

# **SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

## **HABITAT PROTECTION AND ECOSYSTEM-BASED MANAGEMENT COMMITTEE**

**Doubletree by Hilton Oceanfront Hotel  
Atlantic Beach, North Carolina**

**December 8, 2015**

### **SUMMARY MINUTES**

#### **COMMITTEE MEMBERS:**

Doug Haymans, Chair  
Mel Bell  
Jack Cox  
Charlie Phillips  
Robert Beal

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Chester Brewer  
Jessica McCawley  
LTJG Tara Pray

#### **COUNCIL MEMBERS:**

Dr. Michelle Duval  
Zack Bowen  
Chris Conklin  
Ben Hartig

Anna Beckwith  
Mark Brown  
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#### **COUNCIL STAFF:**

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Chip Collier  
John Carmichael  
Julie O'Dell

Gregg Waugh  
Amber Von Harten  
Myra Brouwer  
Dr. Kari MacLauchlin  
Dr. Brian Cheuvront  
Mike Collins

#### **OBSERVERS/PARTICIPANTS:**

Kevin Anson  
Dr. Jack McGovern  
Phil Levin  
Tracy Dunn

Dr. Bonnie Ponwith  
Monica Smit-Brunello  
Erika Burgess

Additional observers attached

The Habitat Protection and Ecosystem-Based Management Committee of the South Atlantic Fishery Management Council convened in the Doubletree by Hilton Oceanfront Hotel, Tuesday morning, December 8, 2015, and was called to order at 9:45 o'clock a.m. by Chairmen Doug Haymans.

MR. HAYMANS: Do you have anything to add to the agenda? Seeing none; we'll accept the agenda as presented. We are going to try to move a little quickly through this, because I would like to try to reserve Snapper Grouper some time at the end of this to get some of the perfunctory things out of the way before lunch; so we can get into that.

You were presented the minutes. Does anybody have any corrections or additions to the minutes from the last meeting? Seeing none; those minutes are approved. From here on out, it is all Roger. Are you ready, Roger? We're going to first have a report from the AP.

MR. PUGLIESE: I would like to walk in through the first item of business, which is a summary report of the Habitat Protection Ecosystem-Based Management Advisory Panel meeting that was held at FWRI, November 17 and 18. I'll run through the highlights and then back up to one of the main activities that happened, which was the finalization of the redraft for the council's consideration of the energy policy.

We did move through some reports and status of the FEP development in the process. We also advanced deliberations and discussions on the developing EFH policy for artificial reefs. The subpanel chairs at the meeting did identify a core team with Jason Peters from North Carolina, Bob Martore from South Carolina, Eddie Leonard from Georgia and Keith Mille from Florida with new panel member Brian Hooker from BOEHM volunteering to participate in the group, and that will be expanded.

The core members are all part of the FEP-2 Artificial Reef Writing Team, also. They are advanced with updates nationwide, so they will focus on South Atlantic on the status of alternative energy activities highlighting some of the more recent ones with, I think, in the last couple days, South Carolina's notice of wind areas which has been published for comment.

One thing I will note about that is that they did exclude all the HAPCs, the artificial reef HAPCs; SMZs that were identified within the call areas. That moved it into the review and revision of the EFH Policy Statement on Energy, Exploration and Development. They did truncate it down to Energy Development, because it does include transportation too. That team that helped lead that was led by Jocelyn Karazsia at NMFS Habitat Conservation Division and the subpanel Chairs and other participants that provided initial draft, which was reviewed and refined at the meeting. As I said, I'll get back into the actual details of the policy at the end. The group also had the opportunity to review the most recent materials and online capabilities of the atlas and different web services, training, and had input on various panel topic recommendations on climate issues, as well as threats and potentially any comments they had on citizen science advancing in the region.

We did have the opportunity - Jason Link attended the meeting and was able to provide input on the developing draft ecosystem-based management policy provided by National Marine Fisheries Service. While he was there, he also did provide the group with a status report on the final climate policy that was developed by National Marine Fishery Service, also.

Those were accomplished and the last item in the meeting in advance of the finalization policy was an update on the South Atlantic Landscape Conservation Cooperative. As I mentioned earlier, I'll touch on that a little bit more in the general FEP discussions, because of its connection to the Conservation Blueprint and modeling.

MR. HAYMANS: Before we get into the energy policy and FEP, are there any questions for the AP? Okay, thank you, Roger, go ahead.

MR. PUGLIESE: That brings us right into the policy. Now, what I'll state right from the beginning is what this effort did was a really good opportunity to remove a lot of dated material, also consolidate and very much provide a more crystallized view of threats and then recommendations on policy.

It provided one of the biggest things that National Marine Fishery Service wanted to do, which is also have enough of a refinement so it would enhance any of the EFH consultation process and use in those processes. I think that was one of the goals and tasks, and it got accomplished with this iteration.

Just to touch on the highlights, the way the document is structured, it does highlight its connection to previous policy all the way through the last iteration of the materials highlighted in the Ecosystem-Based Management amendments as well as the first generation fishery ecosystem plan, where all of the different policies were stated previously.

The one thing that it did, also, is where there had been some divisions of policy by type, where they could be addressed in the same context - impacts from a combination of different entity developments - the team and the AP itself provided that opportunity with this effort to refine each of those different types of characteristics.

What it would do, if it was addressing oil and gas and wind, it was kind of combined in the way it looked at either risk in impact or a policy recommendation. Essentially, what the structure of the document does is provide the foundation of the EFH at risk by areas, and it reviews whether it be the essential fish habitat or habitat areas of particular concern.

It identifies the specific habitat types, both nearshore estuarine and inshore habitats. It provides the detailed information on offshore, and what its doing is it is tying it directly to the designation. A lot of these specific wordings are tied to either the habitat type of the designation under an individual species or species complex. It addresses the threats, either combined or individually from oil and gas, wind and other energy exploration areas. It provides comments on siting design. Then it gets into identifying the links to impact to species. Now it did not just focus only on South Atlantic species, it provided managed species within the regions.

It covers a number of Mid-Atlantic managed species such as summer flounder, bluefish, and then it does provide the foundations for any of the designations from South Atlantic Council. I won't go into all the details, but it really does address most of the managed species, as well as ones that are part of the food chain but not managed by the South Atlantic Council diadromous species. In addition, it provides a connection between an EFH designation, HAPC designation and an activity in the FMP that it was associated with.

MR. HARTIG: Yes, Roger, in your species list, I was just wondering what - that is only a few of our species. What was the determining factor for including those particular species?

MR. PUGLIESE: It was identifying direct impacts to those individual species areas, because I think it does get into broader statements as you get further on; in terms of identifying the habitats. There is a cross back and forth between species and habitats, so those habitats described in the front, most of them cover, essentially, all the snapper grouper species. Most all of those habitats are identified within that realm, so it was a cross between those with specific focuses provided in a later section.

DR. LANEY: Yes, Ben, I think if you look up there under C, you will see it says many snapper and grouper species. We just didn't list them all. Roger, the one thing we might want to add here under M for diadromous species, it says riverine areas, but should we add riverine and oceanic in there that support including important prey species that you said, blah, blah, blah, et cetera. I think we probably ought to add those words "and oceanic" in there.

MR. PUGLIESE: I'll make that note; we'll amend that in the final. Now the last area under habitats, it went beyond the HAPC designation and tried to pick up what the council had identified previously when they were trying to tie in state designations, and this specifically had to do with where states identified things such as strategic habitat areas.

What it used was the example of the state of North Carolina strategic habitat areas identified. Originally, there was a discussion of trying to include a list, and the way that it is structured, you really couldn't list them; it is by a specific habitat type. It was identifying those habitats as defined within the documentation; what North Carolina Marine Fisheries Commission had established for up to this point.

Some are still under proposal now, but in the past what the council has tried to do is identify those as designated by the state, those become part of the EFH designation. In this case it is identifying their importance in this context, also. That moves from the habitat areas and species to specific threats.

The list is pretty extensive, but I'll just touch on the beginnings of these, and if you want to go into more detail, we can, but I think just for the walk through; direct mortality relative to any of the drilling, dredging, deposition of fine sediments and all the turbidity associated with those. Any of the elevated turbidity from drilling associated with any of the activities; direct mortality on eggs, larvae and from any of the water intakes as well as juvenile and adults from spills or pipelines or vessel transits near or close to any of the areas. Alteration of the long term shore migration pattern, there was a lot of discussion actually on this one; it had to do with very specific placement of materials if it altered that activity.

A specific one had to do with frack outs and the potential for damage from those if they occurred from any of the horizontal drilling and the types of habitats that that could affect, sensitive habitats including sea grass corals. Permanent conversion of bottom habitat to artificial substrate and that transfer between two different ecological components of the habitat was identified.

Impacts on any of the benthic resources from placement or shifting of anchors, and this has to do with some of the big deployments of some of the systems, whether it be some of the acoustic Doppler profilers or any of the other structures that would be holding down some of the mechanisms associated with energy development.

Anything that would affect the timing of river flow or blockage and reduction of critical spawning habitats, alteration of community diversity, composition food webs, energy flow with placement of structures again. Fish behavior and health, there was a lot of discussion on the issue of sound relative to fish.

This one specifically addresses this and sites the most recent work by Popper in 2014, which gets into kind of a cross section of multiple things; everything from direct mortality to threats. What this did was try to capture that broader scope, anything negatively impacted by anthropogenic sound depending on sound pressure levels and duration of sound-producing activity.

A lot of the discussion also had to do with some of the sound activity in shallow waters which was a lot more significant than some of the areas in deeper systems. Operation of power plants and any of the water quality associated in water flow associated problems; the interactions among all effects, including lethal and sublethal, direct/indirect, short term/long term and accumulative, this was trying to capture the multiple affects that could happen from all these different activities happening and how significant that could be on the overall system.

It also pretty much highlighted the fact that most of those cumulative impacts are not assessed. Many times the only thing that is looked at, especially when they're doing pilots, is that point in time that impacted the one activity versus a fully built out or operational system for whatever type of energy production you're talking about.

That leads us directly to the policies for energy exploration development activities. This builds on the activities that the council had identified in the previous policy - expands, refines. In many cases as I had mentioned before, it identifies how they cover multiple energy activities; so the intent was to try to again capture that in this effort.

Right from the beginning, the first policy is avoid, minimize, and where possible, offset damage to EFH, EFH HAPCs and CHAs. It could be accomplished in part by integrating the best available and least damaging technology into project design. That was one of the most significant recommendations right in the beginning. Projects avoid intersection or overlap with allowable fishing areas in the deepwater coral HAPCs, so trying to acknowledge the fact that we've got active fisheries in some of the deepwater coral areas that need to be addressed in any of the efforts that are ongoing. There has been discussion on use of underwater turbines and other that may be tried to be associated with those high flow regimes associated with these coral systems. All facilities associated with energy exploration development should be designed to avoid or minimize to the maximum extent practicable impacts on coastal ecosystems and sand sharing systems.

Projects shall comply with existing standards and requirements regulating domestic and international transportation of energy projects, including regulated waste disposal and emissions, which are intended to minimize negative impacts and preserve the quality of marine

environment. This is where they integrated. The transportation is already integrated into here so there is no need to include that in the title also.

The next has to do with the liquid natural gas and open loop processing facilities should be avoided in favor of any closed loop systems. Water intakes associated with closed loops should be minimized, and the effects of fishery resources should be determined through baseline studies and project monitoring.

The last one has to do with pilot scale projects which should not occur in areas where full scale efforts are predicted to be environmentally unacceptable. The examples were in marine protected areas, coral habitat areas of particular concern, and potentially spawning special management zones. The next section was to try to get beyond the policy recommendations, specifically looking at EFH review, administrative activities, licensing and some best management practices; pulling them all together as part of the entire package.

This gets directly to the EFH assessments to insure that they are prepared for energy-related projects in compliance with the 50 CFR parts 600 subpart K. Those are core recommendations on the descriptions of proposed activity analysis effects, cumulative effects, EFH and managed species and associated species by life history stage.

This does get into a recommendation of fine level detail if they can make it. The agency also brought effects to the action on EFH as well as any proposed mitigation. The next area has to do with expanded EFH consultation. This really does identify the need to have expanded consultations if it is especially impacting EFH, EFH/HAPCs and CHAs, and this provides the opportunity for National Marine Fisheries Service to advance that once those types of determinations are made where appropriate.

In addition, impact evaluations should include quantitative assessments for each habitat type based on recent scientific studies, habitat characterization and best available information. All EFH assessments should be based upon best available information, be conservative and follow cautionary principals. The EFH assessments are produced with information gathered from best technologies, map characterized and project sites.

The methods used for habitat mapping and characterization should reflect the input from resource trustees and perform. Again, these are specifically being brought in to help and support and expand the EFH consultation process. Existing transportation, this is identifying where possible use the existing systems instead of creating new tables, pipelines, et cetera to minimize impacts. Also, the effects of sound need to be identified and their impacts on fish behavior helped in any of the assessments. Compensatory mitigation should not be considered until avoidance in minimization measures had been duly demonstrated. This is something that is a carryover from previous policies. There was a lot of discussion about making sure that it didn't immediately jump to mitigation and we tried to avoid to the maximum extent practicable, any impacts on essential fish habitat in the areas of particular concern.

Modeling efforts should characterize any of the assumptions and apply to any of the potential biases. Determination of the physical; that was one thing that is desired to try to advance more of the physical and chemical oceanographic and meteorological characteristics in any of the

areas, so you really understand what the impact of spill trajectories and also how that affects any of our EFH designations in any of the conditions associated; water quality, wind, et cetera.

Environmental impact statements or environmental assessments or EFH assessments for any outer continental shelf oil, gas and lease sale should be addressed to impacts. If any from activities specifically related to natural gas production, safety precautions are required in the event of sour gas. Also, it is looking at what the potential for dispersal or translation of that; transport to nearshore/inshore or along the Gulf Stream.

License or permit decisions for construction projects that penetrate or are attached to the sea bed should be based on geotechnical studies completed to insure that the geology of the area is appropriate for construction in method and geologic risk. Adequate spill containment and clean equipment should be maintained for all developing facilities and equipment shall be available on site or located on site with landing times trajectories.

This addresses the need for bonds being required to insure that the research available for any unanticipated environmental impacts, spill response, cleanup or any assessment. Expiration, sorry, I'm just rolling on.

DR. DUVAL: Hey Roger, on Number 13 that exploration and development activities. I was just going to suggest that we change the – it is almost like statutory language in there. It says these activities shall not disrupt or impede nor shall they do this. I was just going to suggest we change that to should. They should not do this, because “shall” tends to be more – I think of that as statutory and commanding.

DR. HAYMANS: That was one of my primary comments throughout, especially these two sections is “shall”, “shall be”, “shall not” is in multiple places, and I wanted to find out why that wording was there versus the “should” in most of the others.

MR. PUGLIESE: I think some of it - we had those discussions specifically and had changed some and didn't get to, I think, all of those; because that had been highlighted as that we should be using. Some of them were “may” or something, so it was really halfway there, and then the recommendation was to go to “should” on a number of them. I don't think we necessarily caught all those individuals. I think, to be uniform throughout here, any of those “shall” need to be, so it is not a directive. The big point is we don't have the statutory authority to say “shall”, also, you can't be saying that.

MR. HAYMANS: Yes, I count at least nine places where it is “shall”.

DR. LANEY: I think, yes, I agree that they should be “should” here, and I think the “shall” may ultimately come into play where PRD had the statutory authority for defining reasonable and prudent measures when they're doing a Section 7 review on something. That takes place in a different administrative process. I think that is where those would come into play, but yes, I think it is good to change them to “should”.

MR. PUGLIESE: Yes, in finalizing this, what I'll do is make sure we go through and catch any of the ones that are “shall” and change those over to “should”. The one that I was getting at, and it had to do with affecting “should not disrupt or impede migratory patterns of threatened

endangered species.” The license and permits “should” describe required monitoring before, during and after projects.

That was trying to capture the entire scope of any projects, so it wasn’t just identified at the beginning of the project, it was maintained so you knew the overall impact. Third party environmental inspectors should be required in all projects to provide independent monitoring and permit compliance. Hydro test chemicals may be harmful to fish and should not be discharged into waters of the United States.

License or Permittees shall require all project related work vessels that traverse any of the reef systems or sensitive habitats to be equipped with standard navigational aid, safety lights, communication. Equipment such as tow lines should be secured during transit. U.S. Coast Guard automatic identification system requirements must be followed. Any anchor placement should completely avoid corals and be visibly verified by diver or remote camera.

In addition, measures should avoid anchor sweep and should be developed and implemented. Appropriate buffers should be designated around sensitive marine habitats. This was to some degree left more generic so that it could be a case-by-case area and activity-by-activity in any of the reviews in EFH consultations. A contingency plan should be required to address catastrophic blowouts from more chronic material losses from any LNG facilities, including trajectory and other impact analysis.

Remediation measures, responsibilities, license and permits should require the development of resource sensitive training modules specific in each project, construction procedure and habitat types found within the project or impact area. Those training should be provided to all contractors and subcontractors. That is the context. I apologize for going into that much detail, but it is the actual measures and policies, and they put a lot of work to get it to this point. Questions?

DR. LANEY: Well, a comment and a question for Monica. The comment is that, hopefully, everybody around the table realizes that the council’s policy basically establishes an administrative record for lots of other folks who use the policy, specifically, those regulatory review agency folks and all the state agencies in the four South Atlantic states, as well as a lot of my colleagues in our Ecological Services Offices for the Fish and Wildlife Service and also the National Marine Fisheries Service Habitat Conservation folks.

It is really important for us and for them, and I think the team that Jocelyn led has done a great job in updating it. The one question I had for Monica, and it occurs to me going back to our “shall and should” discussion. Monica, for example, in Number 16, if there is another federal statute that precludes the discharge of hydro test chemicals into waters of the United States, would it be possible for us to leave the “shall” in there and then put the statutory citation in parentheses after the “shall”? For example, if the Corps of Engineers has the authority and they have been mandated not to allow these sorts of discharges; could we do that? I’m just asking the question.

MS. SMIT-BRUNELLO: Yes, I think you could.



DR. LANEY: I don't know that that is the case, but if it was the case, it would seem to me it would be appropriate to leave "shall" in there, but then just put the statutory citation in there.

MS. SMIT-BRUNELLO: I think that would be fine. I can take a look at that. Well, I don't know about researching, if I'll be able to research whether hydro test chemicals are prohibited from being released and all that; but I would be glad to look at the policy after you've got those kinds of inserts in there and make sure that I think it's legally sufficient or okay.

MR. HAYMANS: Wouldn't that require a search of each one of those statements to see whether or not there is an authority?

DR. LANEY: I guess, technically, it would, Doug, but I'm just saying if there are cases - I'm not advocating that we spend a tremendous amount of time going back through the policy to see if that is the case. But if there are obvious cases where that is true, then I think it would strengthen the policy if we go ahead and put the statutory citation in there, and leave the "shall" in place if it's already there or change it to "shall" if there is a "should" there.

MR. PUGLIESE: Yes, what I can do is go ahead and change those, but then check in directly with Habitat Conservation, because I think a couple of these were left. There may be one like that one that may be very specifically to it. If that is appropriate, if there is a citation we can add then I can check with Monica and make sure that that is appropriate. Otherwise, we'll change them back.

MR. PHILLIPS: Just a question on the "shall" or "should" require the development of resource sensitivity training modules. Is that new or is that something that is done in other places? We've got a detailed permit. You've got monitoring and you've asked for third party oversight. I'm wondering if this is something totally new or what?

MR. PUGLIESE: Yes, I'm almost positive this is directly from the last iterations we got with input from Habitat Conservation. I think this ties to probably what is presently being looked at or envisioned for any of the review that is happening for any of those permits; because the core of any of these significant updates came from Habitat Conservation. I can't imagine them going way far outside of the scope of what the activities are going to be needed at this point.

MR. PHILLIPS: It just said development, so I'm thinking, who is going to develop it and anyway, it just seemed a bit of a stretch.

MR. BREWER: Roger, with regard to open loop, close loop LNG, are you aware of any open loop plants within our area; because if there are any, I would like to know about them. I think most of those have been shelved; even the closed loop stuff, I think, has been shelved, because of the change with regard to energy and natural gas in the United States. If there is one plan, I would really like to know about it.

MR. PUGLIESE: Yes, and the answer to that; as far as I know, there are no open loops being proposed. I think this is a carryover from previously when this had been discussed. You're right that I think it goes even beyond that at this stage; that the LNG facilities - if anything, they're kind of flipping around and looking at sending material out.

But I think it was retained because this is a policy for the long term, in case anybody thinks about trying to do something. I think that was like the most damaging potential one, so that was kept in the queue. But no, as far as I know, there is nothing in the works anywhere.

MR. BELL: We're going to get in the weeds on this. Number 17, where it talks about license and permits required for project-related work vessels, and it has statements in there about equipment such as tow line should be secured during transit. When you say tow line to me, the tow line is a line that a vessel might use to tow another vessel; but I guess you're talking about towed sensors? I just find 17 kind of confusing.

MR. PUGLIESE: Yes, I think that may have been more almost generic in terms of tow lines for vessels or tow lines for – essentially not to be dragging any lines when you're coming across habitat areas. If that is too generic, this is a council policy, this is the time to –

MR. BELL: Well, I just wasn't really sure what you were trying to affect. The idea is not to drag things along the bottom; was that what you were trying to say there?

MR. PUGLIESE: I think the bottom line is not have any trailing lines as the vessel is going across any kind of that bottom habitat area, where they could either fall to the bottom or somehow impact it.

MR. HAYMANS: Any other questions?

MR. CONKLIN: I'm not on the committee, but it seems to me, the tow line would be where they tow the air gun with, is that what we were sort of thinking about?

MR. PUGLIESE: That's one of them. I think that is probably the biggest and the heaviest out of any ones that are used.

MR. CONKLIN: We could do nets and doors out of the water.

MR. HAYMANS: Any other questions? Okay, we have an action to accept this document as presented, but we do have a little bit of editorial cleanup to do. The question is Wilson's.

DR. LANEY: I was going to make a motion, Mr. Chairman, if that's appropriate.

MR. HAYMANS: Let me finish what I was saying for just a moment, and that is if we're comfortable with the amount of cleanup that needs to be done, the "shall", the "should", the checking of the authority on a couple of these; whether it can say "shall" or not. If everybody is comfortable with that, then we can go ahead and approve. I'll remind the committee, besides Wilson and myself, is Mel, Chester, Jack, Jessica, Charlie, Robert and Lieutenant Pray. I would entertain a motion.

DR. LANEY: Thank you, Mr. Chairman. I would move that we accept the revised Energy Policy as edited in this meeting and also give editorial discretion to staff to deal with the "shalls" and "should" as appropriate.

DR. LANEY: We'll give Roger a moment to capture that. The motion is as worded; to approve the redrafted South Atlantic Fishery Management Council Essential Fish Habitat Policy on Energy Exploration and Development.

MR. HAYMANS: Is there a second? Jack. Any additional discussion?

MR. BELL: I would just suggest in fixing some of this, we make 17 a little clearer about, if you don't want things dragging across habitat. We'll say that; because if you tell me to secure my tow line, that means I'm going to secure my tow line on deck. I would just fix that as well.

MR. HAYMANS: Accept that as direction to staff to clean that portion.

MR. PHILLIPS: Maybe something, a little asterisk or something on 21 on who would be developing the resource training or something like that.

MR. PUGLIESE: That's fine. What I'll do is double check with Pace and the Habitat Conservation to see the original origin of if that is tied to any specific group that would be doing it. I'll make sure I do that before Full Council.

MR. HAYMANS: Any additional discussion? Is there any opposition to the motion? Seeing none; that motion is approved. That makes two policies accepted so far? More than that?

MR. PUGLIESE: Actually, this is the last of the original policies, so all the way through, we have the newer policies on artificial reef that are being developed and then ones that will be tied to climate and food webs into the future.

MR. HAYMANS: I must have been absent for those meetings. Okay, moving on; FEP II update.

MR. PUGLIESE: A matter of time, I would like to just kind of highlight where we stand with activities. Basically, the writing teams for habitat threats, protected resources, anadromous/catadromous species and more recently, writing teams for climate variability in fisheries and food web and connectivity were held; so all those groups are in process of reviewing existing materials. There is the entire facilitated process through webinars and integration of online systems for base cap and Google documents.

The entire activity of developing those systems is ongoing with preliminary drafts anticipated in February, advancing into June of next year. What I would like to highlight is the two most recent activities. The Climate Variability and Fisheries Writing Team in-person meeting we just held is facilitated, also. But we went in with a blank sheet. A lot of motivated people that were participating, either at the meeting and even had a number, that weren't able to get there but still were able to provide significant input during and then even after that to go from a baseline to extensive outlines for both the climate variability and fisheries, as well as food web and connectivity; with writing team assignments. Everything is in process with, again, that moving forward with the developing the first preliminary review. I think the one draft has like about a 12 or 13 page outline already with everything connected to council activities.

I think that was one of the big aspects of both of these groups is that it is very much tied to and focused on how that information is going to translate to council-managed species, habitats and tools. I think that we're going to see a lot of work to really focus at having, say, on the food web and connectivity, Marcel Reichert directly involved in that process, and focusing on how that can be integrated in the SSC was really critical.

Continuing that into the climate discussions was also pretty critical. Those are advancing, everything is moving forward. Other activities on non-council species are going to be coordinated through ASMFCs activities with Lisa Havel who sits on the Habitat AP, as well as initiating a couple of other core species activities.

One of the newer things that is happening with that is after deliberations at the last meeting, we sat down and talked about the possibility of maybe connecting not only the update but the potential of expanding and refining our online ecospecies system. The intent of developing that was that it was actually going to provide input directly into, say, data workshops.

With the help of Marcel, Luis and others, we may actually connect that to some of those species discussions where it's going to be a hands-on training of how to use the system to ultimately have it so that it actually is going to inform the data workshops and be able to be updated after a stock assessment, ultimately making that a tool that connects directly into the assessment process.

That is a developing side to make something more real instead of just a bunch of new paper. I think that is a real advantage. One of the other things we're trying to also do in conjunction with that is a mapping strategy effort to engage individuals from our SEAMAP bottom mapping species characterization workgroup.

Expand that to some of the people that are doing more on active mapping efforts in the southeast to come up with an entire review of available technologies, capabilities for processing and tie it to major corridors of habitat distribution and managed areas. We would really provide that foundation on how to do everything from engaging ongoing NOAA vessels that are transiting to taking new technologies; and how those could actually advance any of the filling in of our mapping efforts and characterization efforts in the region.

That is also something that we'll be developing in 2016. Some of the coordination jumping past coordination with SECOORA, Ocean Observing Association, and the proposals that had been submitted are tied directly to characterizing efforts of physical characterization of managed areas. Beginning to try to actively provide footprints of, say, some of our individual marine protected areas, deepwater coral HAPCs; starting to build those physical parameters.

One of the first things you'll see in the spawning SMZ discussion are some baseline footprints of at least characterization of areas. The intent of the new proposal is to take those to a whole different level, also to provide refined information for potential use in subsequent stock assessments; building parameters that could be looked at in temperature or other base type of things. Those are already integrated into the 2016 to 2020 proposal for a review and potential use. I think fisheries are being elevated at a higher level and operational use of the Ocean Observing system.

On the Landscape Conservation Cooperative side, the funding is mentioned in a number of other meetings for the ecosystem modeling being processed, and we're going to be advancing that even further and getting the baseline ecopath/ecosim model, as well as test bed and connection into estuarine models and the oceanographic models I just previously mentioned.

We have kind of a connection of multiple activities advancing at one time. That is going to kick up a lot more activity within the next couple months, in the first part of 2016. It is funded through two years, but there is going to be an effort to advance; to even get to a future generation modeling if we can get that funding in advance, to make sure that there is an entire ecosystem modeling suite developed.

That is what the real intent of that effort is. One final thing is to advance some of the discussions we're having on technologies and even potential private investments. We've had discussions about, potentially in June, having a technology session to be able to highlight some of the newest advances; bring industry in to provide some of that type of capability, as well as some specific foundation representation on private investment into ecosystem or conservation efforts and kind of bringing that together and highlighting.

As part of that, we may actually see some test beds of some of those tools in advance of that meeting, if we can have it done on either a mapped area or use of a new multibeam, or a new technology. That would be the ideal situation if we can get that accomplished - the last point connected to this whole thing.

I had the opportunity - there was an Oceans Forum 2015 supported by ESRI, which is pretty much the biggest leader on mapping in the country right now. They are going pretty much all in on the ocean side of the world; on a world level, building connections of all types of parameters from the ocean.

It actually connects into land-based systems. We are heavily invested in use of ESRI with our partners with FWRI, serving all of our ArcGIS server systems. What we're probably going to try to make realized is that a jump to ArcGIS online systems, so that they can connect with all of our partners; the Landscape Conservation Cooperative, the individual States.

Build these systems so they can talk very easily together. I had a chance to sit down with the chief scientist, Don Wright, with the SRI at that meeting, and I had some commitment to be able to. We may be building an enterprise system, which is similar to what is being provided to universities. But that would provide us direct links to the states, direct links to our partners; and then the whole move to our ArcGIS online capability.

That could really advance the entire use of our system and the foundational information on habitat species, and fishery operations coming out of one site and being used appropriately in all of our different partner areas. That is a pretty exciting opportunity. Also, we got commitment that as they build their world system, the South Atlantic may be one of the regional test beds to advance that down to a fine resolution to consume multibeam individual species information, et cetera. There are a lot of things moving that are going to support our move toward ecosystem-based management and the broader conservation effort among multiple partners in our region. That is the context of the entire fishery ecosystem activities, FEP and associated activities.

MR. HAYMANS: Can you remind us of the anticipated completion date for the FEP, and where you are on track?

MR. PUGLIESE: The full completion is anticipated at the end of 2016. What we're trying to do is get as much drafted early. We're getting realistic timeframes or actually advanced timeframes. A lot of it will be in advance of June of this year; however, some of the other nonrelated sections are going to happen later. Some of that may be tempered with the discussion about trying to use other techniques, such as using ecospecies or different things like that that might advance that faster. The bottom line is the end of 2016, the core of it by June; hopefully.

MR. HAYMANS: Any additional questions?

DR. DUVAL: I'm not on your committee, but Roger, my ears just kind of perked up when you mentioned, I guess, the SECOORA proposal looking at incorporating variables into stock assessments. That is a proposal to be submitted or that's underway? Then the second part of that question is, has there been any conversation with assessment scientists in the region and Bonnie's shop to bring them into that conversation?

MR. PUGLIESE: Yes. It is kind of twofold. It is the proposal from the Organization, so like we submit for our proposal for council operations, this is proposal operations for SECOORA itself, with their individual partners. That is submitted, but it is the foundational activities. Some of those ties are not very detailed yet.

However, the real tie is the fact that the individuals in the proposal, which is directly agreeing here with North Carolina State University, is also connected directly to the LCC ecosystem modeling efforts. Those tools crossover there about building the oceanographic input parameters are connecting directly into that ecosystem modeling work. That is something that is directly being guided by the SSC with Marcel, Luis and a number of members from our SSC on how those different levels of capabilities are happening.

A lot of this discussion also happened at the food web and connectivity workgroup or writing team; because one of the things that can happen in that section is going to be a whole review of present activities for stock assessment, the single species stock assessment and that evaluation of how then you would be able to see and potentially use some of these to investigate single species stock assessments.

There is some very direct discussion that is going to happen in that section that is going to advance that discussion specifically. It is being funded to be able to advance some of these for different areas; with that providing, I think, some opportunity to focus on how tools can be developed, what is going to be appropriate to advance that.

The one thing that really helped was also having Jason Link talk about what he envisioned of how to move that forward in informing single species assessments. He is directly involved in some of the discussions we're having there. Of course, I think as we proceed further, directly, and then the steps on how we work with the Center, what are going to be appropriate. I think those are going to be some natural connections with the next steps of these processes.

MR. HAYMANS: Any additional questions? Next is going to be a report on Lenfest, and Roger, I'll let you introduce our speaker.

MR. PUGLIESE: Yes, we have Phil Levin with the National Marine Fisheries Service, Northwest Fisheries Science Center; who is the co-Chair of the Lenfest Fisheries and Ecosystem Task Force of which Michelle sits on as an advisory panel member for that group. They have been working to provide foundational information; how to advance fishery ecosystem plans from concept to functional components, to advise and advance council's move toward ecosystem-based management. With that, I'll hand it over to Phil.

DR. LEVIN: I'm Phil. Thanks for having me here. It is great to be here, actually. I met my wife two miles from here while I was chasing gag, so it's really good to be here. What I thought I would do is really give you a sort of 30,000 foot view of some of our activities. We're at this point now where we've done a lot of thinking.

We're starting to do a lot of writing. We're kind of looking more for a dialogue. I am not in a position to tell you anything, really, I'm more about hearing from you about what we can do for you. What would be helpful for us to produce that would help your FEP process? But in the course of doing that, I'll just tell you what you shall do, I mean should.

As Roger said, I'm a co-Chair of this thing and the Chair is Tim Essington from the University of Washington. There are a bunch of people on this. Here they are, if you care. Here are some things to know about, just broad brush is that the task force is largely, well it's all academics except me, and NMFS very rarely claims me so maybe I'm over there too.

Then we have an advisory panel, which is composed of members from different councils around the country, as well as the three senior science folks from NOAA; so Rick, who you talked to earlier, Jason and Doug Lipton. What we were charged with is really focused around four main topics. What are the key principals of ecosystem-based fisheries management that should be included in FEPs?

What is sort of essentially the current status and is incorporating those principals? Where are the gaps, and how can we fill those gaps? It is pretty straightforward. What I thought I would do today is highlight three areas that we've been focused on in the task force. First of all, why bother with FEPs?

Secondly, as we looked around the country, and we've spoken now to about 60 people from councils, council staff and stakeholders about kind of where they see the strengths and weaknesses of different FEPs around the country; so what are some of the lessons learned? Then a little bit about implementing FEPs, so where are some tools and strategies for moving forward.

Why bother? Part of that is - one of the things that I sort of feel like sitting in my NMFS office, and I've heard others say the same thing. We kind of already do EBFM, so why do we need to go through this whole effort? We figure, well, why don't we just look? The first thing we did is say, to what degree is ecosystem information accounted for within single species management already? What factors might be included and which ones might be missing? It is essentially an analysis of what is going on with EBFM within the existing FMPs. What we did was read and analyze every stock assessment that has been done in the country. I did not do that.

I'm not sure the person who did that actually ever recovered. Here is some sort of basic things that we've found out. In this figure, each one of these bars represents – I'm not sure how well this shows up – represents different areas of EBFM. The first one is basically bycatch of target species. You're going after one species; you have bycatch of another targeted species.

The second is bycatch of other stuff, so this is largely protected species. Then as you go from the bottom up we're going from descriptive information to sort of semi-quantitative information to full on quantitative information that is in the model. What you see here is that if we're talking about bycatch of other targeted species, there is overall about 60 percent of assessments across the country include that information.

Much of that is in quantitative form included in the stock assessment model itself. When we talk about protected species, again about 40 percent of the assessments consider protected species, but most of those are essentially in descriptive form. The next part is habitat. You see something similar, where we get up to above 80 percent of the assessments have some inclusion of habitat information in that.

But again, very few of that is quantitative in the model. Most of this is just description in the assessment itself. I should point out that almost all these are from the South Atlantic; in case you're wondering. The South Atlantic is pretty much the strongest in terms of habitat information.

Climate, you see something similar. Then we have diet, predation and finally competition. The point here is just to say, there is a lot of ecosystem information, a surprising amount of information in single species stock assessments. It is not like the councils or NMFS is ignoring this. The tendency is to have most of this as sort of a descriptive form, but still there is quite a bit.

In these figures what I'm doing is showing the same information in a different way, and the way you read these figures is the higher up you go, the sort of top of these figures is in the assessment model. The bottom is descriptive so the shape of this sort of tells you how much quantitative versus descriptive information there is.

For example, in this particular shape here there is very little in this habitat information. Quantitative, most of it is sort of in the middle. This is for species that are not overfished. You go to the right side and you see overfished. The idea we're asking is, if you go through this and say well, if we look at overfished versus not overfished species is there a difference?

Yes there is, especially like if you look at the climate information. Typically, the worse off the stock is the more likely we are to get ecosystem information in there. In this figure over here it is something similar. This is just to highlight that basically a lot of this happens to do with historical accidents around the country. For example, the Northeast Center has a very strong diet program. Alaska Center has a very strong diet program; my center, not so much. If you look at that and you say, well who has historically worked on diets. We know who that is. You say all right if they tend to work on diets, guess what predator/prey stuff ends up in their stock assessments. If your center happens to have strength in habitat, you end up with a bunch of habitat in your assessments. Some of this is just historical accident, and it kind of makes sense.



Having done that; okay we realize well, there are a lot of strengths and we are doing a lot of good work in EBFM, but there are still barriers. This is just the beginning of a list of barriers that people have suggested to us. I would say the biggest one that we hear over and over again is that councils are busy, staff is tapped out, science centers are busy and tapped out, and there is just not a lot of bandwidth.

A lot of people seem to think that fisheries ecosystem plans are going to be like some kind of silver bullet to solve all these problems of implementing, and overcome barriers to EBFM; so I'm here to tell you that they're not. I think they'll help with some of these barriers. But it is not the be all and end all. The barriers are real.

We're going to have to work to overcome them. FEPs can help in some ways. The reason why they can help is because we have well established principals that exist for ecosystem-based fisheries management. Ideally, some of these EBFM hurdles could be surmountable through FEPs if we can get FEPs to support streamlined management.

Where that can happen, I think that will be useful. If we can think about multi-objective decisions, so decisions that cross FMPs in particular in a really organized and systematic way; I think FEPs are going to help there. FEPs, we think, can also help industry in terms of thinking about stability of landings over time and basically thinking about ways to develop long term planning to have a more stable industry.

What will we include in an FEP to achieve these sorts of aims? One of the things I think that is different about the way we're approaching this is, we've sort of given up thinking about the ecosystem as the ecosystem. We are instead calling it a fishery system. When we think about FEPs we're not thinking about just predator/prey habitat.

We're thinking about also the human dimension side of this. Essentially what we're doing is rolling in all the National Standard 8 stuff into FEP. We have two major endpoints. We have endpoints which are around the fish and the fisheries, but also human wellbeing. How do you maintain ecological integrity while ensuring human wellbeing; where human wellbeing means economic, social and cultural aspects, depending on where in the country you are?

I think from us a part of what we're doing is really focusing on tradeoffs, but tradeoffs across the whole dimension. Humans, in every NMFS document we have it says humans are part of the ecosystem. What we're doing here is explicitly saying; therefore, a lot of the human dimension stuff is part of the FEP.

In sort of the Generation II, GII of FEPs, and we're sort of saying that because many of the councils, as you know, have already developed their first iteration of FEPs. Our review of these suggests that the single highest priority shall be or should be to move FEPs from a peer description of the ecosystem to something that is actionable by councils, whatever the councils want that action to be. To do that it is important that FEPs are aspirational, so that they try to achieve some of these goals which we outlined earlier that they're actionable, so something could be done with them; that they're parsimonious. When we look at FEPs around the country, there is sort of a tendency to go for analysis by paralysis, so some of the FEPs are incredibly long and detailed but don't have a lot of actionable information in them.

Part of that is because a lot of FEPs, a lot of the fisheries ecosystem plans aren't actually plans. They are just sort of descriptions. What we're suggesting is that, in general, it would behoove folks to think about FEPs as a traditional planning process. What that would mean is that you would take an inventory of the system itself.

That means the description of the system - what are the key components of the system, and also, what are the major rifts facing those key components? It is something that a lot of the councils have already been actively engaged in. Where we see a weakness, I would say across the country generally, is the lack of a strategic vision or conceptual or even operational objectives about ecosystem concepts.

What is it you want the FEP to do? What is it you want your ecosystem to do? Without that being clearly articulated, it is hard to measure the performance of your plan, right? What are you trying to achieve? Once those operational objectives are developed, you can implement this plan and then evaluate and adapt over time.

We view this as sort of a strategic - well, it is kind of a five-to-ten year cycle, but within that there is a much more active cycle that occurs over a shorter timeframe, where you would identify management rules and responses. These are basically saying, okay here is what we want our ecosystem to be. How are we going to do that?

This includes figuring out; what do we want to do given the state of the ecosystem? What are management alternatives to get there? What are performance indicators and reference points that we might choose to monitor in order to develop actions; in case we breach some floor for example, and then we would evaluate and adjust.

The idea here is that this is a more active loop that is a tactical loop that occurs within sort of the longer strategic cycle. Then the final thing I'll mention is this idea of implementation, which is really about tools and management instruments for implementing an FEP. One of the things we already know and Roger alluded to this, is we have a pretty good tool box now for our ecosystem-based fisheries management.

There is no shortage of tools out there. One of the things we see, though, is sort of a lack of a framework for selecting the right tool for various jobs. There are lots of tools, and what happens is, people say the Science Center has this; we're going to just use this because we have it. It doesn't matter if it's the right tool, it is a paid tool. This has led to, I think, a number of problems.

You can't see this and you weren't meant to, so this is the only thing that you can't see that I didn't want you to see. What we're trying to do now is to develop essentially a flow chart that will help people choose among the many ecosystem tools that are out there. What is the right tool for the job? We're sort of going through a process of trying to put this together, because we think this will help people. It is not going to be an inventory of all the possible tools that are out there. There are lots of different inventories that are available for folks to look at; but more almost a guidance to SSCs about what are the right tools for the job. Then on top of that, we're developing essentially a guide for councils, which are questions that you should ask your SSCs when you're evaluating what you're getting from them.

The other thing we've heard and we're developing is a sort of idea that there are a lot of policy instruments out there, management tools that could be used to implement EBFM. When you go around the country, what you hear a lot is, we don't like EBFM because we don't like MPAs, which is fine. EBFM and MPAs are different.

What we are trying to do is highlight how existing policy instruments that are already being used in the U.S. or elsewhere could be used to achieve council aims. If the council has ideas about where they would want to go, they don't want MPAs, but they do want to, say, achieve some goal. What we'll try to do is lay out what different councils have done and where they've been successful in operationalizing some ecosystem policy.

The idea is to exchange and share information in this sense. It is not about developing new tools or new ideas; it is just repurposing some different things. The idea is, look you have FMPs that is where management happens and within FEPs you do things. Those can be adapted to achieve ecosystem aims, if you so choose.

We just want to provide some roadmaps to help people visualize how that might be. We are now in the process of really crafting specific recommendations for FEPs. I'm not going to tell you any of them now, because they are too vague and not well cooked. But what I will say is they are going to focus on action - again, moving from description to action.

The task force is very much about step-wise deliberate implementation of EBFMs, so I'm not expecting that we're going to have anything that is really revolutionary, but it is really about evolution. Again, they are going to be pushing folks to be aspirational and ambitious but also realistic. I'll stop there and I'm happy to take questions or eat lunch.

MR. HAYMANS: I'll start with one, if I may. How does the new NMFS policy fit in to what you're telling us here?

DR. LEVIN: We've been working closely with Jason and his group as we've moved forward, and essentially, what they've done is leave a gap for us to fill in. We've been communicating back and forth. Everything that we're saying is completely compatible with the EBFM roadmap, which I also contributed to; that is one of the benefits of having a NMFS guy on this thing. But the roadmap does not provide a lot of details about the FEPs themselves, so there are essentially placeholders in the roadmap, and what we're doing is fleshing out those placeholders.

MR. BOWEN: I'm not on your committee, but you touched base on something along the lines of other councils or other regions where they're using EBFMs. Can you give me an example?

DR. LEVIN: Sure. Let me think of a good example, can you ask me a more specific question, and then I won't ramble on?

MR. BOWEN: I don't mind if you ramble; just an example.

DR. LEVIN: Sure, a simple thing is in the North Pacific, where there is a cap on the total biomass of groundfish taken. It is a straightforward - we consider this to be an EBFM policy,

because it is really about the total biomass and the total prey removed from the system. That is a simple one.

There are lots of stuff in my system, thinking about the relationship between temperature and productivity, and so for sardines there are control rules set up that are around temperature; for example. Folks in the Mid-Atlantic are starting to think, this has not been implemented but they are starting to think very carefully about climate change, and sort of shifting ranges and how to deal with that.

Let me think of some other ones. I can keep going if you want, and I would say, frankly, a lot of the stuff in the Gulf and the Southeast that focus on habitat very much falls into that. I think within councils and within NMFS, we tend to have these stovepipes between habitat and ecosystem stuff, but really, they are one and the same.

I would say sort of the stuff I've mentioned before where there is all sort of ecosystem information included in stock assessments, is also an example. I would say most of the examples tend to be what we would call ecosystem approaches to management; that is where you have ecosystem information that you want to include into a single species assessment.

You want to say okay, here is harmful algae blooms for example in the Gulf, which are being used within a gag assessment, or here is climate affecting sardines and this sort of thing. What we see less of, and I think there are opportunities for more growth, is where you have two species that are both managed that are interacting together. What you take of one species is going to affect what's happening with that other species; so you have a predator/prey relationship or a competitive relationship.

The other place where this comes up is around protected species issues as well, which again is sort of the classic cases in the North Pacific with pollock and Steller sea lion. Where you have as the hypothesis anyway is that fishing pollock has an impact on a protected species, and so what do we need to do around that in order to assure that ESA things are taken care of and that we prosecute a healthy and sustainable fishery?

DR. DUVAL: Thanks, Phil, it is great to see you back on this coast. Phil was a post doc down here when I was in Grad school; but he stayed locked up in his office all the time, so we didn't really see him that much.

DR. LEVIN: That's not true, I was in Meadow Marsh.

DR. DUVAL: Okay, so you were having more fun than I was.

DR. LEVIN: Yes.

DR. DUVAL: I was just wondering if you could let folks around the table know the expected completion. We're kind of wrapping things up in the first half of 2016, right?

DR. LEVIN: Yes, so we are basically in a drafting phase right now. We will have that together within the next few months. There will be a review period and then we expect a rollout of the final product in the summer.

MR. HAYMANS: I feel quite confident, because you have such a close relationship that our FEP II is in line with all the recommendations coming out of Lenfest, right?

DR. LEVIN: Of course.

MR. HAYMANS: Okay, any other questions? Thank you for a wonderful presentation, I appreciate it. Oh, did I see a question?

DR. DUVAL: It was really just more of a comment. It's been really enriching for me to be involved with the taskforce on the advisory panel. I've learned a lot about what has occurred internationally and other places with the use of EBFM, and I think there is some great opportunity for us to bring some of those tools to bear into our process here.

I would hope that it has been an equally educational experience for the task force members, who are the ones doing the really heavy lifting in terms of all the technical aspects of this about some of the challenges that we face on the management end of the stick. I've really appreciated everything you and Tim have been doing and the opportunity to participate in that.

DR. LEVIN: Thank you, the feeling is mutual. Please feel free to grab me around in a bar or whatever if you have comments or questions, or e-mail me. Happy to hear from you and we could use all the feedback we can get.

MR. HAYMANS: I don't believe there are any actionable items for the FEP, right? Are there any additional items to come before this committee?

MR. PUGLIESE: Just a related footnote. On the climate science strategy, there is a next step that is going to involve development and implementation at the regional level, and Bonnie's office and the Region is tasked with doing that. We have been discussing directly with them how to integrate that into the process, and we had the climate strategy.

Mandy Karnauskas is part of that group, so we're already having that communication on how to advance both at the same time. The idea is that if we can get the South Atlantic portion at least, if not the whole thing, integrated into the ecosystem plan, then that will advance all of our efforts simultaneously.

MR. HAYMANS: Wilson, are you good? Okay, well then, Madam Chair, I will yield back 55 minutes of our time; hopefully, to good use and this committee is adjourned.

(Whereupon the meeting was adjourned at 11:05 o'clock a.m., December 8, 2015.)

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**South Atlantic Fishery Management Council –  
December 2015 Council Meeting  
Atlantic Beach, NC**

**Date:** Tuesday, December 8, 2015

**Committee:** *Habitat Protection & Ecosystem-Based Management*

**PLEASE SIGN IN -**

*In order to have a record of your attendance at each meeting and your name included in the minutes, we ask that you sign this sheet for the meeting shown above.*

Name:	Mailing Address/E-mail: <i>(If your information is currently on file, please check the box.)</i>	How do you participate in South Atlantic fisheries? <i>(Check all that apply)</i>	
Colby Schmitt	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input checked="" type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
Chris Ellen H...	<input type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input checked="" type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
Lora Clark	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
David Bush	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
Gary Zorn	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
SICK BAME	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>

**South Atlantic Fishery Management Council  
4055 Faber Place Drive, Suite 201  
Charleston, SC 29405**



**South Atlantic Fishery Management Council –  
December 2015 Council Meeting  
Atlantic Beach, NC**

**Date:** Tuesday, December 8, 2015

**Committee:** *Habitat Protection & Ecosystem-Based Management*

**PLEASE SIGN IN -**

*In order to have a record of your attendance at each meeting and your name included in the minutes, we ask that you sign this sheet for the meeting shown above.*

Name:	Mailing Address/E-mail: <i>(If your information is currently on file, please check the box.)</i>	How do you participate in South Atlantic fisheries? <i>(Check all that apply)</i>	
Ingrid Biedron	<input type="checkbox"/> On File  <i>ibiedron@oceana.org</i>	Commercial <input type="checkbox"/>	NGO <input checked="" type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
MICHAEL MASTRIANN <i>USCG</i>	<input checked="" type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input checked="" type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
Phillip Leun	<input type="checkbox"/> On File  <i>phil.leun@noaa.gov</i> <i>NMFS Northwest Fisheries Sci Ctr</i>	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
	<input type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
	<input type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>
	<input type="checkbox"/> On File	Commercial <input type="checkbox"/>	NGO <input type="checkbox"/>
		Recreational <input type="checkbox"/>	Govt. <input type="checkbox"/>
		Charter/For-hire <input type="checkbox"/>	Other _____ <i>Describe</i>

**South Atlantic Fishery Management Council  
4055 Faber Place Drive, Suite 201  
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# Council Mtg Day 2

8 Dec 15

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