort of participation occurred on the reefs and what that equated to. For us in South Carolina – and this is a '06 figure – our artificial reefs generated over $82 million, annually to this state. That is primarily recreational fishing trips, but also some diving.

The reef program itself is an income generator for the state. As I mentioned, that is the way we have always sort of thought; we build it, we fish it, we build it; we fish it. These again are the folks that we make happy. Here is where I want you to kind of think outside the box a little bit. Since I have been putting a lot of thought into reefs for a long, long time;; so what about the concept of building reefs and not fishing it?

What if you build reefs just for the fish or for the ability to enhance the rebuilding of stocks; what about that? We've actually incorporated back into '92 the concept of doing that into our artificial reef management plan. In our plan we have always had in there that perhaps one day we would want to build reefs as sanctuaries, as nurseries, as deeper water habitats; and at different levels to provide support for different species at different points in their life history.

It has always been in our plan; the problem is who is going to pay for it? The recreational fishermen basically understand that you build it, I fish it; you build it I fish it. This concept of, okay, you build it, I don't fish it, but I still benefit somehow; and that is what we've been trying to get people interested in. I think I could tell you from a council perspective, in sitting on the South Atlantic Council, at the last several council meetings we have heard from recreational fishermen, we have heard from commercial fishermen this, well, why don't you build some and we won't fish it?

Now there are reasons for that; but they are kind of getting the concept anyway. I truly believe this can work based on my experience in the water for a long, long time in finding things that have been lost. I spent a career in the navy as a diver. We used to look for things that were lost; and sometimes we would find things that we weren't looking for that had been lost for a long

time; in other words, airplanes or boats or things that had been sitting on the ocean bottom for maybe decades and nobody knew they were there.

Then what you would find are these – well, you would kind of find something like this. You would find just huge abundance of fish on a relatively small structure. That told me years and years and years ago this is not a crazy concept. You could build things, leave them alone; create huge amounts of biomass on there, which it is spawning potential. There are lots of benefits that could be gained.

We were toying around with this back in the nineties; and we're thinking, okay, if we were to do that' how would we build such structures; what would they look like? Well, what we would like to do is mimic natural hard bottom, productive hard-bottom areas off of South Carolina. In other words, it wouldn't be as tall as a ship. It wouldn't be built out of steel.

Again, this is a little typical marl outcropping, a little low-relief ledge; but how could you build something like that? This is what just one of our typical natural bottom areas looks like offshore. You will see that there is not a lot of relief. You don't have to have 60 foot of relief there like you would on a ship or something. It is fairly – you know, maybe a meter; in some of our areas a couple meters; but how could we build something like that was our question.

Again, Greg mentioned this, the utility of using concrete. Now concrete, of course, you can get concrete. If you are lucky enough to get access to an old bridge that is being demolished, you can get a lot of low relief concrete rubble; but you can also spend some time and a little money in developing designs of concrete materials.

Of course, the Japanese were doing this way back in the seventies and all. We started playing around with it and came up with some different designs. Voila, you put it on the bottom; and the organisms treat that concrete pretty much as they treat a marl outcropping. A rock is a rock to them; they grow on it.

Eventually the invertebrate biota on there looks just like the invertebrate biota you find on a natural marl area. Then, of course, the fish show up at some point. Again the idea is what could this look like if you built it as big as you could afford; areas of low-relief bottom and left them alone?

In 1998 we decided to try this; and, of course, we didn't have any regulatory authority to tell people that they couldn't fish on this site, but we created our first experimental MPA, if you will. It is an area off of South Carolina in about 70 feet of water. George is very familiar with it. It became known as Area 51, which, of course, worked neatly; but the reason it became Area 51 was because our Artificial Reef Management Plan called for the development of 50 sites off of South Carolina. This wasn't in the original plans so it became Area 51.

It just kind of worked out nice and neatly. It remained a secret, sort of, pretty much for years. We were able to actually go out there and look at, okay, what happens if you do build a reef and you leave it alone? This is about two years after construction, just one little segment. We have done over the years a lot of video transects, a lot of fish counts.

I'll cover this; but between this area and another one I'm going to show you there have been five graduate students at different times work on thesis projects involving these sites. It is something we've been playing around with. As you can see over time you can't really tell that is concrete under there, although the funky shape, perhaps.

Just another shot; you will notice you've got some nice grouper. The communities have evolved over time. It is just really, really impressive what you find down there. As I mentioned, we've done various things. Area 51 was divided into four sections. We tagged fish on all four sections with unique tags, so we were able to document site fidelity on the little sub-reefs as well as movement between the sub-reefs.

We documented movement of black sea bass in particular as far north as Georgetown, South Carolina; about 60 miles to the north. We're able to do some things; and this is an experimental, small-scale MPA; but you are able to look at things out there that you can't look at in a real MPA in 70 feet of water, because you don't have one and you can't get one. It is difficult to get one.

The concept of using artificial reefs in this capacity; one, it gives you an experimental tool, a demonstration project, the ability to show the public how an MPA might work. Trust me, I have been involved in a lot of discussions of MPAs and all; and there is always hesitancy on the part of the public about, you know, well, they don't work.

If you can go out and demonstrate the concept, if you can show them here is how it can work, here is over time the benefits – we've documented spawning of black sea bass, spawning of trigger fish, spawning of spadefish. There are spawning activities that occur out there. The other things we've done is we've done fished versus unfished reefs, which we can do because we have unfished reefs.

On the same site, the fish – surprisingly enough, the fish on the unfished reefs are larger; there is more spawning potential there. It is just a much more robust reef community. You can kind of contrast very easily here is what you get when you fish it, here is what you get when you don't fish it. There are a lot of different things that we've done out there over the years related to sea bass; and sea bass has been a popular subject in recent years.

Just to show you what kind of densities you can get out there, and this is before they really started rebuilding – and I will show you something in a second where – and this is where initially Area 51 there was a lot of grouper, and now it is becoming kind of a sea bass dominant area; but you get some amazing densities of these fish. We have documented them spawning on the reef.

In effect you have created a little sea bass farm here. You think about the eggs float off, the larvae float off. You have the potential to augment the spawning behavior and products off the natural bottom. That solid mass of fish is sea bass. If you recall, the council engaged in a rebuilding of the sea bass stock that did rather well. It surpassed expectations time-wise, and that is what we were seeing out on Area 51 a year or so ago.

When the fishermen were telling us, well, they are already rebuilt; we can't catch anything but sea bass; well, that is what it looked like, not necessarily all the areas looked like that, but that is what we were seeing out on our site. Definitely a lot of sea bass out there, so that was a good sign.

Now, to follow this through, we're not able outside of what we've done in shallow water, and there is Area 51 and there is also Area 53, which is in 100 feet of water. I'll show you that in a second. The idea is, okay, what would it take to actually create an artificial reef MPA? Well, the council actually followed through on that.

In '09, I believe it was, established the Charleston Deep Artificial Reef MPA. Of course, this was an area in 350, 400 feet of water, a little bit farther out. It is part of the Deepwater MPA Complex out there to enhance the rebuild of deep water snapper grouper species. That sat there for years and years.

The original plan was we were going to put the Cooper River Bridge on there. That didn't work out because of the price of the steel. Plan B was to get an aircraft carrier out there. That didn't work out because of the price of scrap steel. Plan C was luckily we got support from the South Carolina Memorial Reef folks, which was basically a group of pelagic blue water fishermen.

These are guys that are interested in marlin and sailfish and tuna and wahoo and dolphin; but they had a desire to create a reef as a memorial to friends and family that had passed on. They wanted to do it in deep water. We had a permit in deep water; we had an MPA in deep water, which was a Type 2 MPA, which would allow fishing for pelagics over the reef.

It was sort of a marriage made in heaven, I guess. These guys went out and raised almost half a million dollars to support this project. This was the basic concept. We got a hold of two 270-foot barges, 70-foot beams. Those are big barges. The original plan of a ship didn't work out; but we basically were able to get these barges and build them up to create some profile.

This is actually what the first barge looks like. The second barge is being prepared right now. We're hoping to have both of the barges on the bottom this month. We've been running into weather delays. Originally they were going to take one and then the second, but now I think they're going to take them both at the same time.

This will be the beginning of the first Deepwater Artificial Reef MPA in existence. If you are familiar with the Snowy Wreck off of North Carolina, which was a wreck in fairly deep water, when it was found it was covered with snowy grouper. That has been experienced in other areas where wrecks have been lost for a long time, fishermen find them and the biomass on there is just amazing.

Our concept here was let's create our own sort of snowy wreck in deeper waters. Now you can also – if you are going to carry this concept forward, you would like to be able to move into shallower water. What you're looking at there is the little brown boxes are our existing artificial reefs; but it would be nice at some point if we could mix in these shallower waters, actual sites that are designated as no fish artificial reefs, MPAs or SMZs, however we did that. But again the desire would be to have these in various depths, shallower than deep where we are now in 350, to provide support for, say, snapper grouper species in various stages in their life history.

That is a nice little gag there that is on our Area 51, I believe. He is in 70 feet of water, not much bigger than a sea bass. But you can see that if you had a series of these sites that could support

the fish you could, one, demonstrate the concept of MPAs in these different depths of water; and you could actually provide some benefit to the fish as well.

Warsaw grouper; Warsaw don't spend all their life out in deep water. You will see gag. This is Area 53, which is about 100 feet of water, which was established actually with the help of some council support. We did this back in 2003. This isn't real recent video, but it is actually much more grown over and looks much more like live bottom now.

This just gives you an idea of what – and again you can show this to fishermen. It kind of demonstrates, look, here is what can happen if we set aside, whether it is natural hard bottoms or we build some; this is what you can get. This is one way of using artificial reefs as a fishery management tool. It is a different way of using the tool. The way we use the tool now; we build it, we fish it; we build it, we fish it.

What I am proposing and we have been saying for a while is let's look at using the tool in a different way and perhaps a powerful way that we build it, we don't fish it and what can you derive from that. We had hoped to – actually we applied for about almost $2 million in stimulus money when that was floating around.

We were able to show, I thought quite well, we had shovel-ready jobs. We had the ability to produce long-term economic benefits from this. Our concept was to scale up what you're seeing in like Area 53. In that little picture, what you saw was less than $10,000.00 invested. Imagine scaling that up to a million dollars; it is pretty impressive.

But that is kind of our concept, and that is where we would – again thinking outside the box. Think of artificial reefs as a potential tool to use in a different way than we've used them. With that; does anybody recognize that young lady? That is little Anna Martin, council staff, or was.

MR. STREET: Have you had lionfish show up on any of the artificial reefs?

MR. BELL: Yes, primarily on the deeper reefs. I've mentioned we have some reefs out in 110. We've seen them out there fairly consistently, not in huge numbers, and the diver's kind of take care of the ones they see when they see them. But that, of course, is a concern for all of us in hard bottoms anywhere out there. We have seen them as shallow as 60 feet, and that was like one or two, I think. So far they seem to be out a little bit deeper.

MR. MIKELL: Mel, this is a planted question. This is not my question but it was proposed to me yesterday by one of the members that has put up evidently a fair amount of money for those two barges. He's a little concerned about since it is going in an MPA and there is a lot of discussion there about making the MPAs non-fishing, period, trolling and for pelagics and all. That was not part of the deal when they originally came up with this idea.

MR. BELL: Yes; and I can tell you that – I can't remember which meeting it was, but the council was quite clear to make it – and we put that on record that we are looking at Type 2 MPAs. What we have is Type 2 MPAs, and that is about as clear as we could make it. That is not on the table, as far as I'm concerned.

Yes, there is discussion, and that is a different way to use an MPA as a Type 1; but the ones we have right now were established as Type 2. That is the intent and it is nobody is pushing that. I don't see that happening. Because, you're right, when they agreed to support this project and all, that was the world they were supporting. Nothing has changed as far as I'm concerned. There has been discussion of Type 1, but it is just discussion in the concept of dealing with MPAs.

MR. MIKELL: Yes; I think the discussion is what is bothering them.

MR. BELL: I can't remember what meeting it was, but we actually passed a motion saying that Type 2 is what we're dealing with. They don't need to worry.

MR. MIKELL: Well, I think there are four of you present; at least four of you on the commission present; and I think they want to be heard as we want to be able to at least fish on top.

MR. BELL: Oh yes, yes, I understand. Think about this; there is a benefit in that, too, from an enforceability standpoint. If you put a box out there and nobody can go in the box, well, if you have the ability to detect people that's great; but if you've got people that are legitimately in the box, now you've got eyes and ears out there. It actually enhances I think the enforceability of an MPA in having it as Type 2, my opinion. Yes, Gregg.

MR.WAUGH: Just to reiterate what Mel said; the Expert MPA Workgroup made a recommendation; and even amongst them there is some disagreement over that recommendation; but they made a recommendation for Type 1, which is no fishing. The council discussed that, as Mel said.

The council has made clear going forward they are only considering Type 2. There is not any "council discussion" about prohibiting all fishing. It would be very helpful for you all as members of the AP, that if you ever hear any of that misinformation, to correct it. That would be very helpful.

MR. MIKELL: That is a wonderful partnership that has been started, and it should be easy to add to.

MR. BELL: Yes; and I again mentioned it, but we do really appreciate what the Memorial Reef guys have done us. That is the most money that has ever been raised by any single group in supporting artificial reef work. This is a new concept. It is something that is kind of out of the box. Again, it was just their interest and our interest matched, and they did all the ground work to make it happen. We greatly appreciate it.

MS. GREGG: Mel, well one, thing, I think that like Gregg was saying with Type 1 and Type 2; some of the difficulty that the council has with going ahead and designating MPAs where no fishing at all was allowed is because of the HMS species, because they are not under council control.

When you do a Type 1 or a Type 2, you are allowing some fishing. Especially since the HMS fishing; unless you get HMS buy-in and have them go ahead and designate those areas also; then it makes it a little bit easier. Well, that is what the extent of the council can do. On another

issue, I was wondering in Florida we've looked at also doing the reefs that are unpublished and the public doesn't know about them.

But the problem is in Florida – and I was wondering if you guys either in North Carolina or South Carolina encountered this situation – in Florida we have such broad public records, laws that pretty much anything we produce, anything that is paid for with state money; there is very little that is exempted from public records open to the public.

Whenever we have tried to do research reefs and things like that that we haven't publicly – a lot of people in the public don't know about it, somebody always finds out; and they always come back to us, okay, we want the coordinates for that reef. At that point it is not an unpublished reef and we can't really do research on it because they get the coordinates. We have looked into trying to get an exemption for public records for at least mitigation reefs and some research reefs and things like that. I don't know how public records' information is done in other states, so I was wondering if you came to the same situation.

MR. BELL: That would probably be FOIAable if someone wanted to do that. No one has done that to us. These are fairly small scale. I mentioned that the sites were somewhat compromised a little bit, but not to the point where you could tell. We know that because I was kidding early on we would occasionally find a beer can down there and we knew state employees weren't supposed to be drinking while they worked; so somebody had been out there.

It has never really been a big issue. I will also say that because we had to get these permitted through the Corps, NOS has actually thrown us under the bus; but we just don't talk about that. If people wanted to find these reefs, they could find the box; but the little tiny patch reef inside the box would be a little more difficult. That is a problem with this. I know Bill Lindberg has done a lot of stuff down in the Gulf of Mexico, and I've often wondered how they kept that – he is on a larger scale, too. But, Jenks, don't get any ideas, okay.

MR. MIKELL: I'm not, but I was just going to back up what you said in that I've kind of been involved with the idea; not that I came up with it or anything else; but I've asked the question, where is it? No answer; and I've asked it more than once and I've asked more than one person that knew where it was and nobody ever said anything about it.

MR. BELL: But you didn't ask in a real hard way.

MR. MIKELL: No.

MR. BELL: Well, Frank Gibson asks all the time.

MR. MIKELL: Well, right, so it has been well guarded and they should be proud of themselves.

MR. BELL: Honestly, I will give credit to our fishermen. We show them things like this, and Jenks has seen this stuff before and some of our fishermen. Bill has maybe seen some of it. They kind of get what we're trying to do, and nobody has been hard core around it and said, well, you've got to tell me, I really want to know. They appreciate I think what we're trying to do. We appreciate your support in not pushing that issue. But, you are right, at some point the

regulatory process of making this work for real would be a hurdle we would have to get across somehow.

MR. MIKELL: One more question; are the live cameras still out there?

MR. BELL: I can neither confirm nor deny that. Actually, are you talking about the ones that were off the Georgia Tower?

MR. MIKELL: No.

DR. SEDBERRY: Well, I can answer that question about the ones that are on the Georgia Tower. No, they are no longer there. Nothing is on those towers anymore, and I think they are actually going to be used as artificial reefs. I just did want to say that Grays Reef National Marine Sanctuary has an 8 square mile no fishing zone at the same depth, 70 feet, which would be really good for a comparison study.

MR. BELL: Yes; I've talked to a couple of guys down there about that some time. That would be great.

MR. GEER: Are there any other questions for Mel?

DR. LANEY: Not so much a question, Mr. Chairman, but just an observation with regard to this issue of being able to keep that information confidential. It seems to me that there is some inequity here with regard to confidentiality. If the harvest information for public trust resources is kept confidential, if there is a very small number of fishermen involved in a given fishery, it seems to me that there ought to be some sort of provision for keeping site locations confidential if they are constructed solely for research purposes or for the benefit of the fishery. Maybe that is something we could pursue in the regulatory arena if the concept becomes widespread and we move ahead with it in the future.

MR. BELL: I think where you run into differences there is in dealing with folks that are deriving their income from an activity or whatever; then that is where it gets real touchy. I agree, it would be neat if you could do that.

DR. LANEY: Understood, but it is still a public trust resource; and in this case you are establishing a site that is going to generate resources for the rest of the public and you are keeping is secret so that a very few members of the public don't benefit disproportionately from knowing that location. It seems to me that gets to the point of equitable distribution of the resource, which ought to be considered here as well. Somehow I think that should play into our discussion of how to protect these sites.

MR. STREET: You said you have done some tagging on Area 51. Have you gotten tagged fish back from other sites that are open to fishing?

MR. BELL: Yes, I mentioned some of that. We have documented movement as far as 60 miles away on natural bottom. That was sea bass. If you know sea bass, well, they are pretty good – a lot of site fidelity there. But we did document movement of like a mile, mile and a half between the sites. We have had a couple recoveries out on the hard-bottom areas; so, yes, a little bit.

MR. PARKER: I started chartering about three years after Mel came on staff there. At that time I think we had the Tire Reef, the Hilton Head Reef, and Betsy Ross Reef. Well, you all can see what has happened since then. I think the budget he said at a fishing club meeting at that time was zero back then. A lot of work has gone on. There was a lot of cooperation between fishing clubs and people that wanted to see this happen, and it has really happened.

I don't think you would get any argument from me or any other good-minded fisherman about making an MPA. It sounds like a great idea. What has been done in the last 20, 25 years is fantastic. It has been a boon to recreational fishermen and charter fishermen. I've seen the charter fleet in Hilton Head go from 7 or 8 boats in 1986; and now we've probably got 50. Half of those utilize those artificial reefs daily during the summer especially. Thank you, good job.

DR. WILBER: Mel, we're seeing more and more proposals for estuarine artificial reefs not in South Carolina, but I expect to see such a proposal soon. Does your office have a sort of view on these estuarine artificial reefs?

MR. BELL: We have an inshore oyster enhancement program, and our inshore reefs are oyster reefs. We've played around with some designs that we were trying to do some things like Georgia was doing with inshore reefs. We ran into some issues with our legal counsel about hazards to navigation and things; and so our department has not allowed us to do conventional reef construction.

However, we are doing some oyster stuff, including the use of oyster castles, if you're familiar with those, which look like an artificial reef structure. We're spending most of our time in nearshore and offshore waters. The stuff we're doing inshore is oyster reef enhancement with shell and things.

DR. WILBER: Given the counsel's objection, why do we do artificial reefs inside Lakes Marion and Moultrie? Aren't they navigation issues, too?

MR. BELL: I'm not going to speak to that. I'm just telling you when we originally brought this idea up, we were told, no, don't do that. That was a number of years ago. That might change. But, yes, good point; that can be rather shallow up there at times.

MR. PARKER: Thee Paris Island Reef is right close by, 15 minutes from my dock. That has been a good reef, but we have such tide range. Well, this past week with new moon the tide range was running 8 or 9 feet. It gets real difficult to fish that area. Fortunately, that particular reef, some of it is in 20 to 30 feet of water, but some of it is in 15 to 16, 17 feet of water.

You adjust when that tide is really screaming; but it is good for sheepshead this time of year. The other day I was over there in the deeper water for a little bit and caught three legal-sized black sea bass and a whole bunch of close to legal-size sea bass. That is how the sea bass stocks are growing and utilizing even that estuarine reef.

MR. BELL: That is a real unique system in that the Broad River is almost like nearshore waters. It is very high salinity.

MR. PARKER: Yes, it is. No big freshwater outfalls into there.

MR. GEER: All right, folks I am going to make this very brief, because it has already been said before, as Mel said, but we have a reef program in Georgia as well, lots of different partners. Our money has been slashed as well. We used to get about 300 to $500,000 from the state. We haven't seen that in a number of years.

We also suffer from the fact that Henry Ansley ran this program for years and years and years. A lot of you know who he was. When he retired less than 10 years ago, we've had five different people run the program because of transitions and retirements and everything else. But January Murray is not running it and we're trying to build the program back up. She also has to run an oyster restoration program as well.

It is her, one biologist and a technician that have to do all that work. She does a good job; she relies on a lot of donations from folks. I've just got some quick videos. I don't have a lot of underwater. She put this together, a lot of sinking of barges. It is going down, but some of the materials; Georgia Power telephone poles that we were putting out, and pretty rough weather on this day; but I'm not going to show the whole thing sinking.

As Mel said, different materials; tanks, subway cars, somebody mentioned the Navy Towers, which are down here in the corner. We are working with the Navy right now to take ownership of them, so we've had to go out there and dive on them and determine what is beneath them; so when the Navy falls them, it won't be impacting anything else.

We will not take responsibility or ownership for them until they are on the bottom at the right depth. That is something that we do. When we hire a contractor to take the barge out there, they don't get paid and we're not responsible for it until it is on the bottom where we want it in the right place.

We've had a couple of shrimpers try to take a barge offshore in the past and that didn't work out too well. This is a map of our sites. We have 30 sites over all. There's Grays Reef, the Navy Towers are way out here, and there are eight of those. When we take ownership of them, we'll have 30 offshore reefs total.

I just want to show this real quick. Somebody was mentioning earlier as soon as you put a power ball down, what it looks like, the animals start coming on to it immediately. We had barracuda on ours within like minutes of putting it down. They dumped all this material over the side, and once it was down they had barracuda on it immediately.

Ideally when you go out there, you try to fill up a barge with as much material as possible just so you make it as cost effective. The power balls are routinely what we use, but that is what they look like on the bottom about three hours later. You can see in a couple pictures there is barracuda around. Visibility off of Georgia is nothing like it is off of South Carolina and North Carolina. Many times our visibility is zero. That was a pretty good day.

This is 11 months later and what it looks like afterwards; a lot of black sea bass and other species, spadefish are really popular on these reefs. You see a lot of spadefish around them, triggerfish as well; so the same thing everybody else has been talking about. This is just some of

the accomplishments that January has done in the last couple years. We had to renew our permit and put the Navy Tower coordinates in that.

We are in the process of getting that all done. We had three beach reefs which were inside of state waters that were individually permitted. We incorporated them into that permit as well. We are just trying to get the staging areas as well, just getting this material. Georgia Power is constantly coming to us with telephone poles. All right, where are you going to store these things? We don't have the facilities on our campus to do it; so just trying to find places we can do that.

Clarkston Poultry Farms is giving us chicken coops with these big steel chicken coops, which seem to work well. Those are just some of the deployments she has done in the last year. Our dive team, we've noticed that our dive team; the average age was creeping over 45 of our dive team, which is probably not very good and it was actually going down in numbers.

We basically started recruiting a lot of the newer staff and saying, hey, are you certified? No, well, go get certified. We are ramping that back up and getting them all certified. We have done away with our buoy system as well just for cost. About 7 or 8 years ago we asked the recreational anglers; did they want us to keep it?

They wanted us to maintain the buoys because it was a source of bait when they went out there; but go get your bait somewhere else, it is too expensive for us to maintain anymore. Like I said, the Navy Towers, we're in the process of working with them to try to get those all under our purview as well. That is just more of what we're doing.

We do not have a strategic plan or a management plan yet, and that is one of the things we're working on. We just hired a new biologist, so we're hoping that with more staff we'll be able to get these things done. That is the goal of this project in the next couple years is to have a management plan.

We're looking at Florida's; we're looking at North Carolina's and South Carolina's. We don't have to reinvent the wheel and use a lot of the same things they are using and come up with a plan. This is just another barge that we just sunk recently, obviously a much different day, nicer weather. I think the problem was it took too long to sink. By the time it was sunk, it was 5:30 in the afternoon and we couldn't dive on it.

Usually after something goes down, we dive on it immediately to verify its location and what it looks like. We do sidescan sonar as well. We are concentrating a lot of our sidescan sonar on our inshore reef program. We were about to give up on this program just because we hadn't put materials there since the mid-nineties.

Some of it had subsided over time, but then some of the fishing clubs were saying, hey, because of fuel cost, closures in federal waters, demographics, people getting older and they don't want to run 30 miles offshore; there was a lot of renewed interest in it. January has gone ahead and re-permitted all the reefs, to get them all under one comprehensive permit; so we only have to do one permit every five years.

Some of the materials were still there and we did sidescan sonar. This is one site, this is a site – we haven't put material on this one site in 20 years. You can still see these are just fads PVC, concrete with PVC coming off of them, and you can see them in the sidescan sonar, and these are the chicken coops. The material is still there.

What we're doing now is we're assessing those sites; and if the material has subsided completely and we can't find anything, chances are we may not put anymore material. These are very small sites; they are subtidal for the most part. They are usually less than 200 by 800 feet in size off to the side of the channel.

We have to mark them with markers, and that is the expensive part. Each one of those markers is about 5 to $7,000. When somebody hits one or breaks one off or it just deteriorates over time; that is a pretty good expense to replace those. We're doing a lot of sidescan sonar inshore right now looking at these and trying to vamp this up as well. We're using materials of opportunity.

If somebody has material and it is near one of these sites and they are willing to help pay the costs, and they are okay with putting it there; that is where we put it. We are trying to work on a couple of area access as well and do some of our research. We're probably going to have some of those same issues; people are going to find these sites over time. But that is all I have, because everyone else has already talked about it. I think we are all pretty much doing about the same kind of work. I'll answer any questions that anybody has or comments. It has all been said.

DR. SEDBERRY: I find the video of the artificial reef 11 months after deployment just loaded with black sea bass very interesting. Those black sea bass weren't spawned there and didn't grow up there; they are coming from someplace else. Is that an issue that you are robbing Peter to pay Paul?

MR. GEER: Thanks, George. No, obviously, I haven't really thought about that; but for that first year, yes, it would be an issue. I would think there would be that for any of these materials that you put down. I never thought of that.

MR. BELL: George and I have had this discussion before. Another way of looking at this is they are coming from one hard-bottom habitat and moving to another, certainly. You're right, they didn't just appear. But they vacated habitat, which could be repopulated. Over time everything moves around. We know they have good site fidelity, but the little suckers will move, and at some point they get crowded enough and they move.

Why they all decide to move to that versus where they were, I don't know, but I think over time it would balance out. The same is if you were to fish down a natural marl outcropping or something; that is available if you were to leave that alone. You might see the same sort of thing, but that is a very good question. I don't know that we have an answer.

MR. WATTERSON: To some degree it depends on whether they are habitat limited or not, but I did a lot of mark/recapture studies on red snapper in the Gulf of Mexico back in the mid-nineties. We tagged about 3,000 or so red snapper and looked at their movements over time. For the most part, they had very small-scale, short-term movements.

They would basically stay in the same area and move around a little bit; but during the course of our study, right in the middle of it we had Hurricane Opal come through, which was a Category 5 at the time it passed our reef site. This was off of Alabama, just south of Mobile Bay. After that we were getting tag returns all the way from the west coast of Florida, so the storm really moved those fish around and spread them out a lot. There are different factors that can contribute to the fish moving and taking up residency in different areas.

MR. STREET: I'm interested in the trend toward not marking these reefs. I know if the thing is in more than 100 feet of water or something, it is probably not going to be an issue as far as navigation is concerned; but if you are up in shallower water; 30, 40 feet and the thing has a 10-foot profile, ships can hit it.

Of course, when you get in the estuary, people need to know where these things are. I guess my question is how are you differentiating in policy of not marking among shallow and deeper sites; and what are you doing about estuarine reefs insofar as marking them?

MR. GEER: In Georgia, for the offshore there is a minimum clearance on the permits. Each one of these has a minimum clearance that you have that you are required to. We only have one subtidal reef in Georgia right now that is associated right next to a fishing dock, so that is not really an issue. It could be. I know, Greg, the one that you showed, it was only in 21 feet of water. What is the clearance on that?

MR. BODNAR: Most of our inshore estuarine reef sites do have that minimum vertical clearance, and we're usually looking at – in the 20 foot one, if I remember correctly, I think profile only needs to be about 6 foot. They are all marked. All of our reef sites inshore are 4 point buoys. We are required by Coast Guard and all of that to mark all of our sites as well.

MR. GEER: I think that is part of it is during the permitting process when it is reviewed, if there is not enough clearance, markers have to be maintained.

MR. BELL: To weigh in on that – and that is a perfect example up there – you can see that they have a good tidal range in Georgia, so their reefs are basically intertidal. For us, our oysters are in intertidal so our oyster reefs are intertidal. That is what we were proposing to do. That is what our chief legal counsel at the time said; no, you can't do that because these are potential hazards to navigation.

We said, well, okay, we'll mark them like this. Well, the markers are a potential hazard to navigation; so we just kind of stopped arguing at that point. But that is pretty much what we were proposing to do in our waters, but what we do now is just conventional shell. We may try that again; we have a new chief legal counsel on board now. We may give her another shot.

MR. GEER: Are there any other questions about mine or any of the other ones at this point or comments? It took a little bit longer than we wanted to, but we are trying to develop a policy on artificial reefs; and this is a good start so you can all get a handle on what everyone is doing. It is pretty similar. There are some good guidelines on it out there on how these things are constructed and how they react with fish species and things like that.

MR. PUGLIESE: Just some quick comments before you go ahead and take a break; that was a lot to take, but I think some really critical things. I do apologize to Florida for not integrating – this kind of unfolded at this level of detail like in a day or so. But as one of the bigger programs in the southeast, feel well-assured that you will be represented as we move forward with all of these aspects.

Really, some of the driving forces, I think in our region the whole artificial reef use, the fact that these are essential fish habitat from the get-go; I think that idea of these functioning as habitat is something that from the region and from the council has been a foundation to the degree where the special management zone areas are actually designated as essential fish habitat-habitat areas of particular concern adds additional justification.

Then if those are also functioning as spawning locations for snapper grouper, those are also identified as habitat areas of particular concern. I think there is some real significance in terms of the value these are providing and some of both the regulatory future that you may see as well as providing a regional context; and maybe even refining some of the guidelines and guidance that you are getting from some of the broader systems that have been in collaboration with the Gulf and Atlantic States Commission.

Some of those developed ones are developed for a broader scope. This is an opportunity to look at the individual programs and really maybe shore up some of those types of recommendations into the future and connect it and enhance the information that is available on some things that have been highlighted today.

A lot of the research ongoing is going to be some critical backup information for essential fish habitats information on species. We do have sections in the Fishery Ecosystem Plan, so this also springs off the collaboration and coordination with these different groups and individuals that will be named to participate in the update and refinement of both those sections as well as the research sections.

One other aspect is an effort that we're trying to enhance this in connection to our Regional Habitat and Ecosystem Atlas. We've been working with some of the states already to integrate all the distribution information; but we have the unique opportunity of having a system that is up and running to integrate not only photography but even videography, some of the more recent refined sidescan imagery and really present it for the entire region.

As you have seen before, in addition to the digital dashboard and the opportunity as we proceed with policy development and the scope here of integrating the artificial reef system discussion, research, et cetera, into that system; so I think that all feeds into the opportunity to develop a policy as we move forward.

I think one of the things is we are definitely going to be either having webinars to proceed with some of this development but also may even have the artificial reef sessions. At the fall meeting, which we will be holding in FWRI again – at least that is the intent right now – we'll make sure that we keep this great discussion and highlighting of this information moving forward.

DR. WILBER: I assume in the next few months we'll begin actually drafting the council's artificial reef policy statement. Aside from the obvious stuff about locations and materials that

would probably end up in such a statement; there are three issues that I deal with in the regulatory arena that it would be nice to have some pronouncement on in the statement.

One is a clear statement supporting estuarine artificial reefs to the extent allowable under state laws, regulations and programs. That would be good. The other one is a statement discouraging what I will call personal artificial reefs, folks who go out and clandestinely dump stuff on their own, not part of approved artificial reef programs.

The last one – and this one I expect to be very controversial – is whether or not you can build an artificial reef with 10 million cubic yards of sand, so basically building a stable berm offshore or in an occurrence with a little bit of armoring so that it has some persistence and in fact provides a lot of the local current regimes as well as the FAD type attraction to fish.

Such a berm was proposed for the Savannah Harbor Expansion Project, and it was soundly beaten up, but it may be proposed for Charleston Harbor deepening, and it is something that has been done successfully in the Gulf of Mexico. I expect to see more proposals for it in the South Atlantic.

MR. MIKELL: Pace, talk about that Savannah deal a little bit. I would like to know a little bit more about that.

DR. WILBER: There is a sand berm 40 million cubic yards off of the entrance to Mobile Bay in the Gulf of Mexico that was built for the dual purpose of attenuating waves to protect the shoreline on Dauphin Island, but also to serve as a fish attraction device. The Corps built this in the 1980s.

It has been studied somewhat, but in very obscure gray literature, filing cabinet only type reports that have documented why it serves as a fish attraction device. They've documented red snapper and stuff there and all kinds of cool things. There are anecdotal kind of information about smaller berms in the neighborhood of a few million cubic yards that were built off of Wilmington and Virginia, but that stuff is even sketchier in terms of its documentation.

Coming back to Savannah Harbor, they were – I'm just going to use a ballpark kind of number here, but roughly 10 or so million cubic yards of sand for the extension of the Savannah Harbor entrance channel out to the 50-foot contour was going to need to be hauled an awfully long way to make it to the ocean dredge material disposal site.

The Corps was looking for a cheaper way to dispose of that material and identified some spots north and south of the proposed channel extension that based upon the opinion of some fishery biologists would be a good place to put a fish attraction device. They started kind of sketching out what 10 million cubic yards of sand would look like out there, investigating the possibility of using coarser grained material to be placed on certain flat flanks of this pile, so that it would persist longer rather than just simply erode away, but also looking at ways to create various microhabitats across the berm and orient it to different types of currents and stuff like that.

I personally have supported continued exploration of those ideas, but we didn't get very far in that discussion with Savannah. I do think it is going to come up for Charleston. It has even

come up in some weird kind of context like for beach nourishment; but Wilmington, Charleston those are places where they can come up again.

DR. ELKINS: Just to address your first point about council policy supporting estuarine, both artificial reefs and oyster restoration for the purposes of habitat; I think probably these are very expensive endeavors. I would encourage the council or a statement to encourage the states to stop destructive fishing practices on natural reefs that are present already in deep waters of the Pamlico, for example. I am referring to oyster dredging on oyster rock. It doesn't make sense to put down an oyster reef right next to where they are dredging.

MS. GREGG: Question; are artificial reefs considered essential fish habitat officially?

MR. PUGLIESE: Yes, they are, because we've taken the step beyond that to designate the special management zones that are artificial reefs with additional regulations as essential fish habitat area of particular concern, which would be a subset of the overall.

DR. WILBER: Which is unlike the Gulf of Mexico, which freaks out when you talk about making artificial reefs EFH, but we're more progressive here on this side.

MS. GREGG: Well, we're kind of stuck in the middle. That is why I was curious.

MR. PUGLIESE: Just to that point; I think again that is one of the reasons we are focused, because there is pretty significant difference in discussion sometimes between the South Atlantic, the Gulf, and even north into the Mid-Atlantic and New England areas that are dealing with some of these issues right now.

MS. GREGG: I was stuck in one of those Gulf discussions not too long ago, so that is why I was asking.

MR. GEER: All right, what do you say we take a 15-minute break and get back here about 11:05, and we'll jump into the Energy Policy Statement?

MR. GEER: All right, the next item on the agenda is we are going back and we're going to initiate the policy statement for energy. I'm going to let Roger and Pace take the lead on that.

MR. PUGLIESE: Okay, what everybody was provided under Attachment 8A and 8B were the existing redraft of the policy for energy exploration, development, transportation and hydropower licensing. The document that was included – we started addressing an update to this a while back and have been adding pieces to it.

We really have not done justice to really catch up with where everything is going on all aspects of energy, with regard to the movement on oil and gas, with regard to the alternative energies. This document actually did include some of those in the revisions. Some of the initial actions had to do with integrating and discussing the whole hydropower licensing, adding more information relative to that into this document.

Also, the LNG, when this was being revised or looked at revision, was another area that the liquid natural gas systems were integrated into here in preliminary information. The risks

associated with some of these different activities were highlighted and integrated in the previous version of this document. Now, again, it has got some of the same types of consistencies in terms of going back and shoring up the species and habitats associated with it to ensure the most recent EFH designations.

There have been some new additions with the Snapper Grouper FMP, and species like tilefish, the MPAs being added in, the C-HAPCs being added in as EFH-HAPPCs; those types of things need to be shored up and added into the system. The other activities I mentioned, the LNGs were identified.

Now this goes back far enough that it actually had connections back to when we were talking about on the oil and gas side still integrating the very specific recommendations that were associated with the proposals off the state of North Carolina and The Point. Some of those may actually be still relevant in terms of more general recommendations; but those are still going almost all the way back to some of the original recommendations in the council supporting some of the inconsistency determinations, CZM determinations the state of North Carolina had. That needs to be shore up and brought in.

What we're really trying to do today was really just to kick off the initial discussion about how some of these different areas are really lacking within this policy. As I said before, we did have the beginnings of the alternate energy as shown here; and a lot of it is tied to some of the recommendations and the information needs that were highlighted back in some of the MMS, before it became BOEM, back in the earlier times

Some of those are still fairly relevant, but we've gone far past that in terms of not only the activities associated with all different things from ocean turbine work off of the state of Florida to the movement on wind and licensing of wind test beds. The most recent – literally yesterday off Georgia I guess they are testing for the platform to collect the oceanographic information that is being proposed right now.

To other activities support information such as a fairly extensive effort that was done to begin highlighting and identifying some of the issues relative to sound and fish that energy exploration and activities have; that is something that we do not have any of that information include in here, and there has been a lot of work done – and a coordinated effort done by BOEM to really highlight the information needs and some of the potential threats and impacts from seismic testing, from just even basic background noise and settlement of, say, species on reef systems.

There is a lot that we can shore up and add into this policy. That really is kind of the general context that for the time when it was proposed did focus specifically and generally – specifically on some of the ongoing activities in oil and gas, and more generally on, say, really just preliminary information on alternative energies and again, say, the LNG, liquid natural gas activities that were ongoing and more active at the time that we last looked at this policy statement.

That is what we have in hand and what will be moving forward in terms of trying to look at the update to this. I go back to Pace; and just in terms of his context and where he sees us going, what is going on internally with NOAA and different things that may be moving forward faster in the queue with regard to energy development in our region.

DR. WILBER: My crystal ball says LNG for the South Atlantic is dead. I haven't heard any talk of any newly proposed LNG ports for the South Atlantic; and the one that was proposed for offshore pulled the plug in Florida several years back. That said, Elba Island in Georgia, which is a land-based LNG port, is in the process of re-plumbing itself so that it can be an exporter of LNG as opposed to an importer of LNG; but that is a pretty minor kind of tweak at least from a regulatory perspective. Wind is obviously the big new thing to add.

Now, the Atlantic States Marine Fisheries Commission has completed a review of the regulatory and fisheries-related issues for offshore wind farms. I kind of wonder if that can just sort of be an appendix to the South Atlantic Council's Energy Policy Statement rather than try to water it down by summarizing it and putting it in. You could save time in production of the council's policy statement just by saying, hey, we adopt this Atlantic States thing that is in Appendix A or something like that.

MR. PUGLIESE: Yes; I think that was one of the things I think we definitely wanted to look at and see what the considerations are for that and I guess really look at if there are things beyond what that policy may say for our region that we would like to kind of shore up; and make the connections to – we do have information systems with the atlas and different things that are intended to provide background information and a foundation of wind analysis for, say, wind or any of these other types of activities offshore are addressing.

I guess I would have to look back and see to what degree they added in the whole discussions on sound and things like that. I think that was fairly significant and new and was done after that policy had been finalized and developed.

DR. WILBER: It does include sound since I co-authored part of that Atlantic States thing. There is not a clear signal from the scientific community on how to best deal with sound. You get some fairly divergent perspectives on how to deal with it. What ended up in the Atlantic States Commission statement was how the northwest region of the NOAA Fisheries deals with sound out there. There are other ways to deal with it.

If the council wants to take a particular approach that is different from the one that is in the Atlantic States Commission's Offshore Wind Policy, then that would be something to do. I think the operational issue is that you have this fairly detailed policy statement that is about eight pages long from the commission. It kind of defies summarization; so how to add those legitimate other issues that you want to put in for the council but not kind of make the whole thing too fragmentary; but good "wordsmithers" can figure out how to do that.

MR. PUGLIESE: Yes; and I think all I was trying to say was that we would try to capture it, because in the past where there are other policies like ASMFC has developed, we have either adopted them as appendices to the Fishery Ecosystem Plan in some aspects or have cited them in the existing policy. I think that doesn't preclude that.

It is just to make sure that there may be information beyond what is included for that; because there was a lot that was done at that workshop that really kind of opened a lot of people's eyes in terms of the fish aspects. I would expect to a great degree even the Pacific Northwest or the

Northwest Science Center was addressing mostly the mammal issues that we continue to have so much focus on the mammal side of this.

That was one of the first times that it put into so many contexts of everything from settlement into reef systems to the significant impacts of seismic testing over long periods of time and real changes that were seen internationally with Norway's activities, et cetera. It is just one of those abilities to make sure that we cover our bases on that. But I would think you're right; why reinvent the wheel if we can draw on how much has been done. We can look at that in the context and add that to the entire pot as we move forward on the energy development.

MR. WATTERSON: I just had a quick question about what Pace said. Were you referring to the 2008 Fisheries Hydro-Acoustic Workshop Criteria that was set up from Fish and Wildlife and NMFS in the Northwest?

DR. WILBER: No. If there is a physicist in the room, please speak up. Basically when you talk about sound in the water, they kind of talk about it in terms of energy. Then when you talk about the impacts to fish, marine mammals, whatever, birds, you can quantify that energy in terms of the total amount of energy experienced in a 24-hour period, the peak amount of energy experienced in a moment, the amount of energy in a two-hour period. There is almost an infinite number of ways to quantify that measurement.

Then there is an almost infinite number of ways to actually put a device out there to measure it. Each of those measurement devices have their own problems, too. In terms of what is the best way to tell whether a threshold has been exceeded relative to salmon or dolphin or turtles or a fish with a swim bladder or something like that; there are like entire workshops on just trying to answer that kind of question. Rather than trying to sort through all that stuff; that is the challenge.

DR. WATTERSON: What I was just referring to; NMFS and U.S. Fish & Wildlife had gotten a group of scientists together in 2008, and they called it the Fisheries Hydro-Acoustic Working Group. They established criteria for sound in the water and their impacts to fish. They broke it into several different categories, actually.

They have two different injury categories, one for fish under two grams, and one for fish greater than two grams, and then one for behavioral impacts. The first two are for injury; the last one is for behavioral. Then they have separate criteria for vibratory pile-driving. This primarily goes back to pile-driving. We use it extensively. They do have certain levels of criteria established.

DR. WILBER: Yes; the issue is how to measure where you are with respect to those criteria. I think the workshop you are talking about; I think the lead person from NOAA Fisheries was John Stadler. There is not a NOAA Fisheries-wide accepted policy for how to do it in terms of what the criteria should be and how they should best be measured. A lot of the formulas are kind of complex, so they deal with simplified versions of the formulas. It is just amazing to me how complicated it got very quickly especially for someone who got a D in calculus.

MR. PUGLIESE: I think one of the real opportunities we have, though, is that in development of this is some of the additional connections. One thing that I've highlighted before is our development of a species-specific online system, the ecospecies system. One of the evolutions I

would like to see us go down the road is for every single species begin to integrate both to what degree they are sound-producing species or have associations relative to spawning and sound.

The bottom line is potential threats from sound. Then you have basically is there a vulnerability to those types of thing? That applies to other things beyond sound, but I think that is one that really is lacking. Considering how many species we do have in the region that are sound-producing or tied to it; and it gets to some of the behavioral type of things such as settlement issues and all that.

I think there is some real good connections to some of the other activities we have that would kind of elaborate probably more specifically than, say, the ASMFC policy statement. It gets kind of down in the weeds, at least the level we can do in our region, and highlight those some to some degree.

I think when we get into some of these issues impacting offshore spawning locations for key species; those are going to be some of the ones that may trump a lot of other types of activities if we can very much connect those to the discussion we have here and the whole EFH designation of snapper grouper spawning – HAPC designation of snapper grouper. The further we can go to define and refine that information is going to be important, because it is going to draw focus from these types of policy discussions.

DR. WILBER: The big question for the energy policy, unless they shunt it over to the artificial reef group, is whether or not the pilings and the riffraff to protect the base or the pilings for these offshore wind farms are good or bad for fish. I have heard it both ways. Any comment from anyone else?

MR. PUGLIESE: The comment I'll make is from a structural standpoint if you're going to have materials that have the opportunity to have settlement and development; I think that is obviously going to function very similar to much of the reef systems we have. In addition, this is something I raised in some of the discussions we had during – we had participated in a coast-wide discussion on alternative energy.

All three councils participated in presentations on significant habitats and species and different things. The one thing that caught my attention is that regardless of them coordinating some of their efforts on the wind farm discussions; when it came down to the final discussion of how they would create these; things such as creation of, say, corridors and all those were lost; so that opportunity to not only look at the structural aspect in terms of providing habitat but maybe even some of the functional – if you laid these out in specific designs, they would minimize their impact on the current itself as maybe even providing trolling alleys or whatever within these things. I think the other side of it is if you're having resonant sounds from these – and truthfully we haven't gone far enough to even have those discussions yet.

MR. GIBSON: Can I use the word planning here without getting labeled an anti-patriot; spatial planning? No, okay. Well, is there no money in that Marine Spatial Planning Grant for NOAA for us to improve upon the dashboard and things like that to add sound to that component? Is there any funding from NOAA as there was in the past? That is one question; and then I've got a couple other things to say.

MR. PUGLIESE: When you say adding sound –

MR. GIBSON: You were talking about overlaying places where we know the fish are making noise into the dashboard. A couple years ago I used to work on it and I haven't in a while so I haven't paid attention to it; but there were grants from NOAA to take a look. It was CMSP money, but call it whatever you will. It was like, hey, let's not stick a windmill in the middle of a spawning aggregation site. It is kind of common sense; we cannot have a fight about that. Is there any funding for us to improve that tool that anybody is aware of?

MR. PUGLIESE: I think that is one of the things that we literally are investigating now in terms of trying to shore up those areas that would be considered HAPCs and are potentially connected to sound-producing fish. In terms of actual money on the table, we're looking to potentially other partners.

Right now I'm not sure how much other money is available with NOAA to be able to add that or expand the information that we have. It may come from other capabilities. I've pushed the opportunity to at least enhance the observing capability by working with our partners and with the Ocean Observing Association to begin to add either acoustics to glider systems, AEV system, fixed-buoy systems; things that would begin to set a stage where ultimately you could have a system that would identify the beginning of a spawning aggregation, mapping and the whole nine yards.

Well, the resources have to get there to be able to support that; and that is in a 10-year build-out plan that we have yet to see a lot of those assets be funded. I think that is an important side. That is some of the reasons we have some of our other partners at the table is to see how far we can go with – because that is critical; especially when we're getting into these discussions. That needs to be on the table before a lot of the other targeting locations and types of things.

DR. WILBER: The wind discussion is pretty far along, to the point where they've gone from considering the entire coastlines down to some very specific locations. Sure, all that stuff could change, but there is a lot of bureaucracy needed to make those changes. I would suspect that revisions to council policy statements would happen on a shorter time scale than undoing and then redoing a lot of these BOEM target areas now that they've established for wind farms.

Rather than trying to wrestle with the problem and what it could potentially be coastwide; maybe now is the time to look at the areas that BOEM is now encouraging everyone to zero in on and sort those out from each other. None of those areas include snapper grouper spawning areas. For whatever reason, anything that we knew was a spawning area for snapper grouper got taken off the table. Literally what is left now are the sandy bottom areas and some areas where SEAMAP data identified as potentially having hard-bottom inside them. That is kind of largely where the whole thing is at this point.

MR. WATTERSON: I was just going to say the Navy has been monitoring for several years now in some of the areas off of Onslow Bay, also off of Cape Hatteras and down off of Jacksonville. We've been doing marine mammal surveys there for years. As part of that, we've had acoustic recording devices in the water for extended periods of time.

We now have a very large amount of data we've collected, and those were primarily in the water to listen for marine mammals, identify what the species were and when they were occurring. But as part of that, we've also noted there is a lot of other sound that has been recorded on those recordings that are primarily due to fish.

We've recently gotten a project funded for people to go back and analyze all those recordings and try to identify the different fish species that are making those sounds and that we're hearing and what time periods that is occurring. We'll be happy to share any of the results from those studies with the group once they are done.

MR. PUGLIESE: I think that is great; and truthfully that is one of the big reasons we really look forward to having you participate in this. The Navy has done a lot in terms of some of the most detailed analysis and detailed research. We would like to see that done throughout the region immediately I think.

Hopefully, one of the persons you may be able to look to is somebody that we've been coordinating and somebody I have looked at to try to enhance some of our other things; Grant Gilmore has been pulling together a sound and fish and every other organism library that we want to integrate into the ecospecies.

Not only could you get some of these other things, but you actually have the sounds; so then when you're looking at that, you could actually go to that and be able to look at a reference sound for calico scallops or gag grouper. I'll get you his contact information.

MR. WATTERSON: Yes; I would say the stuff we're doing off of Jacksonville would actually include the North Florida MPA. The sites where we have our stuff deployed is over the MPA and surrounding area because it overlaps with our area.

MR. PUGLIESE: Yes; and I think one of the other things internally on the Atlas we were talking about; one thing that we had initially started doing as a first-line template was aggregating information on spawning location from the full suite of SEAMAP, MARMAP and SEFIS information that has been collected to come up with at least a footprint of some of those locations where there may have been spawning fish captured and actually have been trying to come up with a scenario that lays out that information as a foundation to begin to look at maybe more real persistent type of activities.

DR. SEDBERRY: Speaking of sound and spawning; I think Todd Kellison, who is on this AP, has an AUV out there right now that is flying along the shelf edge listening for spawning gag. Now is their peak spawning period, and they do make sound when they're spawning. We might learn a lot from that as well.

MR. PUGLIESE: That is great; Todd had sent that. We have just found out about that moving forward. That is exactly the type of thing that we had talked about enhancing through the Ocean Observing Association. Really, if you look at the entire build-out plan, we had talked about having an array of AUVs or gliders along the coast that would routinely do it, because you can couple both refining the temperature models, circulation models with that continuous coverage of the region.

But the big push in on the fish side was to add in the acoustic capabilities in all those; and then you would be able to have an amazing coverage of the system. I think that is something that we can look at to figure out how to take it further. The gliders they are using do have limitations, because they can't carry nearly the amount of other types of payloads.

In the perfect world it would be great, because not only would it be collecting the acoustic information, but it would also be collecting multibeam, et cetera. Gliders are working on the efficiency scale where they are using the up and down to be able to propel themselves and move forward. The AUVs really get into having those bigger packages of capabilities. That I think is going to at least open the door to give us more information on especially the winter spawners.

DR. SEDBERRY: I said AUV in the generic sense. I think what he is using is a glider. It is having some problems out there at the shelf edge because of the Gulfstream currents, and all those eddies that are so prominent this time of the year that the gag take advantage of when they spawn.

MR. PUGLIESE: As a follow up to that; one of the things I have been working really closely with are – you know, I serve on the board for SECOORA, and some of the newest technology is pretty phenomenal in terms of what it can do. Some of the newest AUV systems are compact.

One of the most recent ones I had seen, which I think is going to be a challenge – if we can maybe encourage and coordinate and collaborate with some of these as test beds for these – an AUV that had the ability to move like 7 knots, wind and solar capable, and potentially deployable for six months carrying a payload of I think 50 pounds. It is a phenomenal change from not long ago. If we can begin to integrate these into the tools we have, it is going to really move this ability to look at acoustic signatures of sound-producing fish and far beyond that.

MR. MIKELL: What would be wrong with partnering with the wind industry at this point in time? It seems like to me it would be a win/win situation in that if they go build those things on sand bottom and we got involved with them early on; we might end up with some giant artificial reefs out there by request for them to add substrate to the wind field fill.

MR. PUGLIESE: I think that is where we kind of came in on this whole discussion is that there is this real opportunity. If we can really get in and front load areas to avoid and all that; I think you could look at – there has been those opportunities and discussions about if we create this, not only would it be something but they may actually create other areas to enhance or add in as mitigation or offsets of the areas that would provide additional access or additional habitat.

I think we're early enough in those stages that can be something. The other aspect – again going back to the observing – is that if we're going to be putting all these types of things, it would be really nice to in the front end have requirements like this – but I have a feeling with the cost associated maybe it would be something – is that those platforms also serve as the observing platforms, include the multiple arrays of acoustics and temperature, surface bottom temperatures at least in a portion of those so that it enhances and expands our understanding of the whole system.

MR. MIKELL: Well, I guess where I'm going is if they pretty much have narrowed down where they want to put these farms, why wouldn't we go to them up front and say that is a good area or

a bad area and give them the reasons why we think that it shouldn't be there or it should be there. What I see happening here is that the industry itself is looking for these places and we probably already know where they are; so we're spending twice the capital to end up with the same result. Does that make sense to you?

MR. GEER: I would think a lot of that has already gone into their formulation because of the dreaded word "spatial planning". I've seen exercises done in that where they have been able to bring in fisheries' data and all the other kinds of data to find where it is optimum for them that is going to have the least impact on other things.

DR. LANEY: Yes; that is all I was going to say, Pat; and I think Pace may be able to speak to that more so than I do. When they were defining those areas, my understanding is that there were teams – at least there was a team in North Carolina. I think there is one in South Carolina, which we're getting ready to reactivate here.

But a lot of that information, Jenks, fed into the locations of those sites in the first place. How much of the information with regard to the spawning sites fed into I am not sure. Roger or Pace may know more than me. A lot of that information was available to BOEM, and I think they did consider that.

I know they considered the bird information that our migratory bird colleagues gave to them and eliminated a considerable area because it was heavily used by seabirds or overwintering waterfowl. I think they probably gave the same consideration to the extent that the information about the spawning sites was provided to them.

MR. PUGLIESE: Yes; and I think a key thing is that – I think Pace has already identified – some of it was considered in this system. We were not directly involved because of the way FACA works or whatever into the system, which I think is ridiculous, but it gets to kind of your point you are in the front end.

Some of it was brought forward, but kind of at a national level in terms of perspective and policy. I think that is why going into some of these, even though they are being identified – right now most all that is being really identified are footprints of areas to be able to put the monitoring of the oceanographic characteristics to see if they are ultimately going to be useable for beds.

It is at different stage in terms of how far. However, the biggest issue I think when I look at what is going on and where we've gone and where we need to go is I agree wholeheartedly, if you can get most of this up front, then we can help guide and be a partner in the process. One of the problems we have is that the information we have is not complete.

A lot of the distributional habitat information we have is patch worked. There is a lot of information in between. One of the efforts we're involved in right now is refining and expanding the bottom information we have at least to a better degree. One of the big pushes I've had is that while we still have some of the limited distributional information, we know a lot of the habitats are following along the coast, so the major distributions of habitats in those regions.

If we don't get closer to acknowledging that; what you end up doing is that you have significant habitats to the north, significant habitats that may show spawning to the north, and you have

these void areas; but it is because you have no information and not because you don't have habitat in those areas. Somewhere in between we have to get further along to be able to do it.

You're right, if they do get closer to those points, maybe we can actually require some of that work to be done on those areas that look at the sound acoustics, to do the multibeam mapping, to verify that is not as significant and additional work to look at species distribution within those areas.

MR. STREET: In the 2000s, Joe Luczkovich at East Carolina University did a lot of sound work on finfish in Pamlico Sound. He published on it and whether he is still doing anything I have no idea; but he was working specifically on fishes. Secondly, North Carolina has been pretty well mapped in the coastal area as to where potential wind energy farms could be located.

North Carolina has tremendous wind energies, but it also has tremendous military use of its low-level airspace; several bomb ranges and things like that. The area that is available in the ocean off North Carolina is much more limited than some people would hope; but there are maps out there publicly available. There are good resources.

There is limited areas where it can be used; and there have been a number of proposed projects in the coastal land that have been killed by being too close to Fish and Wildlife Service Sanctuaries and other federal properties. Then there was one just died about three or four weeks ago near where I live.

In fact, I would have been able to see I think the towers; but because of local political opposition, whether for better or worse, but it has been killed. There are areas and a lot of the mapping is done. It doesn't have to be done again. The companies that potentially would do these kinds of projects know already where that is, because it is public information.

MS. GREGG: I don't have a whole lot of experience with the wind technology; but when it comes to hydropower, we've had a lot of, at this point just technology testing that is being applied for permits in Florida. You guys have talked about areas being mapped and you know where spawning aggregations are occurring and that kind of thing.

You are working ahead of these projects and things to identify areas that are good and not good. But I guess the problem that came up with one of the hydropower projects was that there were some areas we knew were better than others because of hard-bottom present; you know, corals and reefs and hard-bottom present.

We wanted them to move to other areas, but then they said, well, we can't move to this other area because BOEM doesn't have that area up for lease at this point in time. I'm just wondering does BOEM handle the wind and do they have to do leases? It is not only a matter of whether or not we've identified the areas that are optimal for doing wind projects; it is a matter of whether or not BOEM puts those areas up for lease at the same time that people want them or companies are looking for them. I think there is another added layer to this at least from my experience with other projects.

MR. PUGLIESE: Yes; and I think there is another aspect that really does need to be captured in some of this discussion, because right now so much of the focus in some of the areas is on the

test beds for the areas and not really looking at if there is, say, directives for an area to have 20 or 30 percent alternative energy, how that translates to actually on the water; either hydro capability or kinetic capability or wind capability.

That is kind of forward-looking cumulative thing. As far as I know, nobody has looked at what that would translate in terms of how many acres of wind farm or underwater components. I think that is an important thing to look in the front end, because right now virtually all of the discussion is really focused on what the impact of that one locational area is.

That is a very significant difference, and you need to jump to look forward. If you're going to do it, then you have to have a lot more engagement, because what it translates to is these big giant footprints you see off of England, off of other areas where they've put large systems. One of the only things that was highlighted in the national workshop on that work between the councils and trying to highlight some of the impacts was bringing in some of the international experience on birds; unanticipated impacts.

One of the things that jumped out at me was the identification that in one of the international areas – and it was probably in England, -- where if the bird population was impacted or reduced before they put in the farm, they did not recover, even though there was a lot of avoidance of systems; and some of that could be dealt with design.

I think that whole idea of really being able to be part of the process closer in terms of orientation and distribution versus just basically dropping big footprints on the water is a critical thing. That big build-out issue in terms of kind of a proactive understanding of what that means is going to have a lot of implications for fishing activity.

Right now a lot of the discussion is that it is going to be open to all areas and fishing can go on in many of the areas. I'm not sure if you look at large ones are we going to run into some of those issues down the road that you are all of a sudden going to have de facto protected areas or whatever. I think we need to at least have discussions about where that could go.

MR. MIKELL: Well, the industry is not standing still. Here we are wasting a lot of spit and a lot of time on trying to decide which way we want to go. My suggestion right now is that we need to partner up with the industry and not be in an adversarial position next year or five years from now. Let's be part of the team. I think we could probably get some good things out of that.

MR. BODNAR: On the artificial reef side of it, I'm kind of curious on the wind farms question that I have. It seems like if you read a lot, the industry says that there is about a 20- to 25-year life span on these. It looks like there are some reports that say it is down to maybe only 10 years. Are there any guidelines that are set forth right now on what you would do after the decommissioning of these towers?

MR. GEER: I see everyone kind of smiling; does anyone know the answer?

DR. WILBER: The decommissioning phase for the wind towers is discussed in BOEM's long-term plans. They are required to be discussed in the NEPA documents that potential wind farm developers put forth. It is kind of like the cumulative impacts section of an EIS. It is a required thing, so there is a section there and it has a bold subtitle indicating that is what it is all about.

But, we've not been down that road; we don't really know what to put in there. Largely what you get is a lot of promises and commitments to be careful and diligent; and frankly that is about the best we can do at this point.

MR. PRATT: In answer to Jenks' proposal to go to the power companies; you are going to hear me come from an area you don't usually hear me come from and that is environmental. The companies that are going to build these wind farms, Jenks, are not Duke Power or Dominion or whatever else. They are comparable to wildcatters drilling for oil. Wind power and solar is heavily government subsidized.

What these companies will do, if they can, is build these facilities and sell the power to Duke or Dominion. It is going to raise your energy cost. Right now there is a move in the international environmental community because of the results of a mine in China that produces the rare earth metals that are required to build these turbines.

They refine these metals; the waste is confined into a 5,000 acre shallow lake. The background levels of radiation around that lake at the present time are 10 times above background levels. They generate more radioactive waste than every nuclear power plant in the United States combined; and that's a fact.

I think you are going to see a major environmental battle coming from the National Resource Defense Council, the Environmental Defense Fund, National Wildlife Federation and others that are going to go on this very hard before that facility is ever put in place. I would have to say I would join with them in that; even though I fight them all out of fishing stuff. There are a lot of reasons, Jenks, that going to the power companies, Duke Power won't produce anything. They are not the originating facility.

MR. STREET: One of the issues in the site that was recently stopped near where I live was exactly decommissioning and all. Local ordinances were enacted. Whether they could stand up to federal court challenges; I have no idea. But they would require bonding for decommissioning, for damages and carry adequate insurances if a piling fell on somebody's house in a hurricane and things like that.

But they also have provisions in those ordinances against loss of property values from being near a wind farm site. Then related to the decommissioning, the tower that it is put on certainly would have a life of greater than 10 years. Now the turbine mechanism might be less; those are put on and taken off using helicopters.

I would assume if they've got the piling and the turbine and blades go through their life, they take them off and put a new turbine and new blades on. I guess, I don't know, but it would surprise me that they would have a piling that would have a useful life of just a couple of decades at most. There are real questions to be answered. I didn't go to any of the meetings about this in our home area. I don't know; there are questions to ask.

MR. GEER: Yes, Mike, I kind of thought the same thing about the pilings probably last a lot longer than 10 years.

DR. WILBER: Mike is talking about an onshore wind farm as opposed to an offshore wind farm; but the offshore wind farm leases I think are 25 years. That is at least the on-paper planning period. It may be that BOEM can't issue a license for longer than 25 years, I don't know, but that is the timeframe that all this discussion is kind of built around.

Now going to Jenks' point about let's go talk to the power company; the power company in South Carolina that is looking to build a wind farm off of Georgetown is Santee/Cooper, so you can go talk to Santee/Cooper. Now there are a whole bunch of companies created for the purpose of pursuing wind farms off of North Carolina. Now how they go back to Dominion and Duke and all of those things, I don't know their little tendrils back that way; but in South Carolina it is relatively straightforward, it is Santee/Cooper.

Then to be kind of honest, what I see happening in Florida and Georgia are really universities creating foundations and weird kinds of things that universities create in order to pursue research money. I haven't really seen what I think is an honest to God, publicly held corporation pursuing a wind farm off of Florida or Georgia.

MR. GEER: That is correct. In Georgia, Georgia Tech is taking the lead on it. In that sense it is more experimental looking into the feasibility of it.

MR. PUGLIESE: Yes; and one other aspect of why I think we need to look closer is that some of the technology is changing even from discussions that were held recently. The newest floating technology before they had very many limitations on how far offshore some of these could go; and they were talking about staying within 13 miles and whatnot; but some of the newer technology has provided the capability to using anchored floating wind farm capability. Internationally that is already being used and being at least investigated. I think that is going to be at least something else that needs to be looked at in the context of this entire development in the future.

MR. GEER: Okay, are there any more comments?

MS. LAWRENCE: I just had a quick question for Roger and Pace. Our office has provided some comments on this policy back in May. I don't know if you have considered those or should I resend them since it has been a while?

MR. PUGLIESE: Please send them if they are not integrated into this one that we sent out. Those are not into this one already?

MS. LAWRENCE: No.

MR. GEER: Also, if you do have any comments, please get them to us. Read it over and get us your comments; everyone's comments are valued. Sometimes in these meetings it is hard to get everything in. There is nothing else on this? Okay, it is 12:04.

MR. PUGLIESE: Before we break, just as a follow up to kind of wrap some things up. We had talked about the beach dredge and fill, beach re-nourishment, large-scale coastal engineering policy. I had distributed the most recent version with the clean-ups and all the additions and adjustments that were made.

I think what the prudent thing to do is we're going to look to working closely with Priscilla, Pace, Pat and myself and others as needed. The only really outstanding component on there was to look at those recommendations in creating a list. It is really going to be drawing from some of the ones that are already in there. It is going to be reorganization and reshuffling.

I think that the work of the panel has pretty much finalized the core of this document. What we would do is go back in and just at least address that one area, add in that list drawing from the existing component. Then that will be essentially a finalized document that we'll distribute back out. That is going to essentially be the context of the document that moves forward to the council. With that, I think that will provide kind of a foundation to get it forward and get it to the council for approval in June.

MR. GEER: All right; is that okay with all the panel members? Hearing no objection.

MR. PUGLIESE: Yes; and on the same vein, the Aquaculture Policy, I did go through and did essentially the same thing. I haven't distributed it out yet, but I went through and added all the corrections, additions, recommendations that were reviewed and adopted and eliminated some of the duplication or unquantified some of the statements made and have got it to the point where that document – and Lisa has had a chance to look and make sure – and what it really came down, there was just some qualifying comments on statements; whether they are relevant to specifically the policy or not and really very limited.

That policy is essentially completed and what I would propose, given the discussion – the biggest discussion was on the recommendation relative to the two points under the recommendations on the use of native species and on the GMOs. I think we made those comments before that it was clear that the naturalized wasn't even included in the NOAA Policy.

It is in the appendices of the NOAA Policy, but it wasn't included; and the genetically modified wasn't even addressed. I think the recommendations that were provided by Florida and with the discussions of many of the AP members; the plan was to finalize that document and bring that as the recommendation forward.

But what I would do is I'll have that alternative wording that included the naturalized and the alternative discussion on the genetic species available for the council; and the council can make a determination if they would like to go back to that or stay with the more conservative recommendation of the panel. That is where the aquaculture policy is also at that stage of really moving forward on.

MR. GEER: Okay; just to make sure that everybody is okay with that. We spent a lot of time on that yesterday. I think we had some thoughts about that and discussions about that during the breaks and things. If everybody is okay, that is how we're going to move forward. It is now 12:08. It is time for lunch, and we are due back here at 1:30.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council convened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday afternoon, April 2, 2014, and was called to order at 1:30 o'clock p.m. by Chairman Patrick Geer.

MR. GEER: All right, back to order. Moving on to the afternoon section, we're going to be starting off with the ecosystem plan, the development and Roger is going to start us off with that.

MR. PUGLIESE: What I would like to do is open up the discussion today with essentially the presentation I made to the council on the timing and development of the Fishery Ecosystem Plan, which also we're embedding the update to essential fish habitat and meeting ultimately our five-year review of the EFH information.

The development of the FEP is – really, this was taking a more realistic view. I think originally we thought we were going to march right through and cram all the workshops in this year and get everything done. I think the reality is that it is going to be a development process between 2014 and 2015, because essentially the EFH review; the only statutory type of constraint was getting something finalized by 2016.

What we envision is the FEP is going to be the process we're already in, the completion of the EFH Policy Statement; both the updates and development of new ones, which we've already initiated. That will lead to a combination of both workshops and webinars. I had originally laid out an entire workshop process with the ability to use webinars.

As we shore up the participation, I think that may probably trump more of the workshop side. However, I think we'll definitely have some directly in conjunction with the fall AP meeting. Both workshops and webinars would be done to support the update, revision, and development of additional sections.

We're also looking at potentially a modeling workshop, maybe even more than one modeling workshop. We have a number of different things ongoing. We would like to highlight the ecosystem modeling efforts that we've been collaborating on. In addition, there is work on habitat modeling that is actually going into providing updates or potential updates for CPUE analysis in integration to stock assessments.

That whole aspect of what is being done under both of those efforts and maybe even a highlighting of all the modeling work that is providing oceanographic characterization for our region on temperature occurrence, et cetera; so this is to be developed either in one or probably two different components.

Then we're looking at completion of a new Fishery Ecosystem Plan sections and appendices to also address fisheries oceanography, climate and fisheries, and a regional mapping strategy. I think in one of the previous discussions we identified that we had a SEAMAP Bottom Mapping Workgroup initiating review of the existing information on benthic habitat distribution.

One of the outcomes was discussion about creating a regional mapping strategy tying what we know about distributions of these species mapped habitats and setting the stage that really kind of said what we know. We've been doing that through the Atlas and the habitat information that is integrated into the Habitat and Ecosystem Atlas, so that all the multibeam, sidescan, whatever has been done from the deep ocean to the shore is identified; so that we can look at where you begin to see all the – as I mentioned earlier, some of the concern that you do not have a continuous distribution of mapping that shows how some of these habitats are more contiguous.

When people are coming forward looking at an area either for transiting, which we just had come up with the Okeanos Explorer; we were able to shift some of their – or provide some recommendations on how they could fill in some areas of mapping that we do not have information. When those types of opportunities come up, we'd have a place that you could literally go to and identify what other components are in between the MPAs or in between distribution of the habitat along the shelf or in the deep ocean in the deep coral systems. That is something that is going to be added and connected into the FEP under development.

In addition, as I mentioned, the EFH revisions and updates supporting the five-year review; there was specific recommendations of trying to get further information that gets down to life history. The reality is a lot of that still does exist, but there is enough that we can refine that; as well as the spatial presentations.

A lot of things are underway right now that is going to help support, expand, and refine those. What we're looking at is that the ultimate deadline for the five-year review is in the spring of 2016. We have initiated already the process with FEP II. With the April/November 2013 AP meetings, we have been moving forward with EFH policy statements and look at refining, completing all those policy statements through this year and into – if really needed in 2015.

I think you made a lot of progress at this meeting that really is advancing many of these. Some of the newer ones we'll see just how long it may take to get those finalized. That moves us on into identify the SEAMAP bottom mapping, refining the updated information on benthic habitats as well as the strategy.

That brings us to the meeting we're at right now, which is again refining the policy statements as well as the FEP development process, where we're going now and what we're going to get in after my general discussion. What it brings us to is – as I mentioned before, this is really kind of the scope of some of the update refinement is tracking both habitats and species.

What we're looking at is creating the groups that would track the bottom habitat, artificial reefs, pelagic habitats, fisheries oceanography, wetlands, SAV, mangroves, ecosystem modeling, and forage fish, wetlands marsh, oyster shell habitat, impacts on habitat, water issues, research and monitoring, mapping and characterization and the spatial representations of EFH-HAPCs.

Now that is partial; that is the core of the habitat and activities that have been identified. Of course, we have the individual species and it includes the entire suite of all South Atlantic species. In the FEP we cover everything from council-managed species to HMS to ASMFC and Mid-Atlantic Council; species that are within the South Atlantic area jurisdiction.

All of these are going to be looked at to be updated and refined; and in some cases the list I've gone through are areas that are going to be actually added. In the broader scope we're looking at June of this year that the policy statements we've been working on – a core of those are going to be brought forward to the council for approval and then ultimately September probably additional ones.

In September/December really having updates on where we are in the development process, moving us also with the same way in March of '15; and shooting for an initial draft June of 2015

as a complete FEP and updates for five year, and ultimately September of 2015. Then that would have in advance of the March of 2016 deadline for the entire process. That is in a nutshell kind of the task at hand.

I think there has been so much that has been done at our different partners in research, et cetera, that it is going to really provide the opportunity to both update the information that is in the FEP, but make it more operational. The policy development; I think from the beginning we've discussed making it more useful, more applicable and transferrable to our partners and for NOAA Fisheries to be able to utilize them in their permitting process, also.

I think we're on a good track to make that happen. I think also that the opportunity really exists to take some of these bigger concepts such as fisheries and climate and forage and prey and food web to another level in terms of discussion about what some of the considerations need to be in our region.

With the discussions we've had on artificial reefs and components on that; really shoring up a lot of that information within the FEP and expanding its integration into the EFH activities in our region. That is the timeline, the task. What we have in the agenda right now from this first step is to then look at the participation that we had in the past and really focus on – I had forwarded as an additional document the list of preparers that we had.

It is an expansive list, but it really draws on anything and everything that was integrated, both from appendices to the document, where you may have had statements developed or materials included as appendices, to actual other plans that this material was drawn from. You have all the council fishery management plans; you have our partners with ASMFC and Mid-Atlantic Council; and a lot of the information also drawn from developing plans at that stage or information that provides information on fisheries, fisheries activities, or the habitats for again that entire suite of species that was identified.

I guess I'll pass this over to Pat at this stage. Instead of just trying to do a roundtable discussion on this, the most effective way – the core participants in the past have been from the state participating in species habitat and activities on the FEP, going all the way back to the habitat plan even.

The most effective way to have some of this discussion would be to break out into state subpanels and the subpanel chair have the ability to kind of lead the discussion on; look at the list and begin to – you know, there are many of these people that are not going to be involved. There is other expertise that may be obvious that needs to be integrated.

That is what we're looking at going into the next step. In advance of that, are there any other specific questions about the timing or developments beyond where we are right now? If not, I'll pass it over to Pat to kind of take it to the next step.

MR. GEER: Okay, this is like dancing chairs now. Roger and I talked about this and we agreed instead of, like you said, having a roundtable, we might be better breaking into states, going through this list that we have of participants and people who helped prepare this document. Looking through the list, I know a lot of these people have retired.

A lot of these people have moved on. Does everybody have a copy of that; it was sent out. That might be a problem; I know I have one. As long as the group has one, it shouldn't take that long to take the people off you know are retired that aren't going to be working with us. We still have several retired folks from their original position that are very active on our AP, and we appreciate that. We hope they continue to be involved; but we'll go through this list. If there are new people, we'll just go down and try to add them to it.

The federal partners are at-large members; if they just want to pick a group and sit with them, we'll do that. Let's break up into groups. This shouldn't take long, and we'll finish this up by 2:30 and get back together. When we're done, we'll just get that list to Roger and I so we have it. We should have it in the information that we were sent.

MS. LAWRENCE: Pat, can you tell us what the name of the document is?

MR. PUGLIESE: Yes; it was the last additional briefing material.

(Whereupon, off-the-record discussions were held by the advisory panel.)

MR. GEER: That seemed pretty productive; you guys were working real hard on that so that was good. We went through that list, so a lot of retired names, a lot of reminiscing. Get those lists to Roger or myself when you can. It is not due today, but it is just a start.

It is just trying to find out some of these things were at least 10 years old. Some of the names on here are at least 10 years old. People have moved on. Making the recommendation, we greatly appreciate that. It was a lot easier than one or two people trying to do that. Just get that to us when you can, and let's move on to the next agenda item, which is Roger and the climate.

(Further discussion off the record.)

MR. STREET: Since you're talking governance, I don't know how to describe this or where it goes, but it has to do with governance in North Carolina. North Carolina state government in recent weeks has been in the process of eliminating all references to climate change and sea level rise from all state websites. I am wondering if representatives of North Carolina are going to be able to participate in discussions. I wonder if at the governors council, if our governor is still involved in it, will be able to say or do anything in reference to that.

MR. PUGLIESE: I don't know. This was raised that the state of North Carolina is in that condition. I think some of the discussion we had was this issue of climate vulnerability versus necessarily climate change. Now, I'm not sure how that is going to impact North Carolina and its deliberations or participation in any of these types of thing.

I think from a regional perspective we are really looking at what some of the potential habitat, if these actually are happening, whether they are or not. I think that is kind of the perspective that I think we – from a proactive discussion on considerations for habitat in the long term; at least that is the road we're going down to begin this discussion. It was made very clear at this workshop that the South Atlantic Council has not deliberated on this.

Most of it has been done in the background in building our partnerships with other groups; because I think as we go forward – that is pretty much done when I was talking about this documentation here, getting to the bigger picture. We've been setting the stage for addressing and beginning to understand some of the potential impacts with some of the partnerships we have, because NOAA has a limited capability with regard to climate because of the way things have unfolded in the past.

However, our partnership with the Landscape Conservation Cooperative has direct connection to the USGS Climate Science Centers, which are fully funded. We have the ability to maybe potentially have the discussions and look at what some of the impacts may be if you have sea level rise and loss of essential fish habitat.

It begins to investigate this in the background through some of our deliberations. I think those, as well as our connection with the Ocean Observing to create the information that would show what can document if you do have things such as the increased upwelling events or changes in current systems or temperature over time; we have a way to build the science-based ability to move forward in it. I understand your concern and comment.

I'm not really sure how this is going to unfold as we move forward. On the governors side; well, the bottom line is if they pick that as a focus area, I think that would be a very telling thing about where the whole system may go with that. Regardless, I think we want to be able to at least begin to discuss some of these, because some of them have been seen such as that activity off of the east coast of Florida with the increased upwelling events. I think that is a pretty significant discussion to begin to look at and begin to understand.

Regardless of change, a lot of that was already kind of in the queue for if we can get the resources to be able to document the oceanographic connectivity to fisheries and the implications. I think that is going to be an important point whether you look at it as change or if you look at it just as variability over time and how that affects fishing activities and populations and habitat.

I just wanted to touch on what I distributed but touch on what that kind of context was, because I was looking at that as a document that we can build on to add in other types of things on how vulnerable the species may be to various aspects of changing environment or oceanographic conditions.

MR. GEER: Mike, back where you were talking about on the commission level; the Management and Science Committee is looking at this. They formed a subcommittee to look at not climate change directly, but what they are calling it is translocation of populations. In Mid-Atlantic and New England states they are seeing some of the species move further north or further to deeper waters. It is a real issue for them, because it is an allocation issue for catch.

You are getting states that didn't have an allocation in the past and now they are looking at it and saying, well, they are off our coast, why can't we fish for them? Other states that have an allocation, they are not going to be able to catch it. They are looking into that right now; and it is based on warming water temperatures.

Whether you want to call it a trend or climate change or whatever, but it is a real increase in water temperatures that are driving that. Coming from a state that we don't have a problem with it, I sympathize with all the other states that have to. As somebody said, you've got to cover your ears and cover your eyes and just pretend it doesn't exist.

MR. STREET: Well, as a private person and not an employee of the state of North Carolina, I can say what I damn well please.

MR. PUGLIESE: One other aspect that I think from the South Atlantic that is also telling is that the range change of black sea bass extending – temperature change; bottom temperatures being some of the lowest and the catch further south that has not been seen in years. That is something that we do have some variability.

But again, it is somewhat different, especially since we do not have those state-by-state allocations right now. Hopefully, that is not going to become the firestorm that I think it is going to be in the Mid-Atlantic to try to address these. Some of those are real, as Pat has indicated. But the idea here was to set the stage for the ability to integrate this discussion within the Fishery Ecosystem Plan.

It is kind of a cross between the fisheries oceanography, what our oceanographic conditions are in our system, and then what some of the responses may be and what may happen in the ocean relative to habitat and the species. This is a springboard to add that in as a subsection of the Fishery Ecosystem Plan into the future.

MR. GEER: Are there any additional comments or questions? I don't want to get into a political firestorm. Roger put together a pretty good document there; all the species are there and it is pretty well laid out. Any comments at all?

MR. PUGLIESE: As we move forward with that; being able to tap in on individuals to be involved in the writing of that section is going to be important. I think we're going to be drawing from some of the other expertise already involved in the process.

MR. GEER: All right, we're scheduled for a break now, aren't we? We're 20 minutes ahead of schedule, so let's go ahead and break now and be back at 3:20.

MR. PUGLIESE: (Recording started here) – and basically they collapsed the entire system and most of those fisheries went away. Their message was that they couldn't manage both at the top of production. Nobody actually said that it related, but I think we are already managing it that way. The flexibility of Magnuson is in there to kind of consider those variabilities. Somebody else may want to do it.

This did come up one other time in the past. When we first looked at dolphin, the individual got laughed out of the discussion, but it was with regard to we are at a fairly big biomass on dolphin, why don't we set aside an allocation for billfish? That didn't go real far, but the concept of having something that connects to it has been raised before, but has not gone real far.

MS. YUEN: I just wanted to address your question about menhaden. The commission does have a Multispecies Technical Committee that is working. Right now there is a heavy focus on

menhaden and managing that along with striped bass and bluefish, which are two known predators. Like Roger said, it is very model heavy and there still needs to do a lot of research on the actual, like amount consumed. I just wanted to add that.

DR. ELKINS: To respond to Mike's comments on forage fish; I think he mentioned, if I understood him correctly, that we were moving towards fishing down the food chain. But, worldwide 70 percent the last time I checked were used for non-human consumption. I don't think there is any doubt that striped bass have been proven to – and Mike's work showed in the past that stripers do eat weakfish.

To put things in a more modern status, the spawning stock biomass coastwide is 4 million pounds, probably 4 million individuals, roughly. I understand that the model of predation from the Weakfish Technical Committee of ASMFC came about primarily as sometimes happens in rooms that are closed the loudest voice sometimes prevails.

I think this issue of where are these fish going, some light can be shined on that partially at least by the fact that we're killing roughly 36 million juvenile weakfish each year in the North Carolina shrimp trawl fishery. If we make a guess and say that one in four makes it to this spawning stock biomass, these four-inch fish, we would be killing twice what the current coast-wide biomass is.

These are just numbers that I've made up now. We don't know what the natural mortality of a four-inch weakfish is. I'm sure many of them are eaten by other things. If you compare the four million pounds of biomass of weakfish to the 100,000 metric tons of menhaden that are removed from the coast, you can sort of get a scale of the biomasses that we're talking about. I'll end there.

DR. LANEY: I was just going to say in response to George's question, Melissa is correct, there is that Multispecies VPA that ASMFC has been developing. I believe they have added in addition to bluefish, striped bass and weakfish; I think they added spiny dogfish to that model, and I know they were going to add some other prey species as well aside from menhaden.

The question, George, of whether there should be a forage allocation in the menhaden fishery I think people would agree is still being hotly debated. ASMFC did take a step in that direction by putting a cap on the menhaden fishery within Chesapeake Bay, and there is still debate over whether or not there is "localized depletion" within the bay.

There are some folks that seriously contend that is the case, and they indicate that they have data that can demonstrate that menhaden constitute far less a percentage in the diet of striped bass within the bay than they historically used to and that the condition factor of striped bass today in comparison to what it was 20 or 30 years ago is significantly lower.

My understanding is that some of those data are being prepared for publication I hope in the not too distant future. I know that Jim Uphoff with Maryland DNR is working with Jim Price of the Chesapeake Bay Ecological Foundation to put something out there in the peer-reviewed literature that may get at that question.

But I think as far as I know, and Jessica may know differently, I know there are fisheries in other parts of the world and maybe even in other parts of the U.S. where forage allocations are being made; but I'm not aware of any case on the east coast where we've actually done that yet, but it is certainly being discussed.

I know that Pew and some of the other NGOs are pushing very strongly for forage allocations; and at ASMFC there has been a lot of discussion on the record about ecological reference points. My perception of what an ecological reference point is that it would consider forage allocations as well as fishery allocations.

DR. WILBER: I just want to say, Roger, the Northeast Fishery Science Center is doing an onshore/offshore linkage model, focusing first on summer flounder as an example. If you talk to John Manderson or Dave Stevenson up in the northeast, they can give you a lot more info on it. Just given the fact that South Atlantic species tend to be more federal and not so much estuarine, when you talk about linkages are we going to try and make a conscience effort to establish the onshore/offshore linkage, or are we largely just going to let the species themselves drive it and kind of have an alongshore kind of linkage? That is really why I think that the Northeast Science Center work would be of some particular value, because it has that onshore/offshore focus to it.

MR. PUGLIESE: Yes; and specifically we have some connections with Manderson because of some of our deliberations with the integration of species in the stock assessment and on some of the work they were doing on butterfish. We actually are going to investigate that model. Again at the LCC level discussions in terms of fisheries; I've raised that as an important need.

I think the further we can go to look at what they've done in building that connectivity, especially when we were looking at species like gray snapper, gag grouper and other estuarine-dependent species; I think it is going to be important. We do have some players that maybe can help that along with resources. But having a test case with what they're doing would probably move us along further at least to know how to proceed.

DR. SEDBERRY: On the Atlantic menhaden we do have stock assessments; and we have a handle on the status of the stock, and we have a handle on the fishing level and what is landed. Our offshore forage base is based on Spanish sardines and round scad and anchovies and things for which there is not much of a fishery. There is a bait fishery but it is not quantified. We have no idea what the pressure or effort or landings or what is being removed by the bait fishery, let alone birds and other things that are not fish.

MR. PUGLIESE: That is a critical distinction, and that is something I've raised before, because I think there was a desire to look at our region, and we just do not have some of those directed fisheries. However, I think we're beginning to investigate what really the implications are of some of the species connections is going to be important, but we just don' t have the directed fisheries on those, at least at the levels that say menhaden is.

The menhaden that was is gone, because we don't have any in the North Carolina fisheries. Back when we started the Habitat Plan and FEP, those were still operational and those have gone by the wayside. It is really focused on what is going on in the Mid-Atlantic now. One kind of interesting connection still though is on the Atlantic side, I've always tried to figure out – well, I know why; but one of the key species you have, king mackerel is not represented in some of that

discussion on multispecies interaction. In our region that was going to be the one that drove us to discuss that further, I think. It is not an issue here now at least in our region.

DR. LANEY: George, we started working on the birds. Roger will remember Joan Broward and I put together the whole bird list and started pulling together the dietary requirements. There was a paper, I think it came out in Science last year or the year before, that looked at seabirds and looked at forage requirements of sea birds and looked at a whole bunch of different seabird populations around the planet.

It reached some conclusions about the necessary amount of forage to ensure sustainability and good production in seabird colonies. I know that information is there for us; but I certainly agree with you; all that stuff needs to be considered and rolled into the model to the extent we can do so, I think.

MR. GEER: All right, good stuff, any other comments? All right George, you're up; George will be talking about the NOAA Habitat Blueprint.

DR. SEDBERRY: Thanks, everybody, for having me here to talk about this. NOAA is interested in connecting with the fishery management councils on this habitat blueprint and its implementation. This meeting and this discussion we're having today is really timely, because we're just really getting started on the habitat blueprint for the southeast.

Bringing this to the Habitat Advisory Panel at this point I think is very good to get the input of the South Atlantic Council on this process as it develops. Under the habitat blueprint, we have these guiding principles. The way it is working is that there is a Habitat Area Selection Team, FAST, that is composed of people from across line offices within NOAA; so NOAA Fisheries is represented, NOAA Ocean Services are represented.

The idea here is for us to coordinate within NOAA, within all the line offices within NOAA, what research, monitoring and management is going on directed at habitat and coordinate that across the line offices and then also to reach out to stakeholders and strategic partners like the South Atlantic Fisheries Management Council; to leverage these partnerships to see what resources we have in common that we can use towards understanding these habitats and their importance in our managed resources, and also to avoid duplication, to make sure that we get the best bang for the buck out of the resources that we have.

We want to be able to deliver the best science and best management to managing these habitats. Of course, many of the managed species that the council deals with live in these habitats, and some of the habitats are quite different from each other. Gag is an example, living in salt marshes and then living on live bottom offshore, we've talked a bit about that today; and how we can coordinate the various habitat research and management plans together to help manage gag, for example.

We have four key approaches. We are looking at a place-based management. We want to implement short-term regional habitat initiative. For each region – and the Focus Area Selection Team that I'm involved with is covering the Southeast Atlantic and the Caribbean – we want to select areas within the southeast and Caribbean that would become geographic areas on, say, the watershed scale, something that large that we would focus NOAA efforts on.

Then again coordinate with our partners in the council, NGOs and others to bring the best habitat science to focus on these rather large focus areas. The map here shows the NOAA regions and the habitat focus areas. NOAA has successfully used this regionally driven process to select habitat focus areas in California, the Russian River Watershed in the Pacific Islands and in the Great Lakes. The North Atlantic area will be announcing their selection areas this month, it is hoped. Alaska is currently in the process of selecting their focus areas.

With all the current attention being focused in the Gulf of Mexico because of the Horizon Deepwater Spill and the resources that have been focused on that; we're going to kind of let that sort out first before focus areas are designated for the Gulf of Mexico. Right now in the South Atlantic we are at the very preliminary stages of looking at the region and coming up with some areas that we can focus on.

The selection process; NOAA is aligning its capabilities in each region to maximize the habitat conservation outcomes, and there are teams of NOAA scientists from across the line offices that are looking at these potential focus areas. We have representatives on the Focus Area Selection Team from Oceans and Atmospheric Research, from the National Ocean Service, representing sanctuaries, coral programs, NEERS and other places. The National Weather Service is included, and. of course, NOAA Fisheries through the Southeast Regional Office and the Fisheries Science Center.

The Focus Area Selection Team will use previously established criteria and adapt them for the Southeastern and Caribbean Region to apply these criteria to areas that are suggested for focus. The first eight criteria listed there that are numbered are actually quantifiable and scorable; so as areas are being considered as a focus for this cooperative habitat program, we will score them.

The Focus Team will score them and take them forward for consideration by stakeholders and others. You can see the eight listed here. There are I believe five outcomes that we want to see, and I don't know them right off the top of my head, but they are on the one pager or two pager that was included in your briefing book.

Then the second two kind of look at the long term impacts of those outcomes. Are they going to have significant long-term impact in helping us to manage these habitats in the region and can we show progress is happening? Not only a long-term outcome, but can we look at a three- to five-year scale and see that we are checking off things and making things happen within that long-term period to address those outcomes.

Again, part of this is to ensure cross NOAA collaborations of the Ocean Services, talking to the Fisheries Service and vice versa. We want to include external partnerships that would include things like the states and the fishery management councils to improve our scientific understanding and to leverage or capitalize on resources that we have or that we might bring to the table in the future. Then we want to be consistent with other regional initiatives.

Those eight things are quantifiable. Areas that are brought forward by the selection team to be considered as habitat focus areas will be scored according to those criteria. Then there are some additional considerations listed there; how these might be applicable to other regions, benefit to local economies or communities, and then building off existing activities or relationships.

The timeline; I have to say we're already behind. The southeast is kind of behind other regions of the country, but we're trying to move forward on this timeline. Right now we're in April; and right now we're looking at a stakeholder strategy. We're compiling a list of stakeholders that might have input or be interested in what we're doing here, and want to be involved in the selection process.

We're working within the line offices within the National Ocean Service and the Fisheries Service to identify potential candidate focus areas that we can take forward as a potential candidate list next month. Then sometime in late June we're going to conduct a face-to-face workshop where those potential candidate focus areas would be narrowed down.

It would be finalized and announced and then start an implementation process sometime this fall. There are some key entry points where the council and other partners might provide input. Right now this meeting here is a starting point where the Habitat Advisory Panel may want to consider some focus areas that would want to suggest to the team.

In May there will be an opportunity to comment on potential focus areas that have been suggested or discussed within NOAA; and then as I mentioned before that face-to-face meeting of the Focus Area Selection Team will happen in late June. At one time we thought there might be some potential for presentation of this idea to the full South Atlantic Council, but I think that meeting occurs in early June.

As I said we're running a little behind; but there will be some point along the line where if the South Atlantic Council is interested in hearing more about this at one of their meetings, we can present it. Then in the fall implement the process in the areas that have been selected by working with our partners.

Anyway, as I mentioned, there will be several areas where you can provide input into this selection process. You could also follow up with the two co-chairs of the Focus Area Selection Team. I'm one of them with the National Ocean Service; and Howard, who I think is sitting over there – there he is raising his hand – with the Fisheries Restoration Center here in Charleston is another. We're the co-leads on this representing Fisheries and the Ocean Service. We'll take suggestions forward to the selection team along with suggestions from the rest of the NOAA line offices.

That is all I had. I know that is a very broad and general presentation of what this is; but as I said, we're just getting started and as it develops, if you want to stay in touch with what is going on with this, we'll be happy to stay in touch with you and let you know what is going on. Particularly when things start to move and we have some meetings or online ways to take input, we can keep you informed of that as well. Are there any questions?

MR. GIBSON: What sort of criteria are you going to use to choose the sites?

DR. SEDBERRY: There is a lot of discussion about that. Howard or Pace may want to chime in here. We've had a lot of discussion about whether it is areas that are pristine and you might want to protect them and keep them that way or areas that are degraded and need restoration. All of those kinds of things are in this criteria matrix.

We are also looking at what kinds of partnerships already exist and what kinds of resources already exist that can work together through this process to focus on a particular area. The scale, as I mentioned, is kind of a watershed scale. If you look at the Russian River example, one of the interests is in restoring salmon runs, so it includes all the ocean and the watershed in its entirety.

Some of the things that we're looking at in the southeast include things like the Altamaha River Watershed. I'm not sure I really answered your question, because it is kind of a giant matrix of criteria. I believe they are available at the website, which I should have given you and I don't know it off the top of my head; but I can get back to you on that. I could actually distribute that to the group if that is acceptable. Do you know, Howard, would that be okay or is it too premature for that?

(Answer given off the record.)

DR. SEDBERRY: It is, each of those eight scorable criteria; I think there are five classifications in the first one, the rest there is four about how you would score each of those things and what they really mean on that criteria matrix. I can send that out to the AP.

DR. WILBER: Just to clarify a couple points; the original FAST membership had several members from the Weather Service, NESDIS and PPI on it, so they're still on FAST? I mean you described it as a Fisheries Service/NOS thing, but it is really much broader.

DR. SEDBERRY: It is much broader than that. I didn't mean to say that; you're right.

DR. WILBER: Then my other question; a lot of folks have gone into this FAST process with sort of what I will call the mental bias; that this is some sort of watershed kind of exercise, and that watersheds are the units that you think about when trying to do things; but the criteria that were set up by headquarters and the guidance that came from headquarters actually encouraged a very broad kind of outside the box thinking, although in my opinion we have yet to see that in any of the regions.

They are all kind of going in typical watershed-type approaches. One of the ideas that had been floated for the South Atlantic to avoid the idea of picking one watershed like the Altamaha, which all the Georgia people high-five themselves with and everybody else will quickly have their interest wane, is to pick something like the Atlantic Intercoastal Waterway, which goes from North Carolina all the way down to Florida and focus on all the habitats that are actually part of the waterway and the economic engine that waterway kind of represents. Is there any kind of still hope that some outside the box thinking is possible in the South Atlantic FAST?

DR. SEDBERRY: Absolutely; right now it is completely open. We really haven't done the first step. We're talking amongst ourselves within NOAA about coming up with a list of five to ten areas within each line office. There could be 50, probably not, but there could be many, many sites that are under consideration.

In the process deliberating among ourselves and getting input from stakeholders will help to narrow that down; but right now it is completely open. I am contributing to the watershed

concept by using that; but I was just thinking of the scale of kind of things that we're looking at that have been suggested in other regions are at that scale, so some quite large geographic areas under consideration.

MR. HAYMANS: George, to what extent has the states been involved in this process?

DR. SEDBERRY: There are some state representatives on the Focus Area Selection Team. The Georgia Sea Grant Director, for example, is on the team.

MR. HAYMANS: The states as in the state agencies who are the trustees of the habitat.

DR. SEDBERRY: Exactly, the state agencies are on the stakeholder list; and as soon as we get to the stakeholder stage, you will be informed about what is going on and your input will be solicited; the DNRs and the DENRs and those kinds of agencies, yes.

MR. HAYMANS: It just seems to me that NOAA would have reached out to the trustees well beyond taking this out anywhere else, because nearly every state has a restoration program already up and running in some form or fashion. This just seems to me that NOAA is taking another step inland. It seems that there is communication in advance of this process.

DR. SEDBERRY: Well, that is certainly something we need to fix. I mean this is really the first communication we've done outside of NOAA; and knowing that on this advisory panel and within the council there are state representatives, this is a good way to start. But certainly the states would be incorporated before this gets too far down the line, yes.

DR. WILBER: This will lessen your concern, but not make it go away; but keeping in mind that inside the South Atlantic and the Caribbean there are already state-led efforts like the Governors South Atlantic Alliance and Atlantic States Marine Fisheries Commission, the Atlantic Coastal Fish Habitat Partnership; I could list a whole bunch of them that have very substantial input and some are even led by the states themselves. The NOAA staffs that are on FAST are also members of all of these other groups.

The state voice right now in the FAST process is by the NOAA folks who have participated in these state-led or highly state-participating programs. Those NOAA staff can voice the state perspective during the initial FAST meetings. Eventually the process, as I understand it, is going to be opened up to include much more direct participation, but there is a substantial voice now for the states in the way the FAST was constructed. That is just my personal opinion; I am not a member of FAST.

MR. GEER: Introduce yourself, Howard.

MR. SCHNABOLK: I'm Howard Schnabolk. I work for the NOAA Fisheries Restoration Center, and I'm co-leading the effort with George. I just wanted to add that what Pace is saying is correct; and at a later stage we will reach out to our state stakeholders for comment and guidance. A big part of the effort is just to get some different line offices within NOAA who are working on habitat to come together and be a little more efficient. It is definitely an internal process, too.

MR. GEER: Thanks, Howard. Any other comments? Wilson.

DR. LANEY: Not so much a comment on this process, but one that I forgot to make earlier when we were talking about the modeling. It does enter into or at least it could enter into the NOAA Focus Area Selection process, too, and that is – and I know Roger is well aware of this – but the Nature Conservancy has done a lot of work looking at marine eco-regional characterizations for both the Mid-Atlantic and the South Atlantic.

Jay O'Dell especially, Pace, I think has looked at a lot of the onshore/offshore linkages and in fact did some modeling work that suggested that the area of intertidal or tidal marsh can be directly correlated with some attributes of the offshore ecosystems, which was kind of interesting to me that it came out that way. I am sure that Jay O'Dell and Mary Conley, who is based here in Charleston and is working on the Southeast Marine Eco-Regional Characterization, will be very much willing to work with us as the council engages in this modeling process.

MR. GEER: All right, anything else from anybody? Okay, thank you very much, I appreciate it. We're done for the day. We're meeting at 9:00 o'clock tomorrow. We're going to be talking about the Oculina Banks; the South Atlantic Landscape Conservation Cooperative and some SARP issues as well. I want a motion to adjourn for the day unless there is any other business before us at this moment. Move; and we are adjourned for the day.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday morning, April 3, 2014, and was called to order at 9:00 o'clock a.m. by Chairman Patrick Geer.

MR. GEER: All right, let's get started day. Good morning, everybody. This morning we are going to start talking about several different things. We are going to start talking about the Oculina Bank Research Area and the plan for that. We had several meetings recently through webinars. We had a general webinar and then we had breakout groups of research areas of research interest, law enforcement, and an outreach webinar. They are working on the plans right now; they are in the preliminary stages. Right now the preliminary plans are supposed to be done on the 18th?

MR. PUGLIESE: The draft.

MR. GEER: The draft is supposed to be done on the 18th. Roger is going to pull up some of the research issues that we had and research that needs to be done in that area, and we are going to discuss that. He is going to go through his presentation first.

MR. PUGLIESE: Yes; I am just going to kind of open up and set the stage for what is going on and then move into the discussion of the research and monitoring activities. I just had a quick presentation. I wanted to touch on where we are with the Oculina Experimental Closed Area, and specifically the engagement with the Habitat and Environmental Protection Advisory Panel. In the Oculina Experimental Closed Area, this is the year for an evaluation plan review, 2014.

We had it locked in, and I'll highlight the ten-year point that we've reached. The Oculina Bank Experimental Closed Area is embedded in the overall Oculina Habitat Area of Particular

Concern and was originally established through the Coral Fishery Management Plan in 1984. That was the foundation; and working from the foundation, the council, looking at and beginning the discussion on marine protected areas through Snapper Grouper Amendment 6, created the Oculina Experimental Closed Area, which just took the footprint of the HAPC and provided the prohibition of anchoring and fishing for snapper grouper species and retention of snapper grouper species in that area.

Essentially the HAPC became also the experimental closed area; and that was done in 1994. In 2004 there was to be an evaluation ten years past that in terms of what the council was going to do with regard to the regulations in the experimental closed area. There was an amendment developed, 13A, which ultimately extended the regulations in the Oculina Experimental Closed Area for an indefinite period.

But also it reestablished an another reevaluation in ten years by the council, but it was mainly to be able to provide a connection to the plan that was developed and statuses on research, on enforcement and on outreach for the activities. Amendment 13's original purpose was to provide continued protection of snapper grouper populations and oculina.

The need was to provide a hedge against the high degree of scientific uncertainty for snapper grouper species and reduce the possibility of stocks falling below sustainable levels. Yes, this was really not intended to be a replacement of existing regulations; but as it says, it is kind of a hedge against uncertainty.

In addition, the analysis and work that had been done to the point of this had shown that some of the species had begun to recover within the affected area and any gains that were achieved would have been lost if this had been reopened. In addition, the action provided the most biological, social, and economic benefits and still allowed the ability to have adaptive management.

Ultimately it gets to where we are today. The evaluation plan was developed; and the evaluation plan was hoped to increase public support and the protection of snapper grouper species and the habitats within the Oculina HAPC and the experimental closed area to decrease the amount of illegal fishing. Therefore, in the evaluation plan looking at specific areas for outreach, enforcement, research, and monitoring.

The final evaluation plan was completed March of 2005. The first review team report was completed in February 2007, which essentially took the specific areas and identified what had been accomplished to date. The evaluation plan had three components; the outreach plan, which really highlighted different activities of the Information Education Committee.

In addition, also working with partners in the region from NOAA and Southeast Fisheries Science Center; promoting information meetings that were held within the area around the Oculina Region. We had specific objectives to support development of further outreach capabilities in the plan, focus campaigns with target fishermen and media campaign; and then evaluation of that.

The enforcement plan provided the ability to really track and see what has gone on in the oculina evaluation of Oculina Experimental Closed Area and really engage the special agents and the Law Enforcement Committee and were highlighting activities and what was going on with

regard to the vessel monitoring capabilities, cooperative enforcement; highlighting increased presence of activities within there, and the fact that there were going to be enforcement reports provided to the council, as well as additional outreach and education to enhance enforceability.

That brings us to the research and monitoring plan component of the evaluation plan, which was I was going to highlight kind of where we are with that discussion. The original plan was tied to some of the deep-water coral research and monitoring work that was done in Cape Canaveral, identifying 7 objectives; habitat recovery, effective fish distribution, status population structure, coral stressors affecting the Oculina Experimental Closed Area, key trophodynamics groups, physical chemical parameters and the research on coral feeding ecology.

That is where we are in terms of development of this, which will be this next report; that final report, the evaluation team report. This will be essentially an update to that report. What was done to be able to track and figure out where we are was an evaluation. This larger spreadsheet that I had distributed – I distributed the original one that was reviewed, and then an update came literally like a couple days ago that I think you all should have received; but I just highlighted some of the activities.

What this does is it takes the major component of the research and monitoring that was desired for this region and identifies the entire work that was done previous. Then more recently what I was going to focus on any of the new developments or what may be going to the status report. I'm just going to kind of walk through quickly the different parts.

What I'll step through are the new developments and anything that may go into the status reports and notes that were highlighted in the discussion. The first area was will Oculina thicket habitat recover? There is essentially no new information that is being done; however, some of the work is going to be done with regard to mapping of the area within three years.

The first objective is to identify coral fish recruitment pathways. The early work in 2008 field research was conducted, and they were able to put modules down. That was intended to provide some of the abilities to see what some of the recruitment pathways may involve. The 2011 Pisces field work did identify one of the modules on Chapman's Reef, but a number of those had not been able to be found within the region.

There has been some speculation about the early time when there still was some activity in the area that may have been moved or drug up or transported from the area. The bottom line is there has not been a lot of additional work done to be able to either find these areas or be able to characterize the pathways that were originally identified.

Objective 2, model biophysical, chemical and physiological characters; and Florida Atlantic University has specifically hired two physical oceanographers with specifically that research focus. This is looking at the implications of Oculina and the state of Florida current. There is a lot of expertise at FAU involved in the oceanographic observation and use of technology. Hopefully, that will provide a specific focus to build some of this stuff into the future.

The #2 area was determine and monitor the effects of the Oculina Experimental Closed Area. This was to be originally completed by the original Year 10; and this involved a number of

objectives; assess spawning aggregations. That specific objective was identified by the group to be still a very high priority. You really need to assess year-round and during spawning events.

Some of the problems we have with this is that most of the research that has been able to be – you know, where there has been the opportunity to fund mapping and characterization and species' collections in the region, because of the weather a lot of the efforts are focused during the time that you would not have – basically the summer; the cruises where they can get hold of the Pisces or NOAA vessels that don't necessarily coincide with the spawning periods.

That is an issue that needs to be addressed with somehow being able to get specific activities that coincide directly with those periods to be able to document the efforts. That continues to be a problem especially if you are just relying on the NOAA fleet and the vessels that have limited access to time to be able to get those into the region.

Tracking fish movement; there has not been any additional specific work done for the Oculina Region. Identification of fish population demographics; what was identified as at least trying to begin to understand temporal appropriateness of surveys. That again goes back to this issue of being able to ultimately being able to sample throughout multiple season, so you could really be able to document the movement of the species within the Oculina Bank, in and out and by life stage.

Objective 4 was to determine pre-closure distribution of dominant harvest species inside and outside the reserves and basically to give you a context and look at things such as spillover and pathways, both adult and juvenile. It was identified that a report by the Gulf and South Atlantic Fisheries Foundation in 2011 provided the assessment of impacts of MPAs, in-depth ethnographic profile of the Fort Pierce fishing community as being one opportunity to look at some of the changes that occurred.

Now, that is not a technical report. This is really going directly to the fishermen and having a context of what has happened over time in the Oculina Bank; but that is about the only thing that really gets to some of these issues of what people have seen and what has transpired over time in the region. No additional work on age distribution, nursery grounds, migratory patterns within the area.

The third area was the population structures of corals. Again that was originally to be completed by Year 10, and most of that still has yet to be accomplished. Now Sandra Brooke did publish a report in 2008 that did provide a pretty significant amount of the specific information on the genetics of oculina varicosa.

With regard to any cross-shelf relationships, there still has yet to be work done between population analysis as well as the biogeography. Number 4 was getting to the stressors affecting the Oculina; again another one that was supposed to originally be completed by Year 10. This objective was identified by the research and monitoring group; and the evaluation team at this time is still a high priority. The concerns were to begin to understand research on sedimentation, temperature and other stressors that may have detrimental effects on coral.

It needs to be done. John Reed has provided a paper to the process where he did look at some very specific sub-lethal effects on oculina. That really is about the only thing with regard to that

area that had been accomplished to date. Any of the anthropogenic stressors, the severity of sedimentation or physiological tolerances and environmental stressors has yet to be really compiled, other than the work that John had done.

The fifth area was key trophodynamics functional groups in the area, beginning to look at the broader components. We talked about how we are protecting the area as an ecological area since it is considered an essential fish habitat- habitat area of particular concern, as well as a HAPC or a coral habitat area of particular concern and the experimental closed area. All those habitats and species' functions are intended to be in conservation.

However, there has not been a whole lot of work being able to do that type of analysis or work yet. The other area was to develop an index of physical and chemical parameters that characterize a healthy Oculina Coral System and neither the index health nor community health have been completed.

Indicators of substrate, geological formations, any of the other type of analysis of the core samples or paleo-data that may come from the oculina have yet to be analyzed or are slated to be analyzed into the future right now. On the feeding ecology for corals, there has not been anything done relative to feeding ecology.

The effects of management measures on the status of fisheries and stocks; what has been done to date is Southeast Fisheries Science Center hasn't received specific funding to do any of this analysis since 2005. There were 5 ROV dives that were accomplished by the Pisces in the coral cruise, July 2011.

That information needs to be integrated into the final report of the Experimental Closed Area. This provides species' composition tables, but again it is only based on the five ROV dives that have been done to date. The characterization of fish communities inside and out; one thing that is ongoing and was identified since a lot of this work has yet to be done, that the 2014 to 2016 coral grants that has been submitted for potential funding was going to focus on completing mapping and completing some of the species and habitat characterization within the bounds of what can be accomplished in that period.

The attempt was to try to at least get a baseline for the Experimental Closed Area by the end of that timeframe. That is at least something that is a pretty significant opportunity and effort that the council is fostering in cooperation with NOAA to be able to get this done, and the partners with CRCP, which includes Harbor Branch and FAU.

Connectivity to the broader seascape; there still is work that is yet to be done on that. What are the major habitat types? Again, that will be done as part of the ongoing work that is going to be funded into the future. Some of the specific work with regard to health, some of the structure and function over time; those areas have yet to be accomplished; and origin, function and characterization of some of the different habitats.

There is a lot of crossover between this; and as everybody has seen, this was like the ultimate wish list to get everything we never needed to know about Oculina done. The bottom line is that we are going to have more work done in a period of time; but to date there has still yet to be

significant enough work to really provide what the council really needs to make sure that these areas are protected and are accomplishing what needs to be done.

How do oceanographic conditions and episodic events affect these systems; there has yet to be anything on this. However, as I mentioned on the climate workshop, this was that whole issue of increased upwelling events. Hopefully, there is going to be enough focus and discussion about that as being a significant enough activity on the east coast of Florida, that work on the upwelling in and of itself will connect and be able to provide some context of how it may be affecting not only the inshore areas and species like king mackerel, but also the entire Oculina Bank and the associated areas. Hopefully, that is actually something that will have some focus.

Those are the main areas; and what we ultimately identified were just some of the other publications that have been accomplished, assessment impacts of the Oculina MPA that I mentioned, the ethnographic profile; impacts of bottom trawling on deep coral oculina; the ecosystems is John Reed's publication; the assessment of fish population in the Oculina Bank and CRCP/SEADESC report, that we have integrated most of those SEADESC components into our Atlas and some of the specific information into the supporting information that goes along with those SEADESC reports connected to the Atlas.

Sub-lethal coral stress levels; which was the one I mentioned earlier on with again John Reed had provided that; and then the nuclear sequences isolation of an imperiled deepwater coral populations; I think that is the work from Sandra. So, that is the context of what research has been accomplished – research and monitoring has been accomplished in the Oculina Experimental Closed Area in relationship to the original evaluation plan.

The timing now, as Pat has indicated, is that the plan document that I showed you; essentially what this will be is an update to that 2005 team review. It will look at and go through these things and really flesh out what has been accomplished and focus mostly on that versus what hasn't been accomplished and shore up where things are and highlight some of the priorities that were again raised and some that I've highlighted within this spreadsheet here.

That is where we stand with the development of the Oculina Evaluation Plan Review for the Experimental Closed Area. This is being brought forward to all of our APs for any input on thoughts or comments, or recommendations with regard to where we stand with the Experimental Closed Area.

MR. GEER: Thank you, Roger. Any questions?

AP MEMBER: Are you the one compiling all this data or who all is involved in compiling it? I know there are a lot of researchers doing the work.

MR. PUGLIESE: We have an Experimental Closed Area Team that has a research and monitoring section, the ones that are involved directly in outreach, and then in law enforcement. Many of them are the original – if you look into the original last review, many of those players are still some of those.

We brought additional researchers, additional enforcement types and fishermen. That whole team has been reconstituted; the council approved and initiated this process recently. That team;

you are having a lead from each of those actually taking the material and putting it together. Then it is staff, myself, Anna Martin and Kim Iverson are coordinating with those groups to get it compiled into that ultimate document.

AP MEMBER: Do they see the end result that we see to confirm that what our summary is, is what their research was saying? Let me rephrase the question.

MR. PUGLIESE: Yes, please.

AP MEMBER: Do we give them feedback on this summary here? Will they see this Excel Spreadsheet?

MR. PUGLIESE: This Excel Spreadsheet essentially is built on the deliberations of the groups. There is one for each one of the groups and where they have discussed it and reaffirmed priority or identified research that has been accomplished or identified needs that are accomplished. This is really drawing directly from that evaluation and review.

What I am doing is just relaying kind of the highlights of their recommendations or where they have seen additional things. Also, the fact that there are a lot of these that are left open is their acknowledgement that there has not been research or additional work done in some of these priority areas that we've identified in the plan. You're seeing very specifically the output kind of a condensed version of what the deliberation discussions were of those groups.

DR. WILBER: Roger, I just have some context questions; not being an expert on Snapper Grouper Amendment 13A. The phrase Experimental Closure Area implies to me that the closure was done as an experiment; and at some point there will be an evaluation about whether either, A, to continue to keep it closed; or, B, to expand the amount of the Oculina Bank that is closed. Is that correct?

MR. PUGLIESE: Actually its original wording was intended that way. That has already essentially happened, because it was called the Experimental Closed Area. The intent was after 10 years, that evaluation was going to happen. The action that happened – Amendment 6 was the original designation; 13A was the 10-year point that there was a directive you do the evaluation.

The alternatives of whether to keep it in place or put a 10 year, 20, 50, or in perpetuity; that decision was made that now in that action that this is in perpetuity. This 10-year review is just a review to try to ensure that more of it – so the bottom line is that name is somewhat of an issue, because technically it is still an experiment in terms of being able to do the research to really quantify what is going on in the area and provide what the council needs.

Originally this was intended to be the stepping stone for all the MPA activities. The bottom line, we got to the end of that 10-year, and it was still questionable about how much had been done. But the council, based on those points that I made, saw the value and the benefit of continuing moving forward with this. The bottom line is while it may be considered an experiment, it is actually technically right now in perpetuity.

DR. WILBER: In summary, you are not expecting to come to the Habitat AP any time in the future and ask for the AP's recommendation about whether or not the area should remain closed?

MR. PUGLIESE: We're not really making that, but let me let Gregg elaborate on that.

MR. WAUGH: To clarify first on your point about experiment; I guess it is an experiment to see if we could do the monitoring, the research, the enforcement, and I guess it is a resounding no; similar to what we've experienced with our MPAs. Now as far as the basic mapping, at the end of this next three-year coral grant that we administer, we'll have the area mapped finally.

It is not on an automatic sunset. Initially it was on a sunset, and we almost lost it because of the lack of any effective research, monitoring and enforcement. But Roger is right; it doesn't have an automatic sunset, but at some point we are going to be held accountable by the public. If you can't show any benefits to these areas, why are we keeping them closed if we can't do the basic enforcement, the basic research and monitoring?

This isn't like some of our offshore MPAs that are real far offshore. This isn't far offshore at all. There is no set sunset period. There is also nothing to preclude you all from providing any additional recommendations. If you don't think it is effective to keep the area closed, then you can make that recommendation. Ultimately at some point we're going to be held accountable by the public; and right now we don't have a lot to defend these areas, and this one in particular.

DR. WILBER: Thanks; that was really helpful. It connects a lot of the snippets of conversations I've eavesdropped on over the last few years. My other question is over the last few years there have been a lot of proposed non-fishing threats to the Oculina Bank. As an example, some of the counties off of Florida have talked about deploying artificial reefs like literally within a quarter mile of the boundary.

Under the NOAA Marine Debris Program, folks have wanted to go out there and mine for stray copper cable, things like that some of us hear about, but most of us probably don't hear about. I think it would be useful to have some kind of compiled non-fishing threats that it is not a purely theoretical discussion, but actually gets down to what really has been proposed in the last couple of years and see if that list can somewhat kind of be maintained. Since many of us in the group here are more in the regulatory habitat protection kind of side as opposed to the fishing management kind of side; knowing how we kind of fit in with helping to keep this area what it is would be useful.

MR. PUGLIESE: I think that is going to be important. I think it is part of the process we're going through with updating and refining the EFH. The area is an HAPC, also, EFH side. That is something that we'd like to do. You are correct; some of these have come up and they are very specific to that location.

It probably is not something that was captured in maybe previous threats, especially like the cable removal and placement of some of the areas that may actually be intercepting gag as they are moving into the area. There are issues that I think we can definitely begin to compile those very specifically to the Oculina Experimental Closed Area and then ultimately for the entire Bank System.

This area in the discussion we're really having is really focused on the Experimental Closed Area itself, the snapper grouper component. However, it is part of the bigger Bank System that we really need to have all those types of threats identified for that entire system and habitats, in all of the habitats; again, because it is the complex we're looking at for the protection.

MR. GEER: Roger, I have a quick question. I'm looking at the cost. Are those cost estimates based on the 2005 plan, the status report in 2007, or 2014 dollars?

MR. PUGLIESE: I think any of those original cost estimates were probably out of the last evaluation where they had identified what it would take to do that. They may be there, but I doubt that they are. Number one, they haven't been gotten yet.

MR. GEER: So obviously there are going to be more now?

MR. PUGLIESE: Yes; if anything, they would be more.

MR. GEER: There have only been 6 of the 33 objectives that have been met. My question is where is the funding coming from to do this research with funding being cut everywhere?

MR. PUGLIESE: That is a significant issue. I think the one key – and I tried to highlight it – it kind of gets lost a little bit in the discussion, and Gregg was very clear that we do have some control over some of the resources that are coming through the coral grants to the council in collaboration with NOAA, Southeast Center and with the CRCP group to do the base mapping of these areas, to have people like John Reed involved specifically in characterizing some of the habitat distributions in the area and getting as much as we can for that part; but that is still only a piece.

As I mentioned before, it is not sampling in the timeframe that is giving us spawning information. The one other aspect that is embedded in here, and actually it may go even further hopefully, is that point that was made about FAU. I just got something form John Reed on both FAU and Harbor Branch bringing somebody else on board, a biologist that may help making that connectivity to oceanographic characteristics in the area.

I have integrated the discussion on oculina both for this area, but for the larger area in the Ocean Observing Association's 10 year build-out plans in terms of assets that could be deployed in these type of areas and everything from fixed-buoy systems for any of our managed areas to beginning to look at trying to use AUVs and gliders and different types of things for the area.

It has been opportunistic. Those are probably the two major areas right now that I know of that you would see this. One thing that would be interesting is if there is a discussion on climate; if there is an opportunity to maybe get at least analysis of some of these habitats, because they have some specific implications for that longer term.

Beyond that; there is a discussion that I've had since working with our fishery independent about maybe opportunistic or the ability to expand monitoring of the SEAMAP/MARMAP/SEFIS and having components added in there as routine monitoring within the system.

But that is something that would have to be looked at to make sure you are not impacting the integrity of the existing fishery-independent surveys; but it is something that we've discussed and I've discussed with Marcel Reichert and Todd Kellison in going further. But the bottom line is that is about it right now.

MR. WAUGH: Roger has hit on it; we're going to have to be creative with this funding. We're working on a system management plan for our existing MPAs that will identify in specific terms similar to this what needs to be done; but obviously the cost is high. In that system management plan effort, Dr. Ponwith has indicated that the Center will willingly participate; but they cannot commit to any responsibility to do any of the research or any of the monitoring.

I think that is what you're seeing here even with this, the close proximity of this area, the realities of the federal budget are that they can't contribute much to the research and monitoring. Now as was indicated, we are using a coral grant. We will have that area basically mapped at the end of three years. But we've got to get creative through other linkages, universities and try to work with the NGOs; because federally the money just isn't there now, hasn't been there, isn't there and won't be there.

MR. GEER: All right, any other comments, suggestions, or questions on this? All right, moving on, South Atlantic Landscape Conservation Cooperative, the blueprint for them.

MR. PUGLIESE: I've got a presentation to run through, but I think there had been kind of a question. I have been trying to keep the AP up to speed as well as the council as we're moving forward. The South Atlantic Landscape Conservation Cooperative I wanted to get in – I had the question of even though we've been keeping things on the move, who exactly they are and where is this going.

I will get into a presentation specifically on the more recent activity on the blueprint, of which a number of you have actually been directly involved with. But the South Atlantic Landscape Conservation Cooperative Mission is to create a shared blueprint for landscape conservation actions and sustain natural and cultural resources.

The Cooperative is a forum that is supposed to be leading the conservation community in looking at shared vision of landscapes, sustainability, and implementation collaboration in its refinement with all the partners. It looks at providing a blueprint for collective action in collaboration and communication across diverse organizations.

It provides practical scientific basis tool of conservation managers to help effectively address stress and climate change, urbanization, sea level rise, invasive species, water scarcity, other land- use areas. It spans organizational and political bounds. I think that is one of the most unique aspects of this, to look at everything from conservation land, water, wildlife, culture, heritage, and human health.

It really does not weigh specifically on any single agency organization. A lot of times people have looked at this because it had some of its origins in U.S. Fish and Wildlife and USGS, in kind of becoming what it is now; but it really is a cooperative across a broad range of groups. It does really respect the jurisdictional authorities and really is fostering communication between the different groups.

The intent is really going into that, while it respects the jurisdictional authorities, removing the barriers to look at conservation; to be able to come from that highest level to look at conservation from essentially the mountains to the deep ocean. This is really important, because this is one of the first times that anybody has looked at that connection of everything from wildlife, fish, water resources and rivers through the nearshore to the offshore and deep habitats and pelagic habitats.

It is a real opportunity for us, because we sit right at the table with this group. What I wanted to do – the steering committee of the Conservation Cooperative includes South Carolina Department of Natural Resources, Florida Fish and Wildlife Commission, North Carolina Wildlife Resources Commission, Georgia DNR, Virginia Department of Game and Fisheries, USGS, National Parks Service, The Nature Conservancy, the South Atlantic Council, U.S. Fish and Wildlife Service, NOAA, Environmental Protection Agency, U.S. Forest Service and the Department of Defense.

Actually, the Defense Department was the Chair of the last – DOD chaired the steering committee up until last week, where Mike Harris with the Georgia Department of Natural Resources is now the new Chair of the SALCC. This organization formally started in 2009. It started long before that in terms of concept and development.

The idea is to collaboratively look at the entire landscape area that I had mentioned. One of the first tasks the Landscape Conservation Cooperative had was looking at this movement toward a conservation blueprint. As I mentioned, the LCC is just one. The South Atlantic LCC is one of an entire network of landscape conservation cooperatives through the entire country.

We really at the South Atlantic level have set the stage and provided guidance in terms of even the structure, because all components of LCCs that have coastal, extend their footprint to the end of the EEZ; so everything from the Pacific to the Atlantic, Gulf of Mexico, and West Coast has connections where you have land and sea connections.

They really are trying to look at the connectivity of the entire system and are looking at working and acknowledging the council's activities within these efforts. The idea is that the LCCs are to apply conservation science partnerships among federal, regional, state, tribes, NGOs, universities and other entities in that footprint. The partnership is to consider landscape scale stressors.

I mentioned before some of the key things, and I think this is really what does separate this group out. It is the opportunity to tap in on some of the climate variability change or other activities, because of the direct connection that the LCCs have to the USGS Climate Science Centers, which are fully funded and moving forward.

Their primary responsibility is to provide support for the LCCs. That does provide us an opportunity to tap in and collaborate with this organization. This gives you a better vision of how this can look at landscape conservation that supports healthy fish population, wildlife, and cultural resources.

This is the general footprint of the SALCC concept when you're looking at the blueprint in the area. You're looking at the land systems all the way into the marine systems, nearshore into the marine systems. What was charged back in 2013 was that the effort was actually going to move

forward with a first Version 1, which is really intended to be Version 1, a first attempt to take this big step forward and look at everything in context, and complete it by March of 2014. That is where we are.

What was held were inland and marine workshops to look at both the inland information; and it was broken up where you would be looking at both very specific locations, so you were looking at one state or two states within an area or you were looking at the entire region; so you had the ability to participate in both sides of that discussion.

Those were effectively analyzed and then combined together with both an inland and a marine component. The marine was done mainly through webinar activities to get to where it is. The key was that from a council perspective is that we participated in the workshop, but also some of the foundation information going in there really tied very closely to our essential fish habitat designations and council-managed species supporting that.

I think it was a real opportunity to add that right in the front end. This Version 1 point of the blueprint was tied to – originally there was development of indicators and targets to give some metrics of where we were going to go. Identification of – and I think I mentioned this in a number of other AP meetings, the opportunity to look at the state of the South Atlantic; that we can draw directly from some of the deliberations that are going on here that we can integrate in the background are connected directly to the Fishery Ecosystem Plan.

Specifically the conservation blueprints were a connection to what we were working on. What you have and what was being looked at were the landscape scale stressors. There are these for all the different parts of what this effort is looking at and then potential conservation actions. It is attempting to connect those and then provide this view from – again that high-level view of the entire system. Again it is cooperative across all the different organizations.

The intent is to be an adaptive system that takes in account other changes; environmental change, urban growth, and other anticipated changes. What supported this was the development of the regional workshops to build the foundations. Integration went into the background information that did that or integration of a number of existing plans, everything from TNCs eco-regional plans to individual state plans, and even things such as the bobwhite quail joint venture.

It was really integrating it as much as it could on the front end to give some guidance on where it went. A lot of what we had was during the workshops was really again reemphasizing the essential fish habitat distributions and the states estuarine habitats as being critical components of this.

A lot of this was directly integrated and included, and it is available through the planning atlas that the LCC has developed. On our EFH designation we work very closely, and they are drawing directly from what we have. The workshop activity was pretty impressive. They had over 200 people and 58 organizations involved directly in providing input on where this is going.

Ultimately what it did is it provided the ability to select the different watersheds in terms of priorities for the areas, and it was an effort of looking at whatever contexts were and look at the different habitats from' again, say, in the inland areas from the upper states all the way to the

coastline; and look at things such as connectivity, to look at key habitats, to look at key conservation measures already in place.

In terms of looking at existing plans, these are the types of things that got embedded into this discussion, the eco-regional plans, joint ventures, the reptile components, the HERPs, the bobwhite quail, EPA priority watersheds, Virginia's natural lands, and North Carolina and Florida CLIP, Georgia's priority waters and Alabama's priority areas, also.

Part of this, it doesn't specifically show it, but I think our essential fish habitat and estuarine habitats were integrated as we went through the process more than really almost on the front end. What you had were the workshops were held. All of this that were recommended and identified are actually interactive and were provided at the workshops and then are online.

You can actually see the background documentation that provides the foundation of why some of these recommendations were made. When you went through all that, you ultimately ended up with a prioritization based on watersheds that gave you high priority for shared action, the highest priority for both the significant purple and blues ended up kind of giving you core components of the recommendations for the combined systems and other areas that looked at more investigation and lower priority for considerations.

Then when we went to the marine system, they used the OCS lease block components just as a kind of foundation, but used our essential fish habitat-habitat area of particular concern designations as a footprint and a foundation from which to start the discussions. What it provided is it provided the opportunity to look at key areas.

Some things that jump right out at you are nearshore hard-bottom areas, some of the marine protected areas are embedded within the system, the Deepwater Coral HAPCs; but then some of the key habitats that were added in were expansion of kind of the shelf-edge components. This is not all fish. You've got to remember that is why you are seeing kind of this aggregation of discussion.

Some of the areas are being brought in for like the eastern component of the southern portion is really tied more to the right whale conservation. The northern section is tied more to marine bird value in the system. It is really trying to blend a number of these to get that first snapshot; even including something in that large area in terms of further investigation really was tied to our Charleston Bump Complex.

Some of these things, when you start combining them together for different reasons, they raise some flags or concerns over some of it. What it ultimately does is provides the opportunity to go back and further investigate. That is kind of the phase we're at, in going into Version 2 because the designation of that area had very specific rationale for dolphin and wahoo when that was created.

It was created very basically versus some of the technology we have now to be able to look at this and say that area captures both the bump and then the gyre and maybe look at oscillations relative to the gyre to come up with a more realistic presentation of what that constitutes. Those are the kinds of things that – that is exactly why some of this was there that it gave the teaser.

When you aggregate these together, what you start seeing is this intent of creating conservation corridors; looking at where there are key habitats; many of the river systems and then the entire marine estuarine system as a component of either already in conservation or the need for conservation connection to the overall system. This is the first time that everything has been looked at in context.

Even though it is at a basic level right now, it is still fairly exciting to be able to look at that; especially with the opportunities that we have coming down the road. When you look at this and try to analyze this very informed view of what we're looking at; it actually shows that within the embedded systems you have like 23 percent of the areas are highest priority. Highest priority as land is at about 3 percent.

Then if you look at the nearshore area; highest priority is close to 20 or 19 percent. If you look at it based on an eco-regional component – now these are not tied to say some of the designations. These are tied to really those true distributions that we were looking at within the groups.

From the Piedmonts to Southeast Plains, the Southern Coastal Plain, Mid-Atlantic Coastal Plain, the Blue Ridge, and ridge and valleys; you can see the different proportions of highest priorities, to proportion of what the LCC identifies. Ultimately what you have is acknowledging that about 21 percent of the area has been identified as potentially already protected and about 7 percent is high; 2 percent for further investigation.

Now, what that also did was provide the opportunities to look at the information and where do you go with this? The landscape changed and you're trying to look at overall integrity of the habitat. An example component of one of the areas that was identified as a target was looking at the impact on some of the river systems, the impervious and the estuarine systems, the impervious areas, and where that is and where it may go in the future with regard to trying to limit that amount of area to protect the integrity of the estuarine watershed areas.

What this shows is they have the ability to project out to 2050 where the areas are and relative to the targets that were identified. Right now it is showing that if there is nothing done whatsoever, that you are going to have a continued decline. This is really kind of tied directly to the whole issue of the urbanization of our coastal zone area and the continued hardening of many of our edges of upper river and estuarine systems; but highlighting where some of these key areas provide the opportunity that some of those are already in protection or potentially can be focus areas to look at conservation in those areas.

It is not just being done willy-nilly; they really are getting into there. This is some of the collaboration that is done based on talk about all our other partners. The SARP program and their investment in the in-stream flow research and some of the other things such as building the information on the change of urban systems has provided some of these kind of foundation points or information that does show where you're going to see change.

In this case right here what it is showing is giving the prediction of where you are going to see your areas having more than 10 percent impervious surfaces occur within the timeframes to 2050. That is where you would have some critical things, so it is providing focus areas. The steps, as I mentioned, you dealt with the indicators.

We're looking at the state of the South Atlantic and then ultimately the activity you have now. I already mentioned the funding of the in-stream flow is enhancing some of those specific activities that I've mentioned. That is kind of where we stand with Version 1 of the Conservation Blueprint. It is a pretty significant effort to this point. The idea here is to further engage the partners.

It is kind of a jumping off point to provide us the opportunity at the AP level to have more input and guidance on how this information also may get refined. If you had looked before at the way the coastal areas were captured; I think the internal translation of that will be the integration of specifically the EFH designations of those habitats within there to be the validation of why those are significant, as well as the offshore areas and then enhancements of this.

I think there is opportunity to really take this to the next level. I pulled a lot of this directly out of literally a week ago that we're discussing, so it is hot off the press. A lot of this is being worked further. Also the recommendations; this group didn't stop. This is where a lot of these types of exercises usually end. It is a great, hey, we need to move forward here.

We very specifically set the stage for Version 2, which really gets into committing to taking this to the next level both in integration of very specifically some of these – like, for example, the integration of the essential fish habitat designations very specifically, but then also providing foundation type of activities to look into the future.

Within a year, Version 2 is intended to be developed. The intent is to engage a lot further the partners. I anticipate as we move through the timing on this, as we move through the FEP process, the ideas that we can really integrate a lot of what is going on here and be able to draw on capabilities, tools and value from efforts.

Some things that were agreed on that affect us at this last meeting and looking to the future were being able to work collaboratively with the climate science centers to take – as we more clearly define the essential fish habitat estuarine areas – projections of what it might mean in terms of if we see sea level rise on the entire region, the losses of essential fish habitat within that region; so we actually may have resources provided to be able to provide that to a view.

We begin to at least open that door of what the implications may be and then we can begin to take it the step further in terms of modeling and other ecosystem activities. One of the other activities that might link to that, as I mentioned and talked about the ecosystem model, that we had worked with Tom Okey and Pew to develop a forage-based model.

When I mentioned taking it to the next step, this is exactly where I was taking the next step is that we've got agreement to move forward with a regional ecosystem model even on a bigger way with the opportunity to look at connectivity in the system, identify the complexes, the species that are utilizing this.

I think it really fits in well with this process; because when we did the last model efforts, some of the best information we had was the bird information there. We do cross between these different systems, but I think ultimately have the ability, as Gregg mentioned, to be creative and work with our partners to provide even more types of information that is going to benefit our essential

fish habitat designations, our understanding of species, and then understand the bigger issues of food web connectivity and the ability to work back and forth between some of these systems.

I think the ability to have – we have partners from the Park Service, all these other ones where we can look at what their conservation efforts are and how that is also – you are looking at collaborations. What they're doing here is also having implications on conservation of essential fish habitat or our essential fish habitat designations are actually benefiting bird populations or whatever. That discussion has never really almost been held at those levels, and this is an opportunity to take it to the mix, which I think is really a very unique system.

More importantly it is very much supported at a national level and has resources that our partners are weighing in and providing and stepping to the table to make this more than just a nice effort in view of what could be done. That is kind of in a snapshot where we are, where they are hoping we can go. It is an opportunity that provides for this entire group to fully engage into this process and the council and our states and all of our other partners.

MR. GEER: That is a question I have for the AP itself; how many of you have been involved or have had interactions with the cooperative so far? Okay, a fair number. That is what I suspected, so we're already working with them. Are there any comments; anything anybody wants to add?

DR. LANEY: I was just going to let people know that along with nine other folks I've been tapped by our Regional Director to be put on a team. Hopefully, this same kind of team will develop for all the other South Atlantic LCC partners. What our team is going to do is take a look at the South Atlantic LCC national resource indicators and crosswalk those with proposed surrogate species that the Service is designating as a way for us to try and get a handle on our workload.

If you are interested in the details, talk to me later, but basically how that worked is the Service developed this tentative list, and it was run by representatives from the five SALCC key states there. It was then basically handed to the team and we were told, okay, do this crosswalk exercise and figure out what we're already doing as a Fish and Wildlife Service that addresses both the South Atlantic LCC natural resource indicators and our own surrogate species.

Once we do that, then we'll have an idea of where the gaps are and what additional work we as an agency may be able to do to contribute to the overall movement towards that conservation blueprint that Roger discussed. If you are interested in details, I'll be happy to talk to you about that.

MR. MIKELL: It seemed like to me one of the organizations that should be at the table is the Land Trust Alliance. In South Carolina we've got a land trust alliance which is made up of most all of the land trust in South Carolina. We're all working towards the same bottom line. I think they would be a big help to this organization.

DR. WILBER: I presume that the outputs from the LCC are going to be big drivers in the FEP II. I think the affect of the LCC efforts is going to be a heightened attention on tidal creeks, salt marshes, and tidal freshwater wetlands. I think that is pretty obvious. From a marine fisheries perspective, that is what we're going to get out of the LCC.

When you look at the habitat plan and the parts that got updated in FEP I and the parts that we really need to make sure we do a great job on in FEP II are the parts that deal with those habitats. They did not all get some great attention in that leap from Habitat Plan to FEP I. Related to that on your last bullet there about EFH and HAPC designations; much of the habitat plan and still some of the FEP plan talks about tidal creeks and salt marshes as if they are HAPCs, but they never got actually designated as HAPCs. Maybe part of the outcome that can come from marrying the LCC to a really good FEP II on those habitats is a set of recommendations to make tidal creeks, freshwater wetlands and salt marshes an HAPC.

DR. LANEY: I was just going to respond to Jenks' comment. I think, Jenks, that those local land trusts are going to be key to moving that whole conservation blueprint forward and will be probably integrated into the process by each of the individual state representatives. Maybe Roger can address that, too.

The SALCC has a Partnership Committee as well as a Steering Committee, and the Partnership Committee involves a lot of folks I think that probably either are directly involved in those land trusts or we will be involving those land trust in this effort. It is very much a collaborative approach as he indicated. That is what makes it different from past approaches is now everybody is working together to try and achieve this end at a scale that I don't think has ever been done before.

That was the concept behind the LCCs. For some of you who are familiar with the Bird Joint Venture Program, especially the Waterfowl Joint Ventures, it was kind of modeled after that from a geographic standpoint. There are a bunch of these things across the landscape. The South Atlantic one was of the first ones or was the first one that was set up.

That is why it is a little bit further along in the planning process than some of the other LCCs are. Ultimately, the same sort of cross-walking exercise and team will be established for the other five LCCs in the Service's Southeast Region, and they will all be going through the similar process. There are some differences between each one; but hopefully the outcome should be a much more sustainable landscape from an ecosystem perspective across the whole country.

MR. PRATT: I've just got a comment on Jenks and Wilson. I learned a long time ago in working with habitat conservation is that you use at a lesser rate when in fact what we need in habitat protection is not conservation but preservation. That is where the land trust and the other groups that go out and buy it up and hold onto it are going to come into play. I think you need to really define in respect to required habitats whether you wish to conserve that habitat or whether in fact you want to protect it for all future generations by preserving it.

MR. PUGLIESE: I was just going to respond very specifically to that. I think one of the very powerful aspects of the way this is proceeding is that you can actually drill down through some of these and see some of the drivers of why that isn't a conservation area, and some of those very specific activities where they have been doing land preservation or conservation over time are imbedded in the layers already.

Some of these players have been integrating and connecting that in, so you can see that as one of the drivers of why that got added in so you have that in the existing, and then it also shows where

you may have breaks between the systems. I think there is kind of between both your comment and the way Jenks has said; that is not only a significant portion of this acknowledged, but also embedded already so you can drill through this and begin to see where activity has already occurred, and then set the stage for where you may be able to go on and enhance connections between those systems and beyond. It is very critical, but very much acknowledged important part in all the states participating.

MR. STREET: Is the military a member of all these things? I know in Eastern North Carolina, the military is a major landholder and a major funder of buying up lands around their edges to prevent development and conserving a lot of resources and protecting a lot of lands in cooperation with the land trust, TNC, and others.

MR. PUGLIESE: Very specifically to that; the Chairman that is just stepping off is the Department of Defense was chairing it going into here; so they have a very strong presence. He actually is capturing a very interesting aspect because of kind of the broader view is he is stepping from the DOD oversight, because these are up pretty high in the chain of command, to actually being the representative for the Corps of Engineers.

The Corps coming in with that broader perspective is now going to be represented also within the group, which I think is a real benefit in this discussion. Yes, DOD and Department of Defense has been a pretty significant player already. I have also acknowledged some of our workings when we're moving into the marine with Navy and working with Carter and other partners.

I think that is the beauty of this system is when it comes to the defense. They're already represented, but there are other connections with other groups that have had those already at the table that are also being acknowledged, because it is such a major player.

MR. MIKELL: It looks like to me the Department of Defense is trying their damndest to get out of business, so let's don't count on their money.

MR. GIBSON: Two comments; one, Roger, you mentioned the Fishery Ecosystem Plan. This is wonderful, but it is very habitat focused, and I just don't want anybody to forget about the fish that the habitat produces. There needs to be some mechanism, I don't know what to suggest, where we're talking about like pinfish and seagrass, how they kind of can't live without each other. There needs to be some focus on trophic levels and food webs.

The second thing I just want to bring up that doesn't have anything particularly to do with this; but we've got what is called the Florida Land and Water Legacy Act on the ballot for November. What that will force the Florida Legislature to do is spend; I think it is a minimum of $200 million a year on land acquisition and restoration since they keep raiding Florida forever.

That is going to be right next to the medical marijuana bill on the ballot in November, so I figure all the hippies will come out and they will just click yes for both and we'll win. No, it is very popular and barring some group spending tens of millions of dollars to spread misinformation about it, I think we'll get it on there. That should be on everybody's radar in the context of this. The enabling language for that will be written in the next legislative session, so there may be opportunities to tie this to that.

MR. GEER: Terry, they are beginning to look at some – you mentioned fish. Through the South Atlantic Alliance and the Landscape Conservation Cooperative and TNC, we're looking at fisheries-independent data for blue crab and doing some of those same things. They wanted to pick a species to start with. After some debate, we decided on blue crabs, so they're starting with that. There are some exercises going on with some species.

MR. PUGLIESE: That discussion is embedded in this entire thing, because it has gone back and forth on being able to bring it back to species and we keep on working. Some of the indicators are – I didn't get into all the details on this, because there are just so many things going on with it right now. Some of the indicators are species-driven and some are habitat-driven.

The linkages that I make on the essential fish habitat go back to species. The opportunity with the modeling was going to make linkages between species and those habitats. I think species is continually being integrated and some of our partnerships like working with SARP and their background into here is the translation of habitat to fish, very specific in fishing opportunity.

Needless to say, that is very much integrated and highlighted and is being very strategically operated both as indicators as well as justification for the conservation. When I bring it back into our EFH components, it is going to have linkage. That is why I said the timing is perfect, because we can make it very clear in its connection with this effort, with the FEP, the species connections on what the values are.

I look at it as going further, because it is going to be our species, but then benefits that somebody else may be doing for an inland species that actually may have benefits to our managed species. That is where I think there are some really interesting opportunities that go beyond. There are some key ones that I wanted to definitely get integrated here in the discussion on gag as a very key species that uses virtually all these habitat inshore and offshore, as being able to be something that we can work into here and do the SOAP. Yes, it is not going to get lost.

MR. GIBSON: Well, my bird dog would love to see bob whites and gag groupers do very well.

MS. WENDT: Is there any kind of matrix that shows who the collaborators are, what all the programs are and who does what; what issues are being addressed and whether their focus is research, conservation, restoration? I just find it difficult to keep track of all these different collaborators, who are member organizations and exactly what they are doing.

MR. PUGLIESE: Yes; there are a lot, especially with how many different subcomponents we have from the – like you said, there are partnership committees, we have the steering committee and then all the ones tasked. Some of that I think as this gets taken to the next step is maybe going to get elaborated a lot further, because there is a lot of commitment from those individual organizations on groups that are doing things in contributions to here.

I don't think they have been as well kind of made connected to the process. I think that is going to be the effort of both the staff at the LCC plus the partners. There was kind of a charge backwards to the partners involved to do that and to make it clearer of how each one is contributing, connecting and where we can go.

I think as this goes further, I've got a bunch as it stands right now we can provide; but I think that is going to get highlighted. There was a lot of discussion about how this gets pushed out and the need to really elaborate how all these connection are and then where we can go. Some of it is available, but I think getting it more effective is where you can really kind of get there and immediately understand that; plus I think it is evolving.

Talking about these different organizations that are or potentially can be involved is going to expand those matrices and collaborators further. The more that gets out the better you can understand what is being done, where you may be able to fit in, what types of things might be able to come out of this or what can be contributed to it; so more to come on that.

MR. PRATT: I've got just one comment for Terry. I support your initiative to implement that in Florida, but I'll give you a word of caution. North Carolina implemented what was called a Clean Water Management Trust Fund that was supposed to be funded I believe at an annual rate of $10 million or somewhere around that; but due to budgetary constraints, that has been zeroed out so be careful how you word that thing.

MR. GIBSON: We're doing this as a constitutional amendment so it doesn't matter. If they've got no money, they are going to have to go borrow the money to do it. We did it because they wouldn't put money into Florida Forever, so we did an end around on them.

MR. GEER: Okay, any additional comments? All right, we are way ahead of schedule, which I like. Do you want to take a break so we can check out and then we'll come back from there? We only have a couple more things. Let's come back at 10:40.

MR. GEER: The last item on the agenda is Roger is going to talk about another partnership we have with SARP, the Southeast Aquatic Resource Partnership, with their data system that they have and some of the tools that they have been developing.

MR. PUGLIESE: One of our long-term collaborations has been with the Southeast Aquatic Resource Partnership. This organization partnership has been in place since the development of a National Fish Habitat Board. From a national level, there was a desire to look at habitat conservation and very specifically habitat conservation that directly addresses how that translates to increased fish availability, fish health, and fishing opportunity; so it does make that direct linkage.

They are one of the partnerships throughout the country that is being funded to specifically have that charge. I was going to touch a little bit on some of the more recent activities of SARP. One of the activities that really we need to tap in and connect a little closer to is the effort between SARP and the Nature Conservancy that has been working on a SEACAP program or a Southeast Aquatic Connectivity Assessment Program.

The aim of that was to look and identify dams throughout the entire landscape conservation cooperative footprints, so we get this again crosswalk between partnerships and organizations that look at adverse impacts on aquatic connectivity. That has an aspect that connects into that broader landscape scale activity and has implications in terms of some of the longer-term activities like identifying what flow regimes are for all our southeast region areas to maintain estuarine habitat. There are connections between these different activities.

Another one is very specifically with the in-stream flow activities. An amazing amount of work has been done between SARP initiating a lot of it and then now with the connection with the LLC to provide hydrologic foundation, ecological data bases, flow ecology, literature reviews, flow alteration assessments, river classification and aquatic conservation priorities.

That has been an ongoing and pretty significantly expanded with the deliberations with the LCC and again collaboration back with the SARP partnership. Between those organizations partnering up, there has been some more work. What I was going to highlight here quickly is some work that was done in a connection between SARP and the Gulf Landscape Conservation Cooperative.

We have pretty much the same type of information, and we really need to go to this next step. What it has to do with looking at the ability to understand kind of what I had talked about is flow regimes and look at what the implications are for fish specifically in the regions. What you are looking at is trying to look at vulnerability of species, individuals that are flow susceptible, and what some of the impacts may be.

This is one of the snapshots that were shown was something that shows our Savannah River ecology and it is looking at everything from birds to fish and the changes in flow regimes throughout the entire system. When you have peak spawning of species movement, migration of shad, flight patterns of bird movement patterns so beginning to look at these contexts is kind of where some of these programs in this effort between SARP and the Gulf Program was really taking it to the next level.

Most of what was done here really did – when they did the Gulf work – this is kind of picking up on the in-stream flow network and then how that translated to this, the Gulf In-Stream Flow Project was to look at science-based resources and to look at in-stream flow standards and management practices.

Most of it, while it included all the way to the estuaries, had a lot of the focus on kind of really pinning down freshwater upper land area potentially impacted species. During some workshops they held, it was highlighted about how to get to the next level of really looking at some of those estuarine-dependent species.

Again, this is kind of the bigger picture of what they are trying to do, which is the integration of in-stream flow research and develop these flow-ecology relationships. This is really important, because it connects back to a recommendation that came out of our original habitat plan that in the southeast we would like to see what flow regimes would be for everyone of our southeast rivers that would maintain the estuarine habitat to support managed species.

This is at least beginning to move closer to understanding what some of the implications are for species that would be impacted and what some of these different parameters are. The effort between SARP and the Gulf Coast LCC really brought to bear the efforts that provided regional flow-ecology hypotheses and provided hydrologic foundations, aquatic data, and the classification network.

They did a full alteration assessment down to the catchment level, very small components of flow within individual rivers and rivulet components, identification of conservation areas and really providing all the information available on flow literature for any of the other aspects. I just want to kind of touch on and highlight what some of the importance of our collaboration with SARP and the National Fish Habitat Partnership Process is to address conservation management of essential fish habitat species managed by the council; the opportunity to tap on this specific fish and habitat connection and focus conservation efforts in areas that are increasing the distribution of essential fish habitat, whether protection of in most of the cases it is restoration conservation in some of those areas.

The facts that the SARP Aquatic Fish Habitat Plan was developed – and we actually as an appendix to the existing Fishery Ecosystem Plan have embedded the aquatic plan with the conservation targets as part of the existing Fishery Ecosystem Plan. We have a very close connection with SARP and the movement and long-term habitat conservation.

The opportunity we have with the development of the Fishery Ecosystem Plan and the update on the FEP and the EFH five-year review is really is to engage all of the partners; with SARP and other ones such as the Atlantic States Conservation Cooperative, the SECOORA and Governors Alliance to connect together some of those activities that I've mentioned.

It was very clear SARPS activity was in-stream flow and the LCC's activity; there is the real opportunity then of taking another step and then have connectivity between the work they are doing on flow and nearshore and ocean current activity. That connection back to SECOORA is something that could come.

Again, the in-stream flow research and coordination; it really is taking it to the next step. What I would like to see is what was done in the Gulf of Mexico be also done in the South Atlantic. Actually a lot was done already in terms of the baseline information on flow, on the watershed; defining all the watersheds, defining the characteristics.

A lot of the foundation of doing the same type of thing is already in place. They just need to take it to the next stage. It is going to be important, because it connects. It really does then have the ability in our effort to look very closely at those estuarine-dependent species and prey and look at what some of those – in terms of what some of those may be flow sensitive, whether it is for spawning, for the emigration, settlement, and all those types of things.

It has the opportunity to open that door to focus more on the marine or estuarine component, which on the other effort really focused more on some of the inland areas. Again, the opportunities with the projects that are being done; SARP, in addition to in-stream flow research, they are funded to provide these conservation projects that again are targeted toward habitat that provides value to fish.

What a lot of those types of efforts can do is provide us very specific, detailed information on the use of managed species or prey of those different various habitats and enhance our understanding of the functions as EFH in our region; so those are significant. One of the programs that they were coordinating in cooperation with NOAA was a Community Restoration Grant Program, which is a shame that has actually been dropped or zeroed out.

There is an opportunity to try to figure out a way to reinstate or use that. It is a shame, because that was really – everything done in that program resulted in habitats that are essential fish habitat for council-managed species. It brought it all the way down to the community level where they had understanding, they had engagement of schools, they had engagement of everybody in the processes.

A lot of things the states are already doing; but it was something that added an additional pot of money to be able to do this; and it was identified as priorities to be able to move forward. From what I understand, it may have been just folded in under the larger NOAA Restoration System. This had a lot of engagement in partnerships that were somewhat lost in there.

Those were some of the highlights at least that I wanted to raise about our coordination and cooperation with SARP that has been a long-term partnership with them. Hopefully, we can continue to work. I think just as was mentioned before, you have to be creative in funding. What we've seen is this collaboration between different groups.

SARP in working with the LCC is going to provide some pretty phenomenal resources in terms of what we can't do at the council level, in terms of understanding the flow regimes and how they affect our managed species and prey, and the habitats that support those. That is going to be pretty significant as we move forward.

MR. GEER: Thanks, Roger. Indulge me again and let me see a list of hands of people who have been involved with SARP – a few less than with the South Atlantic. Okay, I was just kind of curious about that. Are there any comments or questions for Roger?

DR. LANEY: Just one comment – and some of the North Carolina delegation may want to comment on this – some three years ago, I guess it was, the North Carolina Legislature established the Ecological Flows Science Advisory Board. That body just put out its recommendations for addressing ecological flows in North Carolina.

I attended a session at the Institute for Emerging Issues at NC State a couple of weeks ago at which the results were presented by Chris Gudroe, who works for the North Carolina Wildlife Resources Commission, and then kind of a response was given by Tom Fransen, who is with our North Carolina Division of Water Resources, indicating how the Department of Environment and Natural Resources was going to implement the recommendations in that report.

The bottom line is they are implementing some but not all of the recommendations in that report. Some of them they indicated are going to require further study. The ones that are requiring further study are the ones that would possibly be of most interest to us in the council and on the panel; the ones having to deal with ecological requirements.

I would be happy, Mr. Chairman, to provide Roger with a copy of that report. He may wish to distribute it to the AP – you and he may want to distribute it to the AP just so that will kind of provide you an update on what is going with regard to ecological flows in North Carolina.

It speaks directly to Roger's point about our having put in that original ecosystem or habitat plan that the council generated a desire to see appropriate flows in all the South Atlantic rivers, because that does address the estuarine dependent species that are under council management.

MR. GEER: Are there any other comments or issues. Do you want to do any other business first? The only other things we have are other business and then concluding statements. I might as well take other business now if you have it.

DR. ELKINS: In North Carolina there is an impending sale of the Hoffman Forest. I just wanted to make sure that the panel and the council was aware of it. It is a wetlands forest the size of Raleigh. It is huge. It is part of the watershed of the White Oak River and a small part of the New River. Other people on the North Carolina Panel know more about this than I do, but it could be a disaster.

The prospectus is for the wetlands to be drained and a farmer appears to buy this $150 million sale from NC State. I just wanted to make sure that it was on the radar for the South Atlantic. Although we can't perhaps impact the sale, perhaps input from the council might later somehow steer the prevention of drainage of the area. If you recall, the North Carolina Legislature has weakened many of the coastal rules recently; and anything that we can do to provide cover for the agencies that are responsible for preventing such an ecological disaster would be helpful.

MR. GIBSON: I am sorry to hear that. I just wondered if the process – and there are a number of things that influence fish habitat in our respective states on major and minor scales and if needs the Everglades. What would it take, Roger or Pat, for the AP to send a letter to the appropriate governing authority over this forest or sending water south and treating it and getting the right amount of flows to Florida Bay that so impacts our fisheries?

MR. PUGLIESE: The way we usually engage comment or whatever with regard to any activity essentially identified as impacting habitat or fish under our management is provide a comment letter based on maybe violating our habitat policy or one of our policy statements. It would be something that we would request the council provide.

Usually it is done that way; we don't really have it coming directly from the panel. That's not saying it couldn't come that way, but as a council, if you want it as a council position, we have a process to be able to run something like that through directly. If it is in direct violation of a policy statement, we can kind of add that and really go directly to the Chair and have a comment letter provided.

I am not really as familiar with exactly what that was. What I would recommend – and this is something that we may want to get further happening, because what happened in the past is an issue came up from a subpanel region; a lot of times the chair of the subpanel would coordinate with individuals on that subpanel to draft a letter of consideration or a comment that would come back. Then we could internally move that up through for consideration by the Chair.

That would be a process unless Pace has something. That is generally the process we would do. Usually the way it works is we always would go try to go back and coordinate either a review with the panel or it came directly to us and sends it up the chain or coordinate – a lot of times those will get to that point and then I'll work with Pace also to see if they have some direct input already on that that we could work with them.

DR. WILBER: One of the other pathways that gets used is if the action of concern is a federal action and that federal action is required to undergo an EFH consultation – so there are a couple ifs there – but basically that turns into public notices from the Army Corps of Engineers, EISs, NEPA kind of reviews. We have a schedule that the National Marine Fisheries Service has to abide by in providing comments back to that federal agency.

Everybody that works in my group has the responsibility of identifying the most important projects that they're commenting on to Roger and afford Roger the opportunity to take pieces of our letter or to work with Roger to write his own letter to comment on behalf of the council. Usually Bob or Gregg would sign that letter. It works really, really well from our perspective; it works really, really fast.

Those letters are really really appreciated by the Federal Action Agency that receives those. The more difficult situations to deal with are the ones that are not federal action that trigger an EFH or a NEPA review. Like, for example, I don't know if the purchase of that land or the sale of that land is a federal action that triggers any kind of environmental review. That would be a more difficult kind of thing to deal with.

MR. GIBSON: The problem with the Everglades projects is that they are not even really prioritized yet. Some of them are authorized, some of them are authorized and appropriated, blah, blah, blah. But there is a general consensus amongst – I don't mean to speak for any agencies or anything; but, yes, we need to build the things we need to build to be able to clean the water and flow it all the way through the system.

Is it possible to send a letter through the AP or the council that just reinforces a sense of urgency of doing that without referring specifically to any one project or any way to do one project? There are always debates about what is the best bang for the buck and all that. You can get literally mired in Everglades muck really, really fast if you get down into the details of who is going to build it and how on a specific project level.

MR. PUGLIESE: Yes; we usually try to tie it directly – as Pace said, try to tie it to where you have a comment for one that usually mandates a response. That is a pretty key thing. If you send something up some time and if it has no connection to an action, it doesn't trigger that mandatory response under Magnuson for either NOAA Fisheries directly or for the council. If we send, they have to respond directly to the council on this.

It doesn't preclude highlighting this from the AP perspective. Sending it to us and then figuring out if there is an opportunity and a desire from the council to provide something; we've had discussions before. I think we have tried to provide some of those types of comments in advance of policy developments. But, again, understanding that some of those may not go real far, but then some may at least be in the record.

MR. STREET: Relative to the Hoffman Forest, it is owned and being offered for sale by a foundation; that is the actual owner. NC State University does not own it, but the foundation is associated with the School of Forestry or whatever its current name is at NC State University. It has historically been used for research by forestry and wildlife students.

It is also a working forest that generates several million dollars a year for the foundation; and thus and through them to the university. The sale to my knowledge is a private deal between the foundation and a potential buyer. I doubt if there are any permits involved. However, drainage of the area for development would probably be subject to Corps of Engineers permits and not state permits. I am guessing because most of it is in a county that is not under the Coastal Area Management Act.

It will get complicated, but it would depend I think if there is drainage planned for agriculture, and then agriculture has all kinds of exemptions. I don't know; a fair amount of it fronts on U.S. 17, a major highway that is in the process of being four-laned. I don't know, the property does include protected species; red-cockaded woodpeckers, probably eagles, most definitely carnivorous plants. I think they are state protected more than federally protected, I don't know. That is what I know about Hoffman Forest.

DR. LANEY: Mike, on the species list for Hoffman Forest, I inquired and I don't think we have documented red-cockaded woodpeckers there. I was surprised by that, too. It may be that it hasn't been intensively surveyed, I don't know; but that was what I was told when I asked. But probably the eagles and carnivorous plants are definitely there.

With regard to Terry Gibson's question and also, Roger, with regard to the conservation blueprint; would it be appropriate for – I know it has been our practice in the past when the council sends a letter that it is tied directly to a particular permit application usually or some other federal action.

In this case you have – and, Terry, correct me if I'm wrong, but you have landscape level in one case you have a landscape level restoration plan, which is the whole Everglades Restoration Plan. In the second case we have a conservation blueprint, Version 1 that is on the streets. Would it be appropriate for those two actions to come before the council's Ecosystem-Based Management and Habitat and Environmental Protection Committees, which usually meet jointly anyway?

Doug is the Chair of the Ecosystem-Based Management Committee. Would it be appropriate to just put those two items as an information presentation to the committees the next time they meet, and then see if the committees would be willing to recommend to the council some sort of a letter of general kind of endorsement?

I think that is kind of where Terry was coming from on this, so I will just ask the question and, Doug or Gregg or Roger, feel free to weigh in as to whether you think that would be an appropriate way to proceed or not. But it seems to me that is a way -- I think probably the AP certainly would support both of those efforts.

Even though you just briefed us on the conservation blueprint; we didn't really dig down into the weeds. Every state subpanel may want to go back and look at that blueprint and see what is there. But I guess the first step would be – we've had an AP member suggest that this is something that we might want to support in a general way. I just wondered if it would be appropriate to take it to the council committees and possibly to the council if the committees are so inclined.

MR. PUGLIESE: Well, I think the concern over the area is already on the record with the discussion we're having here. There I guess is the opportunity to maybe provide – maybe, Chris, what would be good is to provide a correspondence to the council in terms of the concern over this just to set the stage for it. I think we have some difference between the statuses of what is going on, and the everglades versus this, and maybe some of the limitations.

But that would at least I guess get it to the next step in terms of what the concerns are from the AP and maybe coordinate that with the North Carolina Subpanel as just a request. That would get it in the queue and we can discuss it, because we won't be able to tie it immediately to policy. We do have the meetings coming up. You chair the Habitat Committee, Wilson, so to some degree that is kind of your call if you want to have that raised at the Habitat, because this is more of an EFH deliberation.

DR. LANEY: The Hoffman Forest thing, certainly, I think it would be appropriate for Chris to send something to Pat as Chair for distribution to the whole AP. That is still somewhat up in the air. I guess there was a drop-dead date by which that sale had to be consummated. I'm not sure whether that has passed or not and what is going to happen.

Because of all the controversy that has arisen, what the present status of things are, I don't know; but the only thing that has been proposed there is the sale and that certainly doesn't provide us with any sort of federal nexus for comment. That would only happen if something is proposed for development on the property which required a federal permit; so there would be an opportunity to comment at some future date.

With regard to the agenda for the next council meeting, Doug, are you going to speak to that and whether we could maybe get these other two things, which are things that have been proposed from a conservation perspective that I think would benefit council resources. It might be appropriate just to have a very brief information item for both the Everglades Restoration Plan and how that affects Florida Bay and council-managed resources. And also the conservation blueprint, Roger, you could do the same brief update that you did for the AP. I know Doug has got comments I guess, Mr. Chairman, on that.

MR. HAYMANS: I agree with you, Wilson, and we have an hour on the agenda in June, and the only thing that we have is the FEP update. Brief comments taken; I think we can have a discussion on it.

MR. STREET: Both the Everglades and White Oak River are nursery areas for shrimp that come under the council. The White Oak River also supports or used to support – I don't know if it still does – remnant anadromous fish populations at the falls of the White Oak. Yes, there is a waterfall about 18 inches, where it flows over a limestone outcrop. I have seen it, and I have seen the river herring there.

My understanding is when the water gets high enough after a heavy rain; they actually go up over the waterfall. Where the river passes under U.S. 17, it is about 20 feet wide, but absolutely that is the origin of the White Oak River is definitely in the forest; there is absolutely no doubt about it. But there are other species, I would assume fishes of some estuarine-dependent fish and things like that there.

Other than shrimp, I can't think of specific ones that come under a council FMP since red drum is no longer a council FMP. But I know from my earliest, earliest research in 1959 that the edges of the Everglades is pink shrimp nursery for the Tortugas ground. That was established by University of Miami people back then.

MR. GIBSON: I really appreciate that invitation, Wilson; and if it is not me, it may be an expert hydrologist. I can think of a few people that can make the connections between the species the council is supposed to be managing and the ecosystem. I just want to be clear the scale of what I'm talking about these projects.

I am very concerned that the situation where I live is becoming so horrific in the Indian River Lagoon, which is connected directly to the Everglades and the restoration of which is directly tied to the successful restoration of the Everglades. I am very concerned that the council is going to be in a position because of the scale of the habitat loss and the water quality decline; that you are not going to be able to meet your rebuilding timelines for some of these fish.

You are charged with managing fish and you have got to have fish factories, and that factory is a train wreck. It is really, really alarming where we live. I would like to thank you again, Wilson, for an invitation to explain just the scale of what needs to be done and underscore the sense of urgency both with the state and federal partners and restoring the Everglades and what it means for the council in managing some fish species.

MR. GEER: All right, any other business? No other business? All right, we have to have some concluding remarks. Basically all I want to talk about is just a summary of the meeting real quick. We've finalized the drafts for SAV and aquaculture, invasive species and beach dredging. They are pretty much done; there is just some wordsmithing to be done on those.

We're developing the one on energy and artificial reefs. If anybody wants to help with the artificial reef ones, let me or Roger know. We need from the state leads, if you haven't already given it to Roger and I, the list of participants and recommended participants for the Fisheries Ecosystem Plan development. We worked on that yesterday, if you haven't gotten it to us already. That is just a summary of what we've done and what we're going to need from you all. Do you have anything else?

MR. PUGLIESE: Just stay tuned for the next stages, because what we'll be looking at is taking the information on the participation, expanding some of the other partners and looking at some of the other types of sections and the opportunity to set up webinars, some of the workshops I mentioned, et cetera.

The development process that is going to happen between now and I guess the heads up that we will be having a fall Habitat AP meeting at FWRI. We'll begin scheduling that so we will probably have a couple of the workshops actually in conjunction with that meeting.

MR. GEER: That is probably going to be in St. Pete, probably the first or second week; probably in November sometime?

MR. PUGLIESE: In November.

MR. GEER: I just want to thank everybody for your participation, and going through those policy statements is dry and long and hard. Anybody who has been on this panel for a while, we've gone through these and it is a necessary evil that we have to go through; but I appreciate your patience on that and your contributions to it as well. We are getting those done and they will be a good product for us. That is all I have to say. If there is nothing else I need a motion to adjourn. Consider it done. We are done, folks; thanks for coming, safe travels.

(Whereupon, the meeting was adjourned at 11:30 o'clock a.m., April 3, 2014.)

Certified By: _____ Date: _____

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South Atlantic Fishery Management Council

Habitat Advisory Panel Meeting

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Habitat Advisory Panel Meeting

Wednesday, April 2, 2014

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Habitat Advisory Panel Meeting

Thursday, April 3, 2014

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