

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

JOINT HABITAT AND ENVIRONMENTAL PROTECTION COMMITTEE AND ECOSYSTEM BASED MANAGEMENT COMMITTEE

**King and Prince Hotel
St. Simons Island, Georgia**

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Chris Conklin
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Pat Geer
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Dr. Jack McGovern
Roy Williams
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Carl Hershner
Hilary Morris
Brian Hooker

Additional Observers Attached

The Joint Habitat and Environmental Protection Committee and Ecosystem-Based Management Committee of the South Atlantic Fishery Management Council convened in the Sidney Lanier Ballroom of the King and Prince Hotel, St. Simons Island, Georgia, March 2, 2015, and was called to order at 2:00 o'clock p.m. by Chairman Wilson Laney and Chairman Doug Haymans.

MR. HAYMANS: We will call the Joint Habitat and Environmental Protection Committee and Ecosystem-Based Management Committee meeting to order. Wilson is going to run the rest of it.

DR. LANEY: I will note that there have been a couple of changes on your agenda under Item 5D. It will be Brian Hooker who will be giving our presentation on the Renewable Energy Program for BOEM. I think that is the only change I had. Does anyone else have any additions or changes to the agenda? Seeing none; we will proceed with the agenda as published then.

Item 2 is the approval of the December 1, 2014, Habitat and Environmental Protection Committee minutes – actually that was the joint meeting I think. It was a joint meeting, so it is both committees. Does anybody have any changes to the minutes? Seeing none; is there any opposition to the approval of the minutes? Seeing none; the minutes are approved as published. Item 3 is Status of Coral Amendment 8. I believe Dr. McGovern is going to do that for us.

DR. McGOVERN: Coral Amendment 8 includes actions to expand the northern and western boundaries of the Oculina HAPC. It expands the Stetson-Miami Terrace and Cape Lookout HAPCs and also would establish a transit provision through the Oculina HAPC for vessels with rock shrimp aboard.

The NOA for the amendment published last May and the proposed rule published in June, and the comment periods for both ended in July. There was a delay in publication of the final rule because of an issue regarding the capability of VMS units to ping every five minutes as would be required by the final rule.

Our initial information was that about 22 units would not be able to ping at that rate of every five minutes and that the vessels would need to purchase a newer unit. A classification section of the proposed rule addressed these costs. We have had a lot of conversation with OLE and they have had conversations with the VMS vendors.

It has since been determined that the existing units will be capable of meeting the requirements described by the transit provision of every five minutes. The only costs that will be incurred by fishermen are related to the increase in ping rates; and the maximum cost is estimated to be 0.06 cents per ping. The classification section of the final rule has been changed. The final rule package should be going to headquarters shortly after this council meeting.

DR. LANEY: Are there any questions for Jack about Coral Amendment 8 or the ping rate and the VMS units? I see none, so thank you, Jack. The next item is Item 4, updated policy statements. We have Pat Geer here with us who is the chairman of our Habitat and Environmental Protection AP. He and Roger are going to address that item.

MR. GEER: It has been a while since we have had a meeting. We had our last meeting in April, and we had to cancel our November meeting. I am going to try to refresh my memory at

the same time I am refreshing yours. Priscilla Wendt from South Carolina DNR was the lead on this. She was instrumental in getting the revisions done and doing most of the writing.

I am just going to go over very quickly the different sections of EFH at risk. It lists some of the factors that dredging may impact. It is all in there. It is pretty self-explanatory. Some of the species that may be impacted, things like summer flounder, bluefish, black sea bass, penaeid shrimp, some of the coastal migratory species, and various coral species.

There are nine items that are listed as numerous habitats that may be impacted that are EFH and Habitats of Particular Concern. Priscilla did a pretty good job of putting references in there for each one of those as well. The threats to marine and estuarine resources, which is on Page 4 through 6, lists the different potential threats that may occur.

She did a very good job of listing a lot of the references for each one of those. You can go look through those references and see some of the items of concern, particularly benthic organisms and their communities, mortality to fish and other larvae such as penaeid larvae, increased turbidity, changes in topography and sediment size, temporary changes in water quality, and the potential of toxin re-suspension from dredging as well.

Getting right into the recommendations, I think some of the revisions that had to be done on this is because the council wanted more details on required components, including a cumulative impact analysis; what needs to be done to look at this better. I think Priscilla did a pretty good job outlining that on Pages 6 through 7. More baseline surveys should be conducted directed at benthic communities, SAV, coral reefs. A lot of times these types of analyses overlook other biotas such as finfish and is doing some work on that as well.

Trying to do these baseline surveys with the before and after type of studies quite often are not done. Some recommendations as far as doing those kinds of studies on different parameters, in addition to the benthic communities, physical parameters such as topography, bathymetry and water quality.

The last two recommendations include the fill material. Any fill material that might be used should be of similar sediment type and size. As far as timing of dredging, limiting dredging to certain times of the year and only taking from bathymetry peaks and then the shallow steps. That about sums it up; it is pretty straightforward. The AP has seen this on at least three different occasions and have revised it several times. I leave that up to the committee at this time.

DR. LANEY: Are there any questions or comments for Pat?

MR. HAYMANS: Pat, thank you to the AP for a good document. Thank you to the lead writer for putting it together, especially the bibliography there, it is very good. I will make this comment to Roger. When I read the agenda I was; man, we've got beach renourishment. I opened the document and we're still dredge and fill; so which is it going to be?

MR. PUGLIESE: It's both. This is a council document, so it is their preference on how you want to do it. The one thing that had been stated before is that some of this was intentional from the AP, but I think the latitude would be able to put beach renourishment as the key and in

parentheses identify the specifics of this. It seems like a reasonable kind of connection between the two.

MR. HAYMANS: I would ask the council committee members or other whether you guys have a preference for beach dredge and fill or beach renourishment. You know how I feel, so does anybody else have an opinion?

MR. HARTIG: Just not so much an opinion, but what about when they do the inlet dredging and they put that sand on the beach as well for renourishment; is that covered under the same kind of topics? I'm looking here; large-scale coastal engineering seems to me to be more related to something like that than it is to beach renourishment. Yes, they used it for renourishment, but it came from a different kind of a project. It wasn't designed to do that.

MR. PUGLIESE: I think to some degree that is some of the intent, because getting into and stating as large-scale coastal engineering encompassed any of these other types of activities that would involve a dredge activity that ultimately may be dispersed wherever, either at a bar or on the beach or wherever. I think it was trying to be a broader scope to some degree on that. Again, that is the preference of the council and how you would like to state it.

DR. LANEY: In terms of just speaking as a committee member, Doug, I like calling a spade a spade, and to me it has always been dredge and fill. I think nourishment is one of these politically correct terms that folks come up with sometimes to attempt to minimize the impact of projects on different infauna.

The one I like to cite often is borrow pit. I mean, how many times have they ever put it back after they borrowed it? It is not borrowed; it is mining. We're mining the sand and we are going to put it on the beach for some other purpose. That is why I like "dredge and fill" personally, but I can go either way.

MR. HAYMANS: I won't prolong this, but I can tell you that I don't know of any municipalities, when they are in search of documents to support a beach-renourishment project, go in search of a dredge-and-fill document. The word renourishment I don't believe occurs anywhere in this document. I am just saying we want this to be used not only from the council's standpoint but as a resource document for others across all beach communities.

DR. DUVAL: I tend to be more on the Wilson side of things. They are beach engineering projects as well. It is not just large-scale coastal engineering; it is beach engineering. That is really what is being done. You can call it beach sand placement if you are looking for something that is softer and in between dredge and fill and renourishment.

Renourishment is out there in the common vernacular, but I don't think it is necessarily our job to use a term that isn't necessarily reflective of the activity. At least it is our job to acknowledge what the potential impacts are to resources that the council manages. For that reason, I think renourishment just sounds like it is a positive beneficial thing for the resources that we're managing; and that is not always necessarily the case. I'm not saying that there are not beneficial impacts to those activities with regard to protection of infrastructure and things like that. It just depends on your perspective.

MR. HAYMANS: The document makes plainly clear the ill effects of the process. I don't want to belabor the point. I was going to move on, Chester, if you have something specific.

MR. BREWER: Five seconds; how about using an AKA?

MR. HAYMANS: The rest of the world does it as beach renourishment and the council will know it as beach dredge and fill. Do we need to accept this? Wilson, do we need to have a motion and a second?

DR. LANEY: Chester just made the suggestion and we could put also known as beach renourishment in there. That includes it in there; and then if you are doing a search on it, it would probably pop up, yes, you would pick it up. What is the council's pleasure on that? I guess we do need a motion to pass this along to full council with a recommendation for approval.

MR. HAYMANS: Let's remind everybody of the council members. Habitat is Wilson, Anna, Chris, Lieutenant Morgan Fowler, myself, Charlie, and Bob Beal. Ecosystem is Ana, Chris, Michelle, Wilson, Jessica, Charlie, Bob Beal and myself. Is there a motion?

MS. McCAWLEY: Motion to approve that policy statement.

MR. HAYMANS: Second, Charlie. Is there any additional discussion?

DR. DUVAL: Is that with Chester's suggested AKA edit added to the title then?

MR. HAYMANS: Yes, we can make that I guess direction to staff. Roger, can you make sure that gets included somehow in the key words or something to that nature to the document with that caveat. Any additional discussion? That statement refers to some sort of acknowledgement, an AKA as Chester said, to reference beach renourishment and dredge and fill in the document. **The motion is to approve the Beach Dredge-and-Fill Document for council. Is there any opposition? Seeing none; that motion is approved.**

DR. LANEY: We'll move on to Item 5, which is the South Atlantic Ecosystem Session. I think Roger and I and Doug are all very excited about this session. We've got a really great lineup of speakers here to talk to us about ecosystem-based management and various aspects of that. I will just introduce the first one and we'll move right into the session. Dr. Carl Hershner is Director of the Center for Coastal Resources Management at the Virginia Institute of Marine Science.

Carl and I first met each other's acquaintance through the Albemarle/Pamlico National Estuary Program when the APNEP, for short, was moving from the traditional way of management into an ecosystem-based management approach. We had Carl come and talk to us about how to do that. I was aware of his interest in the topic and also his expertise; which is certainly at the national if not the international level. We asked him to come and talk to us about what is needed for ecosystem-based management.

(Presentation by Dr. Carl Hershner, Virginia Institute of Marine Science)

DR. LANEY: Okay, thank you, Carl. Are there questions for Carl?

MR. HARTIG: Yes; not so much a question just a comment. I was really pretty into this a while back when we were all talking about it, and then MSA came along and forced us back into single- species management; and so that has kind of put the brakes on it a little bit. I am so heartened to hear that we have a way forward other than the modeling, because the modeling was the big hang-up all the time; trying to develop something where we can move forward.

It was always my impression that was what was holding us up. Now I see a whole new way forward that I wasn't aware of before; and that is very cool. I am a real big proponent of adaptive management; and that is a pretty interesting way to be able to move forward. I appreciate your presentation.

DR. LANEY: I will say, Ben, to that point; as soon as I figure out how to get to the AFS Website and can download it electronically; there is an article in the current issue or actually the January issue of Fisheries about a model that was done for – they refer to it as the Southern Gulf of Mexico.

It is actually more like the Campeche Banks, I think, for the pink shrimp fishery there where they used an Ecopath with Ecosim Model for management purposes. I am going to try and send that around to everybody so everybody can take a look at it. I would especially ask Mike and John Carmichael and Chip to take a look at it and see if it might have some possible application at least from the conceptual perspective.

MR. HAYMANS: I was also heartened to hear that ecosystem management can be a singular species; just everything that is included in it. Actually if you look at our management plans; with all of the information that we include in them, they are almost ABM species by themselves. How many ABM management by themselves are they?

The fear that a lot of folks have, and myself included, is we have so little data to drive one species how do we possibly drive multiple species at one time? I guess I was hoping maybe you would address that in some way. We have a lot of species that are data limited, some which are no data whatsoever. How do we begin to manage those as a group?

DR. HERSHNER: I won't profess to have the perfect answer, but I can tell you what we're trying to do, which is building from what we have in single-species management. When we get to the multiple species, remember that the little diagram I had that said even if it is just a concept of the response you expect, at least identify it so that you can then assess your understanding, your expectation.

What it requires is – and this is painful – a really long-term view where you just admit that we don't have the exact understandings we need in order to be perfect, but here is what we think is happening. As long as we document what we expect the response to be and then evaluate whether or not we observe that; you are able to slowly but surely refine your understanding of how those things fit together.

Our interest is more sort of on the human end of thing, which is where we have been focused. We've looked at single-species management interventions and tried to assess the outcomes in the social/economic and then look at the feedbacks from coastal dwellers. We have, in working with

Ecopath/ Ecosim, made some initial steps at looking at multispecies responses to environmental management.

I wouldn't say that any of them are ready for quantitative simulation; but I do feel like we have moved several steps further in codifying the understanding enough so that it can drive essential research, which is something that we always seemed to throw our hands up with before. We get all the people together around the table for an FEP and we come up with this laundry list of things that needed to be done, but no real driving reason for tackling any one of them in the sense that once we've tried this, here is how it is going to feed back to our collective understanding. That is what this is trying to build, which is a very long way of saying; I don't have the answer for you, but we're trying.

DR. LANEY: I would note – Doug, I know you're aware of this – that the ASMFC has kind of taken a baby step toward it with their multispecies VPA model, which looks at three predators or actually four, because I think we added spiny dogfish to it and Atlantic menhaden as a major prey item.

One of the items of discussion we had at the last board meeting was the fact, when we were talking about ecological reference points for Atlantic menhaden, was I made the point the commission manages more than one species. If you are going to try and establish some sort of a target for menhaden; you have got to think about what sort of target you want to establish for striped bass and bluefish and weakfish too, because they all eat Atlantic menhaden.

Those things have to be considered from a holistic perspective. That pushes the argument that we should be trying to look as much as we can from an ecosystem perspective even though we're still wed to single species management to a large degree by virtue of the statutory obligations that we have.

MR. HARTIG: At least you know who eats who in that case. In our area we don't even know who eats who. Basically we need to start from ground zero with the feeding studies, maybe a citizen science project long term, to be able to try and start to identify those interactions.

DR. LANEY: We don't completely know who eats who. Maybe Jason will talk about this; but I know the Northeast Fisheries Science Center has a huge dietary data base. They have some pretty good ideas I think at least in the northeast about who eats who. I think from the SEAMAP data base, we may have a pretty good idea in the southeast. Maybe Roger or Pat or somebody could address that or maybe Michelle.

DR. DUVAL: Well, no, but I was just going to say we have a whole suite of advisory panel members who can help us just qualitatively with who eats who, particularly for species like our deep-water species come in a gutted condition for the most part, as do several other ones. What do you find when you slit the fish open, very qualitative.

DR. LANEY: Ben, we did start on the who eats who question back when we were working on putting together the data for the Ecopath Model in the first place, because I know I worked with John Browder in Bonnie's shop on the birds and what the birds are eating. We know quite a bit. It turned out there had been – I was surprised at how much information there was on birds and which marine organisms in addition to fish the birds do eat. There is a lot of information out

there. A lot of what would be involved I think is just compiling all the information and putting it altogether.

DR. HERSHNER: I will say in the Chesapeake Bay Program, where we're not just looking at fish, it is the whole damn watershed. What we've done is exactly that; each group, one is looking at habitat, one is looking at fish, one is looking at stewardship, local governments. Each one of them have articulated a goal, identified the factors they think are critical.

What we're involved with in a parallel process is gathering together all of those sorts of concepts and say; all right, if this is what people think about the various parts of our system; what does this elephant actually look like? There is a group that is trying to piece it altogether into an ecosystem level understanding; but it is not critical that understanding precede any management efforts and any learning on the individual pieces.

DR. ERRIGO: I was at the National SSC Meeting, and they talked a lot about ecosystem-based management at this meeting. They actually discussed a lot about how it seems that if you just look at each individual species and you don't look at what is going on around it, especially like in the South Atlantic where habitat might be a limiting factor; and you do an assessment on a single species and it gives you what the MSY level of abundance is at that particular point in time; that is only if all other species remain at their perspective abundances and don't change.

But if you are rebuilding species, which rely on the same habitat or same food sources and things like that; then conceivably the productivity of the stock that you just assessed is going to change based on how the abundance and productivity of the stock around it change. It is nice to see that we're moving towards a place where we can look at stocks in a holistic view, especially in the South Atlantic Reef Fish Complex where you have a whole bunch of fish and they all live in the same place.

The one question I had was I have been reading about and hearing a lot about these ecosystem models. The Atlantis Model I found rather interesting although extraordinarily data hungry. I know they have been using it in some regions, but I don't know like how many species they are looking at or how many interactions are going in. It seems like there are quite a lot in the South Atlantic.

I was just wondering at what point – because the more interactions and species you feed into the model, it seems like eventually it becomes a chaotic system and then you can't predict what will happen no matter what you tweak. No matter how you manage, it seems like it would be random how the model will predict what happened in the end. I was just wondering have they run into these situations. Is there like a point where it is like there is too much data or there are too many interactions and the model can't figure it out, and it is becoming like a random output?

DR. HERSHNER: The technical term for it is equifinality where you have so many parameters in the model that there are multiple combinations of them that can produce exactly the same outcome, so you don't really know anything. Unfortunately, while there is a technical term for it, there is no technical solution for it other than awareness.

MR. PUGLIESE: I think what I see Carl is really kind of frame something – an opportunity to move forward in a conceptual way of how we look at individual species or multiple species and

really start building what direction you may want to go, what we may understand; some of the comments about engaging our fishing partners to begin to pull together pieces of information we don't know.

At the same time it doesn't preclude the directed effort on actually doing some modeling efforts. As you know, we've been building in the background capability to try to advance this. I think we have a real opportunity and we will see the directed effort to build an ecosystem modeling suite for our region and probably to a great degree focused on Ecopath with Ecosim and Ecospace as a core group of our partners between biology and oceanography have actually had a sit down and kind of hashed out a possible move forward with partners in our region.

I think that is also another aspect that we've kind of gone outside the box in engaging groups such as the Landscape Conservation Cooperatives and other partners to be able to facilitate the next step forward. I think what we have is this real opportunity to use some of the coordination we're doing already, say, through the ecosystem plan; building of the subsections or working with our partners there; at the same time a much directed modeling effort to go beyond, because we've got history on the Ecopath and Ecosim.

We built the preliminary model, we built some baselines. We just never had the chance to take it further. A lot of individual assessments have been done. A lot of information systems, the entire fishery-independent system is totally interactive and connected now. Some of our partners like APNEP had advanced further in the way they've dealt with on the ground.

At one time we actually talked about those nested ecosystem-based management working with a group like that Albemarle/Pamlico Sound Group; working that up to the state level and that connecting into the council's ecosystem efforts and that being kind of a nested layering of ecosystem-based management.

I think we really have an opportunity to conceptually move these forward. At the same time drive and then direct what else needs to be done to get the details. I think some of the comments made about Atlantis and some of those types of models, because of the complexity we have; unlike the kind of more simplistic or lower number of species in the Pacific Northwest they have, may just kind of implode on themselves to some degree.

But they have some functions. There still are functions that those can provide and even some other ones such as ecosystem simulation models that Dr. Jerry Ault has worked on. We have a very directed effort with our partners to try to see the opportunity to build some of these tools for the council. But I think the key is this other concept of thinking about where things could go, because that can feed how those are structured.

The discussion, I will say, is that one of the differences in the more recent discussions on modeling are very practical in terms of what we can actually use these kinds of capabilities to guide the SSC providing the council and the council's actions. On the front end, kind of saying let's get a reality check and not build something that becomes a monster and essentially is not going to give you any type of realistic outcome. I think this opportunity to blend these two really has an opportunity for the southeast to step forward.

DR. LANEY: Again, I think if I can pull this recent paper down that I mentioned earlier and send that around; I think that would help to enlighten folks. Are there any other questions for Dr. Hershner?

DR. HERSHNER: Just remember as you go forward; all models are wrong, but some are useful.

DR. LANEY: That statement has been made around this table quite a few times. Thank you, Carl. Next on our agenda, I am pleased to have Dr. Jason Link with us. Jason is the senior scientist for Ecosystem Management for NOAA Fisheries. He and I have recently been working on the World Ocean Assessment together.

I really appreciate the time and effort he put into that. I thank him especially for making time in his busy schedule to come in and talk to us. Carl will be around if you want to track him down and ask more questions.

MR. HARTIG: Wilson, do we have all these presentations somewhere?

DR. LANEY: Yes, they have been distributed to you. I think Mike has sent them around. They came in during lunch.

MR. PUGLIESE: We had a couple of them. You got either a preliminary version or the base version you see today, but then a couple new either updated or base versions were just distributed to you.

(Presentation by Dr. Jason Link, Senior Scientist for Ecosystem Management. NOAA Fisheries)

DR. LANEY: Okay, thank you very much, Jason. We'll just point out to everybody, we do have the draft climate science strategy as Attachment 2 and then the Federal Register Notice of Availability is Attachment 3. That information is in your briefing book and readily available for your review and provision of feedback. Okay, questions for Jason?

MR. HARTIG: Jason, thank you very much. I will segue into your joke that you talked about. The species in question, king mackerel, we just completed an assessment on them, Miami just did it. In fact, they tried to incorporate some of the changes that we're seeing in the Gulf Stream; and actually in the area where they come to spawn, there is also increased upwelling, significant increase in upwellings.

My suggestion is that you take advantage in building capacity and use the commercial platforms that are on the water on a daily basis to collect the information we need to document these changes. I've gone back and talked with the premiere current people and ones who have worked on upwellings trying to find out if we had any data on bottom temperature, and we don't have it.

These critical needs that we don't have, we need to start collecting as soon as possible to be able to document some of these changes. Some of the areas where you have these dynamic current situations, like where we are, is right where the Bahamas are, right at the Straits where it gets compressed the most. That area has a lot of dynamics that some of the other parts of the ocean aren't experiencing.

Some of these things need to have some light shed on them and have to have some of these resources put into fishermen collecting the data. We are ready to do it. We want to provide the answers that we are seeking on why this is happening. Miami did the sea surface temperature and thing.

They delved into it, but they couldn't get the resolution they needed because these upwellings don't always come to the surface. They may happen on a weekly or biweekly occurrence, but it doesn't always come to the surface. We see them as changes in densities on our machines. We can see the water, and we can see the fish moving in accordance with that; these types of things and the knowledge that we've seen in changes over 40 years on the water.

Like you said, the Gulf Stream is changing. It is slowing down considerably. We've seen actual recruitment patterns in king mackerel in my area, which is on the lower portion of the shelf, not as broad a shelf, not as much productivity; we're seeing recruitment of mackerels, but is that rich enough to produce the same recruitment we had when it moves farther north where they have a broad shelf and a lot more richer environment? All these different things interplaying together. We can help you and so we will put that in a suggestion to your agency.

DR. LINK: Thank you, Ben, for saying that. If you were to put that in there, it would be fantastic. I could ramble on, and I think we might talk about this more this evening; but absolutely, the cooperative research and all of the observations you are talking about; there is a lot that goes with that. But absolutely; that would be helpful.

DR. HARTIG: I think it goes beyond cooperative research. I am willing to do it for nothing. Just get me what I need to do it; it doesn't cost any money. We are there and we've spent the money to go there. We'll talk about that tonight as well.

DR. LANEY: Citizen Science yet again; more citizen science. Other folks, other questions?

DR. DUVAL: Thanks, Jason, for making time to come down here and talk to us both today and this evening. What is your vision for how the different regional plans will come together and move forward? What is the formal interaction in terms of this council weighing in on that; what are you guys looking for?

DR. LINK: According to the regional plans with respect to the climate strategy or the Fishery –

DR. DUVAL: I'm sorry, with respect to climate strategy.

DR. LINK: What we want to do with the National Climate Science Strategy, or this document you have available is, hey, here are some of the main steps that we think are important. Is everybody more or less nationally on the same page? Is this useful for everyone? Are we missing something? Okay check, yes sure. Then when we go from the national to the regional implementation, we will have a couple of people on our headquarters' staff coordinating that, but that is really driven by the regions of what their needs are. I am not sure I answered your question.

DR. DUVAL: It sounds like some conversation between like the Science Center and sort of have the kinds of needs that they see in terms of addressing the strategy for this region as well as maybe input from this group regarding what we see as needs as well would help to inform this.

DR. LINK: Hopefully, Roy's shop and Bonnie's shop will have people involved with it, obviously. But, hopefully, we can get folks from the council at whatever level is appropriate involved with that planning team as well.

DR. LANEY: I'll ask a question, Jason. Are you all integrating at all with the Department of Interior Climate Science Centers, too? I know they are trying to downscale a lot of stuff regionally as well and maybe looking at it more from a terrestrial perspective; I don't know.

DR. LINK: We are interacting with them. We are not doing too much in the terrestrial system, obviously, but we interact with them at a fairly high level and a pretty regular basis. Some of the mitigation and adaptation strategies, when you get to the particulars, are different for the different species; but when you look at them at kind of the general categories and classes, we're learning from each other that way.

DR. LANEY: Are there other questions or comments for Dr. Link? Okay I see none. Thank you, Jason. Our next speaker is Hilary Morris. Hilary is from the South Atlantic Landscape Conservation Cooperative and is going to talk to us about their Conservation Blueprint 2. Hillary is also on the staff that works with the user team, which some of us are on, and does a lot of work with communicating to stakeholders.

I will just note we've kind of covered various scales here. Carl was coming at it certainly from a national scale but also giving us a couple of examples from a maybe large watershed perspective in terms of the Chesapeake Bay and the Albemarle/Pamlico. Jason is looking at it from the national perspective. Hilary is kind of looking at it now from a South Atlantic Regional perspective, looking at the whole South Atlantic LCC geography, which Roger has shared with us many times in the past.

But just to refresh our memories, it runs from kind of the Roanoke/Chowan System in the northeastern part of the council's jurisdiction down along the Atlantic Coast and actually runs into the Gulf of Mexico through the Apalachicola/Chattahoochee/Flint System; so a little bit larger scale than the Chesapeake or the Roanoke.

(Presentation by Ms. Hilary Morris, Blueprint User and Communications, SALLC)

DR. LANEY: Thank you, Hilary. I'll point out once again we have as Attachment 4 the final Conservation Blueprint Version 1 Fact Sheet and also Attachment 5 is the online links and the Blueprint Version 2 Workshop Schedule, but note that the Raleigh Workshops have changed because of inclement weather up there that precluded those workshops being held. Do we have questions for Hilary?

DR. DUVAL: Maybe not so much a question as a comment. I think it is pretty amazing what the LCC has done in a really short period of time. That was a very information-dense presentation, and I think the pace at which you guys are moving is really commendable given the pace at which this group moves sometimes.

Of course, there are different constraints on us as opposed to the LCC, but I really appreciate all the work you guys have put into this as well as all the cat herding that has to go on to get people like me to participate in the different webinars for the different user groups. There are a lot of incredibly intelligent folks who are participating in that and have far greater expertise than I do in terms of weighing in on these indicators and how we should go about determining what to include for the next version of the blueprint.

I just appreciate you coming here and giving such a thorough explanation of it. I think everyone will benefit from this as we continue to move forward with the revision to the fishery ecosystem plan, as well as this is a great afternoon of presentations for us, thinking about things at the national level, the regional level, the local level and how we can take all that and, like Roger said, move it forward. I thank you for being here.

MR. PHILLIPS: It is nice to see somebody tying all the pieces together like what goes on upstream, coming downstream and the connectivity. We know it, but being able to put a handle on it. I do shellfish so I am steady preaching if you don't take care of the water in Atlanta, you are not going to have shellfish from the coast. It is nice to see this that people can use as a tool. That is just a piece of the puzzle that you are doing, so, yes, I appreciate it.

DR. LANEY: That is really true, Charlie. The LCC is one of the places where the rubber really starts to meet the road, I think. Just a couple of comments and then I do have a question for Hilary. One comment is that the work Hilary alluded to was done by Adam Terando of our Southeast Climate Science Center staff, and that has already made the front page of the Washington Post, so it resonated a lot.

I think just like some of the work that was done in South Florida that showed what the South Florida area was going to look like in 2050 or 2060 or whatever timeframe it was; this is a similar piece of work for the whole Southeast Region and it really caught people's attention. The second thing is sometimes when you create a conservation blueprint and then you reference that when you are writing grant proposals, it may make a difference.

I say that because Susan Shipman had asked me to review the fisheries' sections of a couple of national wetland grants that the Georgia folks had put together. I did that and one of the things I asked right off the bat was, well, where do these two particular acquisition sites that they are proposing to get grant funding for fall in the conservation blueprint priorities?

They both happened to fall in very high priority areas, so we revised the text to put that in there and they both got funding; both of those grants came through. I won't take credit for that because obviously Susan and the Georgia folks did a great deal of work on that. There was a lot of other information in there besides just the fisheries' part.

But, still, it does help I think if a group like the LCC has done all this groundwork, as Michelle pointed out, in a very short period of time and laid the foundation for it; then all of us sitting around the table who are working on trying to acquire properties on the ground – and in my case you all have heard me preach about the Wake County Open Space Advisory Program, which had \$90 million to spend.

It certainly helps because the South Atlantic LCC Conservation Blueprint covers that whole geography. The one question I had, Hilary, was relative to using zonation – and I will address it to you and Roger, because he and I haven't had a chance to talk about it – but do you think we have enough data and information in the marine part of the system to really effectively apply zonation or are we going to have to do a whole lot more homework before we can apply it in the marine part of the system?

MS. MORRIS: Well, we are doing the zonation runs for the marine. We have three indicators in the marine environment. There is an index of primary productivity, an index of potential hard-bottom condition, and marine mammals. Oh, he's got the cheat sheet, but well done still though. Conservation in action, guys, this is great.

Those are our three indicators and basically zonation needs to have more than two to run an effective prioritization as far as the model specifications go. We are very aware that the marine is the weakest ecosystem as far as the data that we have to accurately depict it. Fortunately, Rua actually just came down – and maybe Roger was going to mention this – to an Ecosystem Modeling Workshop in St. Pete.

He mentioned that they got all the heavy hitters together to start thinking about those Ecopath models and developing some of those sophisticated models for the southeast and made a great connection with some folks who are actually right in our backyard in Raleigh, who have got better primary productivity models. Rua came back from that meeting super-jazzed about making improvements to our marine data. Is there anything you want to add to that, Roger?

MR. PUGLIESE: Yes, other than I think it is a process to advance. I think that there is really – from the Steering Committee down, there is a real intent that this is not just going to be something that is created to be shelved. It is going to be something that absolutely has an opportunity to influence each and every one that is sitting at the tables opportunity to – and what they work on and how they can move that forward, so I think that is really what has got it as far as it came.

That eye-on-the-prize type of mentality, you are going to get something done and it is going to get done fast. I have to applaud the staff to actually make it so, because it has been getting further and further in the technology capabilities. The really, I think, bright side of this is that there is an opportunity to ramp up and connect the marine components, because we have been building that whole atlas system, the whole information on species and everything tandem at the same time. Some is already integrated into the way the blueprint has worked.

I think this opportunity to connect the Fishery Ecosystem Plan closer with the blueprint will make that marine side go further and then begin to ask the questions and get even finer resolutions on what indicators would be into the future, the representation of those habitats and connections are. I think as Rua got a taste of it we're bringing the right people together on the oceanography side, the biology side, and the habitat side to figure out how to make these things go further and be useful.

MS. MORRIS: That is the key; that it be useful. In order to build a tool that works for you all, we need to know what you need. That open line of communication is super important, and we are very, very committed to that. Please call or e-mail, come to a workshop, let us know what

we can do to make your lives easier and make it easier to manage the resources that you all are responsible for, because that is definitely our shared goal.

DR. LANEY: Okay, other questions or comments for Hilary? Okay, I don't see any at the moment, so we are moving along so well time-wise that we are going to take a ten-minute break. We are going to start with remember I said not Brian Kroeber, but Brian Hooker is going to talk to us about BOEM and their renewable energy mapping and planning activities in the South Atlantic.

(Presentation by Mr. Brian Hooker, BOEM, Alternative Energy Program)

DR. LANEY: I think since you all are in different programs, we will go ahead and take questions now. Does anybody have any questions for Brian?

MR. PHILLIPS: It is pretty interesting, but I don't see much in there about the bird's interaction. We hear about it in a lot of places and there are an awful lot of shorebirds that fly up and down. How are you dealing with that?

MR. HOOKER: I didn't include it in this presentation, but we do have a whole bird-modeling program where we've looked at that. That study is available on our website. That was also done with the National Ocean Service as well. But, yes, we have looked at the flight heights and the distribution of different birds throughout the North Atlantic.

DR. LANEY: Yes, Charlie, and to that point; our South Atlantic Migratory Bird Coordinator, John Stanton, was on the – I forget what you call them, Brian, the tools that you all put together for each state. I know based on John's input they did modify the areas to try and avoid the potential for interactions with birds quite a bit at least from the larger areas that were initially proposed.

MR. HOOKER: That is true. The longtail duck area off of Massachusetts, we had evidence of them utilizing this area off Nantucket Shoals, and so we actually did remove an area off Nantucket Shoals due to the longtail duck.

MR. PHILLIPS: I know generally this would not be a bird audience, but my NGO friends would never forgive me if I didn't ask.

MR. HOOKER: That's great and we do have a pretty robust environmental studies program. We have several studies on our website, boem.gov, and there is a special avian block at least for the renewable energy program that you can see what we have done in that arena.

DR. LANEY: There are actually two other Bs, Charlie. In addition to birds, there would be bats and there would be butterflies. I don't think BOEM has looked at potential butterfly impacts. There are a couple of migratory species of butterflies, but certainly the bats have been of concern offshore because we don't know that much about bats. We are now putting those bat detectors on the offshore buoys, I guess, and I think BOEM has been funding or collecting some data on bat movements and migrations offshore as well.

MR. HARTIG: Just a couple of gee-whiz questions. How much of a setback is there for vessels in these? I would assume that the setbacks are calculated based on the grid squares that you have currently and not in addition to if someone built something there and then extended a vessel area of no interaction. Then the other question I had was how many of these wind turbines can you put per grid square?

MR. HOOKER: Thanks for that question. To your first question; setbacks, now I assume you are referring to like a traffic scheme or a traffic-separation scheme, a TSS. That is pretty much determined by input from the Coast Guard. They have basically a red, yellow, green – I can't remember what the distances are, but they have a recommended setback from the TSS.

That is where there is an established highway, so to speak, for all ships, really. I don't recall exactly what the recommendation is. It may even change depending on which TSS it is, but we do have those studies. But that is the only place where we have kind of an established setback from a facility or from a wind energy area around like a TSS or something of that nature. For your second question, could you repeat that one again; I didn't get that one.

MR. HARTIG: How many per grid square.

MR. HOOKER: That largely depends on the size of the turbine. You could have – I don't want to say it wrong, because it is based upon the diameter of the wind turbine, the blades. The larger it is, the wider the spacing is going to be. The direction that the industry is moving is to larger turbines further spaced apart.

They are generally now with the larger ones at least I want to say a kilometer and a half, getting close to two kilometers; in that range. I do have a Fishery FAQ that is on our website as well that has some of the diagrams of hub height and what the potential distance between turbines is.

MR. COX: What is timing like before implementation into South Atlantic, say, from Morehead City?

MR. HOOKER: I can't guess that. Honestly, even if we get to the lease sale – after the EA is finished, the next step would be the lease sale, which there would be an auction. It is extremely difficult to try to predict when construction would actually start. We've had lease sales in Virginia, and off of Rhode Island and Maryland and just recently off of Massachusetts.

We are just still in the process of evaluating the site assessment plans and not to the point where we are even looking at construction plans yet. The only place where we have approved a construction operations plan is off of Cape Wind in Nantucket Sound. To try to figure out when is a million dollar question that I would love to be able to answer; but the way the timing works and the way you get funding, it is on the scale of years and not months.

MR. PUGLIESE: Again, this is probably looking into the crystal ball down into the future. This was something that jumped out at me, first some of the deliberations with the Mid-Atlantic and looking at the – you get a lot of engagement early on with fishermen and placement of locations and everything, and then somewhat of a step-back, because I saw kind of a little bit of a break between some of the input.

My question really was getting to do you envision that there is going to be enough latitude if this moves forward in any parts of our region that configuration could be modified to take into account like creating corridors or taking into account reducing the current footprint that may have; instead of one big massive area, that you would like build something that would have corridors so you could have trolling through the center or whatever?

I mean, some kind of flexibility where you could get some additional input both on the physical characteristic of the area as well as fishing operations in the area that you would have some flexibility in design versus just ultimately grabbing the box and then just populating it to the maximum extent practicable.

MR. HOOKER: Good point, Roger. Perhaps at a later point, I can delve into the fishing best management practices report where we did talk explicitly about that communication; and there is enough flexibility in these areas to move things depending on what their goal is, how many megawatts that they plan to get out.

As you saw from some of those slides with North Carolina, how large that area was initially and then what is still a viable size at a later point; there is a lot of flexibility built in depending on what the goals are. When we get through the point where we have a construction operations plan, there will be another EIS at that point where we get that back and forth again before we actually build anything.

DR. LANEY: Well, a follow-up question to that I guess, Brian; and this is based on things I have heard about the industry in Europe and about insurance in particular. I guess it came up in the context of some fishermen having been told that generally speaking there wouldn't be any restrictions on them continuing to use areas. Again, as Roger said, depending on how these things are sited in a flexible manner to possibly allow for trawling corridors or fishing corridors in and among them

But then I also heard that in Europe that apparently wasn't the case, because the folks that insure the things said; well, there is too great a risk of collision and so we won't insure your facility unless you prohibit fishing activity. Is that something that has happened in Europe, and is that a consideration over here, too, for the folks that might build these things to be able to get insurance? The question is does the insurance industry have enough clout to be able to tell these folks either you prohibit fishing or we're not going to insure you?

MR. HOOKER: Excellent question, Wilson. Both scenarios actually exist in Europe. The North Sea, you are excluded from fishing in the North Sea. As a result of the exclusion, then your insurance wouldn't cover you if you are fishing in an area that is excluded. However, in the UK, there are no such problems. They are able to fish in there. They have insurance.

We've had fishermen from the UK now come and visit us on two occasions and actually council staff from the Mid-Atlantic and New England did go to the UK and talk to fishermen as well and have reiterated that very thing; that they are able to do it, there is no insurance issue right now. But at the same time, they do say that with caution, in all honesty.

They are like, well, we haven't had a collision yet to really necessarily test to see what they would cover and what they may not cover. My conversations with insurance underwriters is that

it is a lot like a car. If you are a really bad operator and you crash into jetties all the time; they may not be willing to cover you if you say you are going to be fishing in a wind energy area.

There is no program necessarily that says insurance will be an issue for folks fishing in these areas. Other folks have said that it is an issue not necessarily with the initial insurers, but the underwriters may have concerns. Again, a lot of it is speculation and just caution. There may be an issue out on the horizon if perhaps people start crashing into these if and when they are built.

DR. LANEY: I was asking the question I think more from the perspective of who is insuring the wind towers as opposed to the vessels that might be fishing among them. I guess it really does cut in both directions. Does anyone else have any more questions or comments for Brian? Okay, I don't see any hands, so thank you very much, Brian.

DR. LANEY: Okay, great, thank you. Let me introduce then Dr. Arie Roth Kaller; who is the supervisor for the Biological Sciences Unit of BOEM. These folks are all based in the Gulf of Mexico. I think Arie is going to introduce for us her two colleagues, and they are all going to kind of tag team on this presentation, which is going to address the geologic and geophysical mapping and planning activities in the South Atlantic.

(Presentations made by Dr. Arie Roth Kaller, Mr. John Johnson, Mr. Mike Celata, BOEM.)

DR. LANEY: Thank you, Mike and Arie and John, for the presentation.

MR. PHILLIPS: You mentioned a 50-mile buffer; a buffer to what, to land?

MR. CELATA: It is from the state out.

MR. PHILLIPS: It had to be 50 miles offshore.

MR. CELATA: That is right, offshore, correct.

MR. HAYMANS: Are you familiar with the 51 test wells that were drilled in the eighties? Were there any significant findings of those?

MR. CELATA: There was one, and I don't remember the exact number of wells. I think it was somewhere between three to five wells offshore New Jersey and Hudson Canyon that found some condensate liquid gas, I believe. That is the only known discovery that I am aware of. For our national assessment, we've assessed 10 geologic plays. The one that entails those wells we consider a proven play because they found in drill stem test there was some gas, I think a condensate.

MR. HAYMANS: Those were within the 50-mile current buffer, correct? They were nearshore.

MR. CELATA: They may have been; I haven't looked at that recently. I know that there was an area off North Carolina, Manteo, a unit, I don't actually believe where a well was drilled that is now within that 50-mile zone. That would be off limits to drilling. Since we didn't have a planning area sale proposed in New Jersey, I didn't go and check to see if that was within or outside that buffer.

MR. CONKLIN: I had a few questions, but the first one was when somebody purchases the rights to the oil and gas offshore there; where does the money go? Does it just go into like the general treasury?

MR. CELATA: It goes into the U.S. Treasury. There is in the Gulf of Mexico a law called GOMESA that does distribute some of the revenues. This would be the royalties they receive once there is a discovery. I think it is 18.75 percent is the royalty percentage that goes into the Treasury and then some of that is disbursed back to the states in the Gulf of Mexico. I don't know the exact percentages of what the disbursement is, but some of that money is disbursed back into the states. That is in place by an act of Congress. Congress has to vote to distribute the royalties.

MR. CONKLIN: Well, we're all familiar with those acts of Congress. How long does the survey last once a permit is issued?

MR. CELATA: A G&G permit?

MR. CONKLIN: That's right.

MR. CELATA: I think the permit is up to a year. Usually in the Gulf we do it in two-month increments. That way we can ensure that the geophysical companies supplies us information and updates us with reports every two months; but the permit itself is for a total of a year.

MR. CONKLIN: Okay, and then how about the frequency of the air gun blast when they are doing the seismic testing. Also in conjunction with that, I would assume that the grid areas would become smaller and smaller if there was some interest in it.

MR. CELATA: Do you know the air gun blast?

MR. JOHNSON: They are basically about every 10 seconds.

MR. CELATA: About every 10 seconds. If we're talking about explorations; John said primarily you have 2D surveys, and he showed the grid size. The idea is very valid, is to try to really get a better understanding of where the resources reside. When we do a national assessment, we have used the data that exists and so that is from the late seventies and early eighties. It is very general as to we don't identify specific prospects at this point in time.

I think it is possible that at the lease sale time companies may bid on the 2D data, but definitely I would say before they drill a well. In the Gulf of Mexico now, they routinely collect 3D data. Now there is a lot of information and data in the Gulf of Mexico. One of the issues and why they moved to more 3D is because they are going into more technically complex areas and you need the more detailed data. If a lot of fields in the world have been discovered on 2D data, it would require a large field for that to happen. I would think, and this is speculation on my part, but it would probably collect more detailed information before they drilled a well.

MR. CONKLIN: One last thing. On the incident harassment permit; can anybody apply for one of those and get it; and if so, can like fishermen apply for it for the endangered species?

MR. CELATA: That is not a question for me. That is a question for National Marine Fisheries, I think.

DR. LANEY: Bonnie, can you address that or did you want to ask another question? Anybody from NMFS want to tackle Chris' last question?

MS. SMIT-BRUNELLO: Chris, I am going to find out the answer to your question and get back to you.

MR. CONKLIN: Sounds like it could be a solution to all of our problems.

DR. KALLER: Well, I think generally, too, it has to have the possibility of actually having a take. That would be I think one of the problems for the Marine Mammal Protection Acts and going to NMFS for that AJ.

MS. BECKWITH: When we were talking about the set-ups for the 2D and 3D, you didn't discuss the decibel levels. What are the average decibel levels difference between 2D and 3D? I assume the 3D has more powerful decibel levels from the air guns.

MR. JOHNSON: Well, to some extent it can vary with the array size, but basically the air gun array will still be – I don't remember the exact numbers off the top of my head, but you are talking in the area of 240 or 260 DBRMS. I think that you are going to find that to be true for the typical array size that they would be using, whether it is 2D or 3D.

MS. BECKWITH: Okay, so to follow up, we have these incredibly large decibel levels occurring every 10 seconds and from the presentation that we've heard recognize that there is some mitigation in place for mammals and turtles and potential conflicts with fishermen and even some habitat issues; but for this council, of course, we are concerned about fish.

A lot of our species that we manage have high site fidelity. We have the potential of having these fish that are generally hanging out in one area have these arrays pass over and have the potential to really cause some hearing damage and impacts to spawning behavior if we happen to be in spawning season. My question would be in the Gulf has there been any mitigation or studies or even consideration of the impacts to actual fish?

MR. JOHNSON: I will pass that off to Arie, but I will make one comment in that – this is from a layman's aspect, a geologist, but part of the mitigations that they use whenever they have to shut down, they do what is called a soft start up, which basically starts out with the smallest gun in the array and they slowly ramp it up.

Actually that basically comes out of the marine mammal issues. But in my personal opinion, that also would have some effect on the fish and I would think these fish would hear this coming at quite a distance; and since they are mobile would be able to move. Yes, it undoubtedly is loud. It would seem like also they would partially mitigate that themselves by getting out of the way and then coming back after the sound had passed by, because these vessels are moving at about five knots. They are cruising by. It is not stationary and just pounding you hour after hour after hour. But, anyway, let me give that to Arie.

DR. KALLER: No, there really haven't been a lot of studies regarding the seismic surveys in the Gulf of Mexico. There have been in different areas, but unfortunately a lot of the studies have come back inconclusive with differing conclusions. What we try and do is use the best available science.

It is interesting that you did bring that up, because it is something we have talked about with our studies program. I know a couple of years ago one of the studies I was looking at is looking at different reef fish that have known site fidelity and trying to figure out a way to use something to see what their behavioral responses are when a vessel goes by.

Unfortunately, sequestration happens and things like that. Now that we are opening up in the Atlantic, we are starting to look and discuss different research topics at this time and are willing to talk with people and see how we could possibly partner in things like that to fill these data gaps, because we know they are there especially regarding fish and invertebrates.

MR. COX: I do a lot of spearfishing, a lot of diving and stuff. I've always wondered, because I was in Onslow Bay this year and they were doing some of this testing. I am just curious; what is a safe distance for human interaction under water when they start this process?

DR. KALLER: I am not sure exactly what a safe distance for human interaction; but I do know that the areas around the seismic vessel, there wouldn't be other activities allowed around that. We also have divers in our group that have been doing research on platforms and stuff and seismic vessels go by.

They heard them and they didn't have any detrimental effects, but I don't know of any studies that have actually looked at the distance for a human versus a seismic vessel. But, again, divers and things like that would find out from notice of mariners when the vessel would be coming through, so there wouldn't be that conflict of use.

MR. COX: Well, I appreciate that. I was just curious though how strong and how loud it is underwater and how far that sound carries.

MR. JOHNSON: For marine mammals, when they have the PSOs on board, in the Gulf we use a 500 – yes, take the species observer. They have a 500 meter exclusion zone around the vessel that keeps marine mammals away; and if they get within that, they shut down. I don't know that I would want to speculate as related to human, but they do have that exclusion area zone for the marine mammals where it won't let them get closer than that to the source.

MR. BOWEN: I was attending the Law Enforcement AP meeting, so if I missed what I am fixing to ask, I apologize in advance. The 50-mile buffer from shore – and I am not familiar with the shelf north of North Carolina. South of there and off of my state of Georgia, the shelf is further than 50 miles. Now Florida, there wouldn't be a problem, because you are east of the shelf. The habitat, the destruction of the habitat inside the shelf; is there a chance of that? What kind of damage are we looking at for the habitat?

MR. CELATA: I think the 50-mile buffer was pretty much based on the comments we receive. I think that was specifically from the state of Virginia. I can't speak for the Secretary as to why

that got applied uniformly along the Atlantic for the states that are included in the planning area. What I said was the area can't be increased but it could be decreased. Was there other information that could be provided as we move forward that would show that maybe that buffer zone needs to be greater; that would be incorporated to the process.

I'm not sure how that would impact the decision, but it is possible to increase that buffer zone from shore; but it wouldn't be possible to decrease that buffer zone from shore. One of the reasons that we're here is if there is information that would help us make a more effective decision moving forward; you can comment on line, come to one of the scoping meetings and provide that type of information.

MR. BELL: It is related to the fish. The assumption that the fish will move to avoid the stimulus from the – well, the thing about the fish that we're primarily concerned with, they are extremely closely tied to that habitat. If driven off the habitat, then potentially – if that is what they do, if that is how they respond; their response might be to hunker down.

But if driven off of that, there is the susceptibility to predation and things, so that is why what is extremely important is the location of these habitats. Where you have these hard-bottom, live-bottom habitats; that is where the fish will be. To the degree that those can be avoided, and particularly, as Anna said, during spawning time; that is a particularly sensitive time when you might not want to interrupt their behavior.

It is not like some of the pelagic species which can kind of maneuver around and move, perhaps. That is what we would be probably most concerned. I'm speaking for myself I guess, but those would be the areas we would be really particularly concerned about. Maybe we don't really understand how these demersal fish kind of respond to this much noise or whatever, but that is what we would be mostly worried about, I would think.

DR. KALLER: Like I said, unfortunately a lot of the research is inconclusive and there is not much of it, because it is hard to study this type of thing in the field versus hitting them in laboratory and getting a physiological impact. But that is also one of the reasons why we are doing the site-specific EFH consultation. We would do that by application; that would be the action and the area. We go through the assessment and work with NMFS on that. That is kind of why we have taken this kind of step each application approach.

MR. CELATA: I think that is important information for us to have, where these habitats are located. We did a programmatic environmental impact statement; and if that was provided at that time, that was taken into the analysis; but if it wasn't, that would be something we should consider. I do believe that we have concentrated a lot on marine mammals.

I would say that I am not sure there is scientific evidence because of the ramp-up process that marine mammals or fish actually move away. I think there is no scientific evidence one way or the other at this point in time. Those may be things that we need to look at. As I said, we've just come to be responsible for the Atlantic recently. One of the things we did, and again it is concentrating on marine mammals, there is an AMAP study, so it is Atlantic Marine – no, it's not marine?

DR. KALLER: Atlantic Marine Assessment Program for Protected Species, AMAPPS.

MR. CELATA: That was actually started by the oil and gas program a long time ago, but it was taken over by the renewable energy program. We've added money to the program, because that is concentrated in areas where the renewable energy has undertaken it. We are going to be further offshore, so the goal was to expand that study to include areas potentially in the future where there might be oil and gas drillings.

I think these are very positive comments of things that we have a studies program that maybe we saw that there was an impact of wind energy turbines on fisheries, I think, and that may be a study that we need to discuss and include as part of our future studies program. That is why we're here. I think that is very valid input; thank you.

DR. LANEY: I'll just say while I'm thinking about it that we did have a potential opportunity in North Carolina to look at some noise impacts on American shad, which are one of the most sensitive species relative to noise. We had talked to Dr. Arthur Popper, who is an expert on noise impacts on fish. Unfortunately, that study didn't materialize. That may be something we want to go back and look at in terms of potential study design.

MR. HAYMANS: Spectrum and CGG did a very preemptive strike in Georgia, and I'm sure they probably did it with other agencies, but they came down and gave us a great presentation on what they plan to do if they are successful. The grids, at least for the southern South Atlantic, were 20 mile grids. It is not like they are running across every piece of hard bottom that is out there.

In North Carolina there is some seven mile grids, but even seven miles is a pretty large grid for what they're doing. That is Part 1; I think the grids are pretty big. Part 2, I'm hoping that maybe there is a way that NOAA can work with BOEM to conditionalize the permitting process to share data with the councils; and not the 2D or 3D data but the high-resolution data.

I don't know whether these 2D or 3D boats are towing the high-resolution data at the same time or whether it is separate applications. Well, it is separate applications, I guess. This council lacks the information on what the bottom looks like. The resolution is very large across most of the shelf.

If there were a way that we could conditionalize some of these permits that these companies share that type of data with us; I think it is worth – whether we kill fish, drive fish off the reef for temporary; I think it is worth getting information on those spawning locations and what it looks like over the course of time.

MR. CELATA: On the high-resolution data generally the agency does not get that until at a point where they are going to actually site a well. That is not generally collected in advance. In the Gulf of Mexico, unfortunately for years the operators have been collecting that information and we have not required that information. That is changing for us in the Gulf of Mexico.

I would hope in the future that if this data was collected, then we would be able to gather it and then make it public. We are heading that way in the Gulf of Mexico. Unfortunately, I think in the Atlantic that data won't be collected until there are more site locations. Maybe that is

something that is available from renewable energy for their sites currently, I don't know, but generally that is not collected until later in the process.

MR. HAYMANS: Well, the renewable is really what I was going with that in that is sort of the data they are catching.

MR. CELATA: I think that is something we should discuss as an agency. I think that is a good point.

DR. LANEY: That is certainly something a recommendation the council could make, I would think to BOEM, for sure.

DR. PONWITH: It is only because Doug stole my question and we're like-minded on this; and that is the paucity of habitat characterization data that we have is hampering our ability to do our work. We've got a keen interest in these data to the extent that they can help us with bottom/surface characterization.

My understanding in the Gulf was that those data actually did exist and that they are proprietary; and then after a certain period of time, is it 20 years or something like that, they are eligible to go into the public domain. Twenty-year-old data is better than no data when things change slowly in the benthic community. Those data would be invaluable.

My question is even if those data were proprietary, is there a way to negotiate? If we are uninterested in what is happening subsurface and the skin, that surface data could be teased apart from the portion of the data that are sensitive; that kind of information is invaluable to us to the extent that we can use it and interpret it to understand benthic characterization of those habitats. That would be something I would be keenly interested in being in discussion with as this unfolds, as the states are as well.

MR. CELATA: Yes, the 2D data that was collected in the late seventies and early eighties is public information and it is available. It is currently all available. There is a 25-year proprietary period for seismic data, but currently that is only affecting the Gulf of Mexico. We have actually recently broached with industry of changing that proprietary period, but I assume that discussion will be a long process before it gets changed.

We have the longest proprietary period I think out of any country in the world at this point, and Mexico recently has gone down to 12 years. We have actually started that process, mentioning that to the IAGC this past week. I guess that was timely on our part. The Atlantic 2D data is available; is that referenced on our website? That reference is on our website. I think we have both image data, and it is in a format that would be needed to be loaded into a workstation. It is SEG-Y data. I'm sure universities probably have software that can view that and load that; but you wouldn't be able to see that in any normal software.

MS. BURGESS: Thank you for being here today to speak with us; I find it very informative. In your presentation you hinted that exploration can be conducted in marine sanctuaries, in the G&G section of the presentation. If that is true, can lease sales also occur in sanctuaries; and if that is true, has it happened in the past?

DR. KALLER: Currently there is a memorandum for all National Marine Sanctuaries, so anything that is currently a sanctuary as of 2008, I think that was July 14th, cannot be leased. Anything that is currently a marine sanctuary cannot be leased. Any activity we were talking about is just G&G survey over the waters of the sanctuary.

MS. BURGESS: Those sonar surveys can still occur in sanctuaries?

DR. KALLER: They could if that is where they were planning to go, but again we would consult with the sanctuary. There is activity within the Flower Garden Banks, and so we have talked to them and done some preliminary discussions with the National Marine Sanctuaries in the Atlantic. As we agreed upon, if an activity would occur there, the consultation would be very similar to the EFH, because it is similar priorities.

MR. CELATA: There is a requirement to coordinate with the sanctuary, too, before any seismic data can be collected in that vicinity. That is a requirement of the permit. The Flower Garden Banks, this is a coral reef in the Gulf, and it has been probably the most studied sanctuary. We've had continuous monitoring there for many, many years. It is a pretty healthy community.

DR. LANEY: Thank you, Mike and Arie and John and Brian as well. I think we're getting to the point where we're over our time allocation. Since these folks are going to be around, council members if you have any other questions for them, catch them after the break.

MR. PUGLIESE: Just a follow up from where we are right now, because we really appreciate BOEM's willingness to participate both on the renewable and on the G&G. As a follow up to this, we are going to have them participate in our Habitat Advisory Panel to literally get in the weeds on some of these things; so have sessions on what they know about impacts of sound on fish, what we know in terms of opportunities on sharing of information on mapping; so get into a lot more of what can be compiled.

We are also going to be working on our energy policy at the same time. I think it is an opportunity to pick up on some of the discussion here about needs and information and possibility for sharing and what we can do with this and guidance for the council on how to react to this into the future.

MS. BECKWITH: It makes me feel better to know you're on it, Roger.

DR. LANEY: I guess the next thing on the agenda was Item 6, which was any discussion and guidance to staff, and Roger just sort of addressed that to a certain extent. Do any other council members have any particular guidance they wish to offer to staff? Obviously, as we have an opportunity to respond to BOEM notices and documents, I'm sure the council will want to avail itself of that opportunity. Does anybody have any specifics? You all know who the staff are, so if you have suggestions.

DR. DUVAL: I assume that the Habitat and Environmental Protection AP would naturally be considering or potentially discussing any proposed projects with regard to these types of activities and provide the council with some input.

MR. PUGLIESE: Yes, the intent is to get into that as well as any of the information available on what impacts; and that would kind of guide it and lead it also into the policy statement development.

DR. LANEY: The Habitat and Environmental Protection AP is meeting in April, so that will be on the agenda for that meeting. I guess at this point we ask if there is any other business to come before the joint committees. I don't see any.

(Whereupon, the meeting was adjourned at 6:10 o'clock p.m., March 2, 2015.)

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Monday, March 2, 2015

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<input type="checkbox"/>	Brogan, Gib	gbrogan@oceana.org	Mar 02, 2015	1:41 PM EST
<input type="checkbox"/>	Bailey, Adam	adam.bailey@noaa.gov	Mar 02, 2015	1:30 PM EST
<input type="checkbox"/>	Bademan, Martha	martha.bademan@myfwc...	Mar 02, 2015	1:12 PM EST
<input type="checkbox"/>	Alvarado, Nicolas	Nicolas.Alvarado@noa...	Mar 02, 2015	1:09 PM EST
<input type="checkbox"/>	Dale, David	david.dale@noaa.gov	Mar 02, 2015	11:51 AM EST
<input type="checkbox"/>	Lloyd, Vic	vic_lloyd@bellsouth...	Mar 02, 2015	11:39 AM EST
<input type="checkbox"/>	Takade-..., Helen	htakade@edf.org	Mar 02, 2015	10:28 AM EST
<input type="checkbox"/>	Bresnen, Anthony	anthony.bresnen@myfw...	Mar 02, 2015	10:15 AM EST
<input type="checkbox"/>	Neer, Julie	julie.neer@safmc.net	Mar 02, 2015	10:07 AM EST
<input type="checkbox"/>	Gore, Karla	karla.gore@noaa.gov	Mar 02, 2015	9:41 AM EST
<input type="checkbox"/>	Gerhart, Susan	susan.gerhart@noaa.g...	Mar 02, 2015	9:38 AM EST
<input type="checkbox"/>	Bonura, Vincent	SailRaiser25C@aol.com	Mar 02, 2015	9:36 AM EST
<input type="checkbox"/>	Iverson, Kim	kim.iverson@safmc.net	Mar 02, 2015	9:33 AM EST
<input type="checkbox"/>	Package..., Christina	christina.package-wa...	Mar 02, 2015	9:28 AM EST
<input type="checkbox"/>	Swatzel, Tom	tom@swatzel.com	Mar 02, 2015	9:26 AM EST
<input type="checkbox"/>	DeVictor, Rick	rick.devictor@noaa.g...	Mar 02, 2015	9:25 AM EST
<input type="checkbox"/>	MacLauc..., Bill	billmac@charter.net	Mar 02, 2015	9:06 AM EST
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<input checked="" type="checkbox"/>	holiman, stephen	stephen.holiman@noaa...	Mar 02, 2015	8:33 AM EST
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<input checked="" type="checkbox"/>	Laks, Ira	captainira@att.net	Mar 02, 2015	8:21 AM EST
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<input checked="" type="checkbox"/>	Termini, Valerie	valerie.termini@noaa...	Feb 24, 2015	1:04 PM EST
<input checked="" type="checkbox"/>	Binns, Joe	joebinns@gmail.com	Feb 23, 2015	2:45 PM EST
<input checked="" type="checkbox"/>	Byrd, J	julia.byrd@safmc.net	Feb 12, 2015	10:04 AM EST
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