SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

CORAL ADVISORY PANEL MEETING

Hilton Garden Inn
North Charleston, South Carolina

October 25-16, 2011

Summary Minutes

Coral AP:

Stephen Blair, Chair
Roland Ferry
Dr. Sandra Brooke
Kimberly Puglise
Dr. Steve Ross
Dr. Kenneth Banks
Kate Semon
Andy Shepard
Dr. David Gilliam
Jocelyn Karazsia
John Cramer
Greg McFall
Ken Nedimyer
Dr. Robert Van Dolah

Council Members:

Duane Harris
Dr. Wilson Laney

Council Staff:

Gregg Waugh
Myra Brouwer
Julie O'Dell
Anna Martin
Dr. Kari MacLauchlin

Observers/Participants:

Lt. Brandon Fisher
Andy David

Additional Observers Attached

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The Coral Advisory Panel of the South Atlantic Fishery Management Council convened in the Hilton Garden Inn, North Charleston, South Carolina, Tuesday morning, October 25, 2011, and was called to order at 8:30 o'clock a.m. by Chairman Steve Blair.

MR. BLAIR: My name is Steve Blair. I am with the Miami-Dade Department of Environmental Resources Management, or at least that is what they use to call us, and presently serve as the Chair of the Advisory Panel. I want to welcome everybody. I'm glad everyone was able to make it.

I think we have a very good agenda today of a lot of updates on the deepwater coral information, as well as a number of research updates and a number of topics that we will want to have some pretty good discussions on over the next day and a half. What I would like to do is first ask Anna if she wants to kind of give us some general kind of housekeeping and background rules for the day.

MS. MARTIN: Rules, we don't have very many, but I did want to just remind you all – I know it has been awhile since the AP has convened. Our transcriber, Joe, is not with us so he asked that everyone just state their name for the record so he won't have to go through a lot of digging and harassing me, primarily for names for the record purposes. We would appreciate that. It is good to have everyone here. Thank you for being here.

MR. BLAIR: Okay, a couple things to be sure we have had some changes to the agenda, so the most recent copy of the agenda is on the side. Please make sure that you do have a copy of it so that you can see the final order. Hopefully if you are giving a presentation you won't be too surprised by where your name appears on it.

There is also a sign-in sheet over there that over the course of the day please make sure that you do sign the sheet. Again, welcome to everybody. There are a few new faces around, and what I would like to do is kind of just start off with everyone giving an introduction and stating their name, who they are with and their expertise they bring to the table in association with the Coral AP program, and, Bob, do you want to start it off?

DR. VAN DOLAH: I am Bob Van Dolah. I am with the South Carolina Department of Natural Resources, Marine Resources Research Institute. I have been on the Coral AP for a number of years. I'm not doing any current research on corals but very familiar with the subject area.

MR. McFALL: Gregg McFall. I am the Deputy Superintendent and Research Coordinator for Grays Reef National Marine Sanctuary out of Savannah, Georgia.

DR. FEDDERN: Henry Feddern, Marine Life Fishermen. I have been diving in South Florida since 1956. I'm president of Florida Marine Life Association, PhD in Marine Biology, University of Miami.

MR. CRAMER: Jeff Cramer. I am a commercial fisherman down in the Florida Keys. My coral background, I have fished around it my whole life. I am on the Florida Keys National Marine Sanctuary Advisory Council; state vice-president Organized Fishermen of Florida,

Florida Keys Commercial Fishermen's Association. I am not a scientist but I can maybe bridge that gap a little bit between the fishermen and the scientists. I do a lot of cooperative research with Florida Fishing and Wildlife Conservation Commission in my fisheries.

MS. KARAZSIA: Good morning. Jocelyn Karazsia, NOAA Fisheries Southeast Region. One of my responsibilities is in implementing the essential fish habitat provisions of the Magnuson-Stevens Act.

MS. MARTIN: I'm Anna Martin, council staff, and I used to work with Bob Van Dolah at South Carolina Department of Natural Resources, but I have been on board with the council for a couple of years now and was working in a previous capacity during your last AP meeting, working with Kim Iverson in the education and outreach side of things. I am now coordinating the council's Ecosystem Amendment and serving as the liaison between the Coral AP and our council specifically as that pertains to deepwater coral management.

DR. ROSS: I'm Steve Ross. I am a research professor at the University of North Carolina in Wilmington. I have been on the Coral AP for a number of years and I have been conducting deep sea coral research for about the last 10 years in the Gulf of Mexico and off the Southeastern U.S. I am a fisheries biologist by expertise, and I was a budding coral biologist but I will explain how I have slipped from that.

MR. BLAIR: Again, my name is Steve Blair with the Miami-Dade Department of Environmental Resources Management. I have been with the council a number of years as well. My background in coral and marine sciences was through initial research in deepwater marine algae and then into study of the nearshore coral reef system off of Southeast Florida and Miami-Dade specifically. Presently we are responsible for most of the coastal habitat monitoring conducted by our government and inclusive of those areas.

DR. GILLIAM: Good morning. I'm Dave Gilliam. I am with the Nova Southeastern University Oceanographic Center and National Coral Reef Institute in Fort Lauderdale, Florida. I am a shallow water guy, shallow water reefs; generally in Southeast Florida, so I am working the Keys and some outside of Florida, mostly reef restoration monitoring assessments. I work a lot with the local agencies, county, state and the federal in Southeast Florida. I have been on the panel a number of years, currently the Vice-Chair.

MR. SHEPARD: I'm Andy Shepard. I am with the University of North Carolina at Wilmington. I was with the National Undersea Research Program for 22 years. With that program, we did a lot of coral reef research, especially in the Florida Keys, but also on deep reefs throughout the southeast. Now I am Associate Director for the Cooperative Institute for Ocean Exploration, Research and Technology. We still continue to support deep coral reef and shallow coral reef work.

MS. PUGLISE: Kimberly Puglise with NOAA Center for Sponsor Coast to Ocean Research. I manage their mesophotic coral ecosystems programs. Previously I was also with NOAA's Undersea Research Program and I coordinated their deep coral and shallow coral work.

DR. BANKS: I'm Ken Banks with Broward County Natural Resources. I have to remember the name. I can't, but I manage marine resources programs. I am sort of Steve Blair's analog in the county north, of Southeast Florida.

MS. SEMON-LUNZ-LUNZ: I am Kate Semon Lunz now; I am with Florida Fish and Wildlife Research Institute. I am the associate research scientist for the corals program. I am the project manager for a NOAA funded acropora monitoring project and across the Keys, Puerto Rico, U.S. Virgin Islands. We also work with UNCW. Formerly I was with the Smithsonian and my PhD is also from the University of Miami. Most of my expertise is in shallow water corals.

DR. BROOKE: Sandra Brooke, Marine Conservation Institute. I have been working on deep and shallow corals for more years than I care to count, since '97, I think; primarily working on deep corals in recent years, Southeastern U.S., Gulf of Mexico, Alaska, Norway, wherever they happen to grow and I can get funding for. I have been on the Coral AP since 2002, I think.

MR. BLAIR: I just wanted to make a comment. One of the aspects of the AP and the purpose of the AP and how the council has them established is to bring all the entities that are users and with knowledge and expertise, regardless of whether that is scientific or real life aspects of it, because it is the integration of that that we are seeking to be able to accomplish in order to be able to sustain fisheries and maintain the economic benefits of those fisheries both to the people as well as the ecological role that they play.

We are kind of all in this together and we all have our own expertise that we bring and look forward to seeing that being applied as we continue today. The first action item is approval of the agenda. Now is the time for you people that suddenly find your names somewhere else can object. We appreciate everybody's willingness to be flexible in this. It has been with schedule changes and so forth, and it has caused some changes to occur, and I appreciate Anna handling that very much. Are there any changes or request for modifications to the agenda?

DR. BROOKE: My surveillance talk isn't actually finished yet; so if I can get it finished over lunchtime I would be happy to give it today; if not, then I might like to shift it to tomorrow morning.

MR. BLAIR: That would be fine. It can go to tomorrow without a problem, so there is no issue with that and if you would like we will just state that. Do you just want to move it to tomorrow or do you want to touch base after lunch?

DR. BROOKE: We can touch base on it later.

MR. BLAIR: Okay, any other requests?

MS. MARTIN: Steve, if I could just recognize a couple of other folks that are here with us today. We have got two of our council members, Duane Harris and Wilson Laney, who are in the back subtly, and also Fan Sao and Andy David. Andy is with the Science Center in Miami and Fan is with our Coral Reef Conservation Program, one of the program officers. I think I am stating her title correctly. Thank you all for being here as well.

MR. BLAIR: My apologies for the oversight. Okay, with that we will have setting and approval of the agenda. Next is approval of the minutes. These are audio minutes that are available through the web and hopefully people had an opportunity to review them.

Are there any suggested or corrections, modifications or comments regarding the meeting minutes from the 2009 Coral AP meeting, our last meeting? Hearing none we will have them as approved. First up on the discussions will be an update on the Comprehensive Ecosystem-Based Amendment 2, and, Anna, it is all yours.

MS. MARTIN: This is really exciting so I hope you won't go to sleep with the dimmed lights. Okay, as I mentioned, I know it has been a year or longer than that since the advisory panel has convened. I know that the AP was instrumental in the development of the second Comprehensive Ecosystem Amendment.

This was finalized this summer by the council. Because of the many variations of this document over the course of a few years, I just wanted to provide you with an overview of the final measures that were included in the amendment and make sure everybody understood all that is included in CE-BA 2.

Actions in this amendment include regulatory measures that will specify how the council manages the octocoral fishery' modify how South Carolina's special management zones are managed; revise sea turtle and smalltooth sawfish release gear requirements for the commercial snapper grouper fishery; and also some non-regulatory designations that will specify essential fish habitat and essential fish habitat-habitat areas of particular concern for various council fishery management plans.

It does include a wide range of measures and that has been the council's intent with these Comprehensive Ecosystem Amendments. This amendment is under statutory deadline for specifying an annual catch limit for the octocoral fishery by the end of 2011. That is a fishery not undergoing overfishing, so as such it does have to meet some of the Magnuson Act requirements as well.

The council did approve this amendment during the June meeting and submitted to the secretary for review, so it is currently under secretarial review. The National Marine Fisheries Service is accepting comments on CE-BA 2 until November 25. The regulations associated with the measures included in the amendment are anticipated to be implemented by the end of the year.

I just wanted to run quickly through the actions. There is only eight of them but again just to give you an overview of the final measures that were approved. This will be modifying the octocoral fishery and how it is managed under the council's Coral Fishery Management Plan. As you know, octocorals are commercially collected and sold live to wholesale and retail dealers and aquarium owners.

They are primarily harvested in the Florida Keys region where they are largely caught in state waters. They are included under Florida's Marine Life Fishery Program also where they are

managed by a limit on the number of commercial harvesters and also a recreational daily bag limit.

Here the council has selected Alternative 3 as their preferred measure and so this will shorten the management unit for octocorals to include them under the Coral Fishery Management Plan in federal waters off of North Carolina, South Carolina, and Georgia. This will remove protections under the plan in Florida waters and solely allow FWC to manage this fishery under their already existing Marine Life Fishery Program.

Jeff and Henry are both heavily involved in that program and can tell us more about the Marine Life Fishery Program. Effective October 31, FWC is making some changes to how they manage octocorals under their Marine Life Fishery Program. They are implementing a quota of 70,000 colonies and they are also extending management for octocorals into federal waters adjacent to Florida.

They will also be maintaining the prohibition of harvest on octocorals in Florida waters north of Cape Canaveral, which is what has currently been in place under the council's Coral Fishery Management Plan, and also maintaining the prohibition on harvest within the coral habitat areas of particular concern.

Aside from the increase in quota here, management for this fishery essentially remains the same yet under different management entities. The council did consider extending the management unit for octocorals into the Gulf Council's area of jurisdiction. This was particularly to maintain some essential fish habitat protections for octocorals.

Also, the Gulf Council – as you recall there are two coral fishery management plans; one in the South Atlantic and one in the Gulf, and the octocorals did have a joint quota with the South Atlantic and the Gulf of 50,000 colonies in federal waters. The Gulf Council is moving forward with removing octocorals from their coral fishery management plan, and this was as a result of FWC expressing an interest in solely managing this fishery.

However, because the council with a previous action is moving to shorten the management unit, they had to select the no action alternative here for this measure. As with the previous two actions in shortening the management unit, the council developed Alternative 3, which is the preferred measure here for this action, during the March council meeting.

This will set the annual catch limit for octocorals equal to zero in federal waters off of North Carolina, South Carolina and Georgia, and again this is in waters where currently harvested is already prohibited. The ACL was also based on a recommendation that the council's Scientific and Statistical Committee, the SSC, provided an ABC value of zero for this shortened management unit area.

An ABC value is an acceptable biological catch recommendation that the SSC provides to the council and which they use to base these ACL numbers. Action 4 is going to modify how special management zones off of South Carolina are managed. Currently there are 29 artificial

reefs off of South Carolina in federal waters that carry the special management zone designation. They do encompass a little over 41 square miles in total, so these are relatively small areas.

The council, based upon concerns that South Carolina Department of Natural Resources brought forward about concerns of commercial exploitation in these areas, specifically through the use of conventional spearguns, the council decided to move forward with Preferred Alternative 2 and 3, which will limit harvest and possession for snapper grouper and coastal migratory pelagic species to the recreational bag limit in these small areas.

Action 5 will modify the sea turtle and smalltooth sawfish release for gear requirements for the commercial snapper grouper fishery, and these are regulations that are currently in place under Snapper Grouper Amendment 15B. The current gears are very large and unwieldy and intended for use in the pelagic longline fishery, so the council is making some changes here for vessels carrying hook-and-line gear on board and not longline gear.

They also want to comply with the Endangered Species Act biological opinion requirement, and so as such Protected Resources has endorsed this preferred alternative, which bases gear required based on freeboard height of a vessel. The council selected Alternative 4 as their preferred for this measure and it will base gear required on freeboard height, so those vessels 4 feet or less are required a suite of gear identified in 4A and those larger than 4 feet are required a suite of gear identified in Subalternative 4B.

Okay, the remaining three actions will designate essential fish habitat, and essential fish habitat-habitat areas of particular concern for the snapper grouper, the coral and the sargassum fishery management plans. The Magnuson Act does direct the council to identify essential fish habitat for each federally managed species in order to prevent adverse affects on habitat.

These are non-regulatory designations; however, they elevate the significance of these areas during a permit review for any type of non-fishing activity, and Jocelyn can tell us a little bit more about that. Action 6 will amend the snapper grouper fishery management plan to designate essential fish habitat-habitat areas of particular concern for golden and blueline tilefish to include a regular bottom habitat areas that are already designated as essential fish habitat, so the HAPC designation will bolster this area during a proposed activity permit review.

This action will also designate the previously designated deepwater marine protected areas as essential fish habitat-habitat areas of particular concern. Action 7 will amend the coral plan to designate the deepwater coral habitat areas of particular concern, and this was something the Coral AP was instrumentally involved in their designation through the first Comprehensive Ecosystem Amendment, and this Act here gives them additional designation of essential habitat, which again will elevate the significance of these areas during any type of permit review.

Action 8 will amend the plan for pelagic sargassum to designate the top ten meters of the water column in the South Atlantic bounded by the Gulf Stream as essential fish habitat for pelagic sargassum, and the Gulf Stream here being the most significant oceanographic feature supporting sargassum distribution, transport, and occurrence.

That is all I have for a review of this amendment. I did want to point out that I know during your last meeting the Coral AP was grappling with providing many of the recommendations that are required under the Magnuson Act. As you will see, those are no longer action items specifically included in the document; however, they are now found within the context of the discussion.

The council basically referred to National Standard 1 Guidelines, which state that this is a part of the Magnuson Act, and they state that existing fishery management plans may already provide the information to designate these values, and so that was what was done here for maximum sustainable yield, overfishing levels, accountability measures. It was determined that these values were already in existence in previous amendments.

They were removed as actions and they are now in the considered but rejected appendix of the document and also within the context of the discussion, and I believe it is the second section. If you have any questions, I will be happy to hopefully address those for you with the second version of the amendment.

MS. KARAZSIA: Just out of curiosity, what were the drivers for the changes to the Sargassum EFH, the last amendment that you showed?

MS. MARTIN: I know they had another alternative selected as preferred. I think it was determined there wasn't adequate justification or rationale for the alternative; and if you will give me a second I will look up what that up. I didn't list them all here.

MS. KARAZSIA: I was just asking because for contacts from the regulatory side in like the last ten years I am not aware of any EFH consultation that we have done for impacts to sargassum, so I didn't know if there was some emerging issue or threat.

MS. MARTIN: The other alternative for that action would have been designating the top ten meters of the water column in the South Atlantic as EFH for pelagic sargassum; the difference here being bounded by the Gulf Stream. I am not sure again other than rationale and they decided to go the route of Alternative 3.

DR. ROSS: I have a question there. How do you bound it by the Gulf Stream when it moves around so much, both the eastern and the western boundary, I mean it changes every day; how does that work?

MS. MARTIN: I sure wish Roger were here to address that. I don't know that it does move.

DR. ROSS: The suggestion I would have made that would have potentially accomplished the same thing would have been a bathymetry boundary like 200 meters or 180 or 150 meters even, because it moves inshore even of that and so does the sargassum with it. As far as an offshore boundary goes, it might as well be the EEZ. But to have it bounded by the Gulf Stream, every day that would be a different place, and also you couldn't actually know if you were in the Gulf Stream all the time unless you are monitoring temperature and comparing it to everything else.

DR. FEDDERN: Does this mean that the Gulf Stream itself would be within that boundary or beyond the boundary?

MR. BLAIR: I would read it as it is bounded by, it would be outside, it is up to considering the area that sargassum is normally going to be, which is in the Atlantic Gyre for the most part. As far as the concentrations that they are trying to be able – if I remember correctly, the concentrations they are trying to be able to protect is the major areas of it.

DR. FEDDERN: Then how do you know if you are within the boundary or not unless you are anchored and can see that there is a current?

MR. BLAIR: That is the point that Steve was making as well.

DR. BROOKE: There are also the rings that come off the boundaries that complicate things. Would it not have been simpler to just define sargassum itself as EFH and not try and define it by the water column?

AP MEMBER: I'll jump in real quick, since there was a gap. That is kind of the same thing though too, isn't it; it moves around as well and you can't find it.

DR. BROOKE: Well, sargassum is a mat; so if you see sargassum, then presumably there are going to be regulations associated with this, I would think, unless you just want to do it for fun. But if you see a sargassum mat, then the regulations apply now. Then you get into the question of what defines a mat; is it any little clump, is it not, what about bycatch?

I see why sargassum might need protection, but it is a very nebulous, and it's a very difficult thing to try and manage because it is not stationary. It moves around and it is hard to define what it is. This might need a little more discussion, I would think.

MR. HARRIS: Duane Harris, council member from Georgia. You will all recall the reason the sargassum fishery management plan came into being is because of a fishery that developed for sargassum off the coast of North Carolina. The plan was developed to try to control that fishery. The council really would like to make the total allowable catch of sargassum zero, but the National Marine Fisheries Service wouldn't let us do that.

We tried to define sargassum as EFH and apparently based on what you are all saying we didn't do a very good job of that. Gregg is trying to look up the exact rationale for coming up with this language. I am not sure that rationale is very good in any event, but nonetheless we will try to have an answer for you before we leave here today or tomorrow.

MR. BLAIR: Thank you very much,. Also, Jocelyn, maybe you could help us out here, I believe sargassum is EFH for specific managed species, but the managed species is not its own EFH, so there is an issue relative to the declaration of an EFH for that purpose. It is the intent to use the water column in which it is normally going to be found within the gyre and other areas to be able to designate that. It does sound as though the bounding systems may create issues on where the application of that area is.

DR. VAN DOLAH: I would appreciate a clarification. It was my understanding that the current regulations do not allow the possession of sargassum at all. This came up not too long ago off South Carolina because there was a proposal to culture sargassum and when we looked at the regulations at that point in time you couldn't legally have it to culture it. Is that not in the current regulations?

MR. WAUGH: There is a prohibition on an area – and I will have to get that designation, but there is an area where you can still legally fish for sargassum as long as you meet certain requirements, one of which is having an observer on board. Maybe what you are referring to is an area south of that line where you can't possess it, but I will check the regulations now.

DR. VAN DOLAH: It would have applied to South Carolina waters; so if that line is north of South Carolina, then that probably explains it.

MR. WAUGH: Correct.

DR. FEDDERN: There is a considerable amount of attached sargassum in the Keys. Now is that included in this? Okay, so that is a different species then?

MR. BLAIR: Well that is a good question that many people are trying to address, whether it is a different species or just a different life phase of it. There are benthic species, but what they are attempting to work with here in my understanding and remembrance is the floating masses of sargassum that serve as habitat, food, refuge for open water and pelagic species.

DR. FEDDERN: So if somebody wants to harvest that, they could do that as an attached species?

MR. BLAIR: I am not aware that any attached – and I will defer to council staff, I don't believe any attached species are included as EFH in the sargassum plan. Another point, if you could, the question came up; sargassum is only associated with a floating – it does not extend to any of the benthic attached species, is that correct?

MR. WAUGH: That is my recollection, yes.

MS. MARTIN: Steve, I just wanted to read from the CFRs the rules on harvest here for pelagic sargassum. It says no person may harvest pelagic sargassum in the EEZ between directly east from the Virginia, North Carolina Boundary and within 100 nautical miles east of the North Carolina Coast. No person may harvest or possess pelagic sargassum in or from the South Atlantic EEZ south of 34 degrees nautical latitude north.

There is a seasonal limitation; no person may harvest or posses pelagic sargassum in or from the South Atlantic federal waters during the months of July through October, so there is also that as well. This prohibition on possession doesn't apply to pelagic sargassum harvested and landed ashore prior to the closed period.

DR. ROSS: That seems a bit like it conflicts with this. A hundred nautical miles off North Carolina is well within the Gulf Stream, which can be within 50 or 60 nautical miles of the coast quite a lot of the year. It appears that we have got sort of conflicting – I think nobody is in conflict with protecting sargassum, per se; it is just how to define where it is and how it occurs, but it seems like we have got some contradictions that are confusing.

MR. WAUGH: If you are referring to the designation of EFH, that doesn't carry any regulatory designation associated with it. As was pointed out by Anna, what that does is during the review process – and Jocelyn could probably explain this a little more – during consultations it carries a higher designation, if you will, and it is a concern, but we don't have any specific regulations that say you can't do something in that EFH area.

DR. ROSS: So it sounds like then if this is defining – well, even if this is cleaned up to cover a better boundary for sargassum, it sounds like if you are within – if you are inshore of 100 nautical miles you can harvest it, in which case there is a huge area of sargassum that is open to harvest off North Carolina.

MR. WAUGH: Regulations say you can't harvest within 100 miles?

DR. ROSS: Was it offshore of 100 miles, 100 miles out?

MR. WAUGH: What the regulations say is you can't possess it within 100 nautical miles of the North Carolina coast.

DR. ROSS: Okay, so it is offshore of 100 miles that you could, not inshore.

MR. WAUGH: Correct, and again one other thing to point out. This is CE-BA 2 that is currently under review. We have already sent this. This is under review by the secretary, so the council has no ability to make any changes to this document.

MR. SHEPARD: I didn't read any of this and I am wondering why we are dealing with this at the Coral AP meeting. Do you need our advice on sargassum?

MR. BLAIR: I think this is totally for our information, but it does bring up a point. I think Gregg made a good comment – and, please, Jocelyn, please correct if I am misspeaking here, but with the designation of this as EFH we are defining the important habitat that is needed for the fish and not a regulatory guideline that has to be met wherein there is going to be enforcement issues come about through the designation of EFH. There are other aspects in the regulation relative to restriction of harvest and so forth that do carry a regulatory and compliance issue, but this is kind of beyond that. It is more or less stating those areas that are most important to the sustenance of the sargassum itself.

MS. KARAZSIA: I didn't mean to derail the meeting agenda by bringing this up. I just was asking for some clarification because in my ten years' experience doing essential fish habitat consultations we haven't had any type of federal action that would suggest that the activity

would result in an adverse affect to sargassum EFH, so I think we should move on and we can have further discussion at a later time if we want.

DR. GILLIAM: I guess in the spirit of moving on, but something related, for those of us that aren't resource managers, perhaps it might be good for the panel to hear a little bit about what it does mean for the habitat area of particular concern to be elevated to an EFH-habitat area of particular concern. I would like to have some more information.

MS. KARAZSIA: I'm sorry, can you repeat your question. Was it for the coral habitat area of particular concern?

DR. GILLIAM: Yes, what does it mean to elevate the CHAPC to an EFH- HAPC.

MS. KARAZSIA: The coral habitat areas of particular concern were designated under the coral fishery management plan so they are under the mechanism under the coral fishery management plan that if you meet certain criteria you can designate a coral habitat area of particular concern. That process and the criteria to establish coral habitat areas of particular concern happened before the revisions to the Magnuson-Stevens Act, the EFH provisions, which also use similar terminology habitat area of particular concern.

It has been confusing between what is the difference between coral habitat areas of particular concern, which is a management action under the coral fishery management plan, and then EFH based habitat area of particular concern which is under the EFH provisions of the Magnuson Act. It basically helps alleviate some of that confusion so then we don't have to try to explain the difference, because there is EFH habitats within the coral habitat area of particular concern and there are habitats that are designated EFH and HAPC within the coral habitat area of particular concern. It just allows us – it affords the protections – protections I am not sure is the best word, but the designation and allows some consistency in how we refer to the coral HAPC versus the EFH-HAPCs.

DR. BROOKE: Jocelyn, could you or Anna just briefly explain how that changes. You mentioned something about it changing the permitting requirements for non-fishery activities. How does that change those requirements?

MS. KARAZSIA: Essentially what it does is how we describe the habitat and how we describe it and how it is designated. It just allows us to refer to the habitats within the coral habitat area of particular concern as the EFH-based HAPC in addition to the HAPC as defined by the coral fishery management plan. I don't think I am doing a good job of describing this so if anybody wants to jump in.

MR. BLAIR: Again, remembering that EFH designation is not a regulatory process or a regulatory designation; and maybe on that aspect rather it is defining those areas that are specifically needed for that regulated species to sustain itself. The area inclusion just in the same way that an HAPC, like the deepwater coral HAPC does carry extra weight, extra protections and so forth with it with the designation of an EFH-HAPC.

If there are activities that would be ongoing and at the review of those activities would go under greater scrutiny, potentially have a little less flexibility for the types or magnitudes of those activities in order to assist in protecting those, and that would be done through the consultation reviews. Is that appropriate?

MS. KARAZSIA: Yes, just to also add is that the coral habitat areas of particular concern are very large areas, and we know that it is not 100 percent coral within those areas. Without having more detailed site-specific information, we also know that a lot of those areas haven't been mapped and characterized as well. It allows us to refer to those areas as EFH-based HAPCs in the absence of having some information and sort of having that elevated level of review and scrutiny. It allows us to use that through the consultation process.

MR. BLAIR: Although this is really good. At each meeting I need to come and get myself repositioned to make sure we have got it, so it is a very good discussion but I would like to move on so we will take one or two more final questions.

DR. FEDDERN: Just basically the coral HAPC had regulatory provisions with it; so that when the other HAPCs were designated in other plans that is not good, so they then modified that title to say EFH-HAPCs in order to distinguish between the two because there were different aspects to each.

MR. BLAIR: Just one of the other things kind of as a followup to Andy about the aspect about our recommendations and so forth being made, obviously this is well underway. This has been ongoing for four or five years, so this one is down. But the other aspect of it is that I know that our advisory panel definitely has made recommendations to other panels relative to our perspectives on those issues that they may be dealing with.

Although in this case it is not for this specific action but if we feel that there are issues that may need to be addressed, that could be clarified and so forth, that we could make those recommendations to the other panels for considerations in other future actions. What we would like to do is to start getting a few updates on some of the South Atlantic coral research activities that have been ongoing, and first we're very appreciative for Andy David to be present with us today and be able to give us an update and overview on NOAA's South Atlantic research for deepwater coral.

MR. DAVID: Okay, my name is Andy David. I am with NOAA Fisheries. I am with the Panama City Lab. I guess I have been working on MPAs in the Gulf since 2000, and we started working on the shelf edge MPAs the South Atlantic Council was working on, and we started working on those in 2004. More recently we have been moving out to deeper water and to more of this coral work.

NOAA started its coral reef conservation program in 2000 and it has gradually expanded in scope and complexity. It generally was a shallow coral program. There was some mesophotic coral work but it was generally shallow. We saw there was a need for deep coral work to be highlighted and focused upon, and so in 2008 it was determined the best way to go forward was to have a standalone deep coral program.

The plan became – it was a regional approach was what was decided to be taken and they would look at it three- to five-year effort in several regions in the country. The southeast was selected as the first region for a deep coral program primarily because of the protections that the South Atlantic Council was extending towards its deep coral habitats, and the large amount of work that had been done by several people in this room; Steve, Sandra, John Reed, others who have done a lot of deep coral work.

In early 2009 NOAA started its project in the South Atlantic. They picked me to try to put together a team to do some work down here. Of course, I am with Fisheries and they wanted the team to be principally NOAA. The others on the team were John Tomchuk; he is with OAR in Silver Spring, and he was the co-lead on the team.

George Sedberry from Gregg's outfit down at Grays Reef, he was on the team and his specialty was the biological diversity of the South Atlantic, having done a lot of work down here. Andy Shepard over here was also on the team through UNCW and NURC and the CI at the time. His specialties were data management and logistics, being able to put together the various cruises and equipment and gear we needed.

The last member was Tim Battista, another individual from NOS in Silver Spring. He is our mapping specialist. Those were the group that we got together. WE thought the – and being the first of these regions, there was a lot of growing pains. We didn't really have a lot of clear directions at times as to what was expected of us and how we should proceed.

But we knew that the council would be one of our main clients, so one of the first things we wanted to do was have a planning workshop down here in the southeast, get together a wide variety of expertise and management and scientists and state and feds and look at what the issues were that needed to be addressed and how could this little program try to do that.

The meeting was held in Wilmington in July of 2009. I think there were about 21, 22 people there. There were a lot of recommendations that came out, some of which weren't directly applicable to what we could do in a three-year period with the funding we had, but there were several good recommendations.

These are the top three; map and characterize the deep sea coral habitats in the proposed CHAPC; understand the species and coral habitat relationships and the factors that control or influence them; and then to conduct research to identify and assess areas impacted by fishing and non-fishing activities.

It has been three years now, we have completed our field work, so what I want to do for the rest of the talk is go through the seven major cruises that we funded and executed in this program and a narrow overview of what we did on each one. There are other talks in this section and they will go into, I am sure, much bigger detail on certain cruises or certain components of the project.

Our first cruise was the Seward Johnson in 2009 and we also used the JSL. This was a cruise that was I believe in the works before our deep coral program started up, but the folks in the CI

were very cooperative and we worked together to help fund the cruise and extend some of the mission and tailor it to meet some of the deep coral goals.

Now you will see a series of maps like this. The HAPC is in the fairly ugly color in the right of the map and the dots indicate dive sites for study locations. All of this work, this was done in August of 2009, and this was our only submersible cruise. There was a lot of benthic community sampling done with the vehicle and some other gear as well as plankton collections looking at connections between midwaters and surface waters and the benthic habitat. The Johnson Sea-Link, of course, was the principal piece of equipment used.

This work focused mostly of the Canaveral region in central Florida. There were 22 sub dives that were MOCNESS tows. There were CTD casts and a variety of other gears as well. Steve Ross was the chief scientist on this mission, and we will have a series of photos from that cruise. There is the JSL being launched, some of the MOCNESS catches and the lower right there is the galathea crab and some Lophelia that was collected by the submersible.

One of the other pieces of equipment that I should mention is this microlander. This was a small device that was placed on the bottom by the submersible at the beginning of the cruise and it collected data continuously during the cruise and then was recovered at the end to get more longer-term data set.

These landers certainly can provide a lot of good information for this habitat. There is some bamboo coral and the lower left is a chained dogfish. I guess he is the well-camouflaged little fish stretching out in the middle there and a golden crab. Of course, there are lots of interest in the fishery species out there and golden crab being one of them.

The next cruise was in 2009 as well. This was intended to be an ROV cruise. There was a problem with the ship's propulsion system. We kept losing days, we kept losing days, there was a minimum number of days they would charge us for the ROV and we ended up not being able to make that work cost effectively.

We transferred this second cruise to strictly a multi-beam mapping effort. This was done off, again, that central region of Florida off Canaveral, off the Oculina HAPC in September, 2009. There were just under 600 square kilometers mapped. Brian Costa was the chief scientist; he is from Tim Battista's office up in headquarters.

I am going to skip out of turn a little bit here and talk about our other sole mapping cruise. This was done on the Lost Coast Explorer in 2010. This was a contract vessel and a contract mapper. The chief scientist was Dave Narr from the University of South Florida. He mapped a large number of places for us. He also did some mapping in the Gulf of Mexico as well as the South Atlantic, and these were to support these cruises.

On that cruise they mapped nearly 7,500 square kilometers. This little figure here shows just some of the mapping work that was done before our project started. In '07 the Foster did some mapping as well as what we did on several of our cruises; the Nancy Foster in 2009, the Lost Coast Explorer, and there is one by the Ron Brown that I will talk about in a minute.

You see most of this work is off Florida. This was where a majority of the work was conducted, both mapping and the dives. My main digression during the talk is to speak for a few seconds here about the navy activities. The U.S. Navy is certainly doing a lot of work in the South Atlantic and a lot of it coincides with the HAPC.

They have been moved out of the Caribbean for a lot of their training and work, so this is one of the areas that they have chosen to move back to. That reddish area in the middle, there are three boxes there. Those will have a lot of focused activity there, but the total area of activity is really quite broad. The yellow boxes are your shelf edge MPAs. You can see there several of those are impacted.

In the HAPC you know the shape of the boundary; it is in that area as well. One of the things the navy did that has benefited us is they did a good bit of multi-beam mapping. This is off Jacksonville, the HAPC again is visible. One of their areas, the Charlie-Charlie box is coincident partially with the HAPC. The undersea warfare training range totally encompasses the North Florida shelf edge MPA.

It was nice of them to map this for us and now we have some more information about where to look out there, but we have some concerns about what they are going to do in these areas and how that might impact corals and habitat. These are those same two maps just in a monochromatic view, the Charlie-Charlie range at the top and then the large U.S. WTR at the right.

These maps that the navy provided us were over 3,000 square kilometers so it was a very significant area and we are happy to have it. If you look at the little blow up at the lower left, that is just that small red box in the U.S. WTR, I think you will hear more about some of those peaks in the lower right of that expanded area, but you can see what are theorized as iceberg scour marks as running north-south down at that area, and a lot of exposed rock in the deeper waters.

All right, so much for the digression to the navy; our next cruise that we are going to touch on is the Pisces in 2010. This was in April of last year. This cruise was significantly shortened by weather. This was led by George Sedberry. He was interested in continuing some of the work done on the 31/30 transect coming out of Central Georgia and South Carolina.

We used an ROV from the west coast from the Southwest Fisheries Science Center. It is a souped-up phantom, but with the weather and the current conditions we were limited in our number of days. We only were able to make five ROV dives. We did some benthic grabs, which was a new type of work for us on this program. Of course, CTD casts were done on all of these things.

There is the ROV; as I said; it is a large frame phantom. We had currents 4 knots, 4.5 knots. It is pretty hard to work with just about any vehicle in that current, but we did what we could. We tried to move north to the Georgetown Hole to get out of the current, and that worked a good bit better.

We did find several species, of course, that you are interested in, the royal red shrimp, golden crab again. That Leiodermatium sponge is one that is sought after for its biomedical applications. We did find Lophelia, the dominant structure-forming coral down there in several locations, and lots of exposed rock at different places.

There is the snowy grouper, one of your species of concerns, as well as the misty grouper and more Lophelia, some charismatic little fishes. It was a nice cruise; the current was a problem and weather was a problem. Then the Ron Brown cruise last fall that was absolutely our largest effort as far as cost and the complexity of the cruise.

That is the largest ship in NOAAs fleet and we used one of the premiere if not the premiere ROV in the world, the Jason II from Woods Hole. This cruise covered a large area from slightly north of the Florida-Georgia border all the way down to Portales Terrace, and there was one dive in the Gulf of Mexico, say offshore from Naples, Florida.

This cruise started in Pensacola and ended in Canaveral, so on the way out we wanted to make that dive on a spot that Steve was aware of off in the Gulf and it was a good shakedown for the ROV. This was an ROV cruise. There was a lot of benthic community sampling, a lot of multi-beam mapping when weather was inclement. The Jacksonville lithoherms, the Portales Terrace, the Canaveral bioherms were the principal focus of the dives. We had nine ROV dives; they were very long, up to 12 hours a piece.

There were otter trawls, UTD casts, a variety of other gear was employed. Mapping was done when inclement weather permitted ROV dives and there were nearly 1,600 square kilometers mapped there. Steve Ralston, Sandra Brooke were the co-chief scientists on this cruise. There is the launch of the Jason. It is quite an impressive operation; it comes with a 10,000 meter umbilical on their winch.

They bring their own cranes; they bring their own control vans, two large vans bolted together. It is a very impressive system. There is a little of the Lophelia in the Gulf of Mexico on the left and South Atlantic on the right. The collecting capabilities of that vehicle were quite impressive. At the top there is the furthest north we went and the shallowest, and that was the Jacksonville lithoherms.

At the bottom on the left is the Portales Terrace. That was I think the deepest we were and the southernmost of our dives; and then on the right the easternmost, I guess, one of our easternmost sites. We selected a picture of the two galathea crabs fighting over a fish that was stunned by the lights and became dinner.

The collection capabilities again of that vehicle were quite impressive; high-definition video and still photography. It has a large payload capacity which allowed us to put things on the bottom and then recover them later during the dive. The upper left, the little white triangle is a marker for a fish trap that Steve put down.

It was not down for very long; and when it was recovered, of course, it had collected or attracted a large number of golden crabs; not too many fish, I don't think we had any fish, but it certainly

pulled the crabs in. The vehicle has bio-boxes that are thermally insulated so you can bring samples back and try to keep them alive.

Steve and Sandra did that and had I think a successful metabolism study on Lophelia. They could pick up quite large objects and place them in these boxes in quivers or just in a large tray on the front of the vehicle, so we have a large number of samples – these big coral samples for genetics and aging and a variety of other studies.

This one really showed how well data management – the role that that plays. The upper left in a photo by Art Howard shows the inside of this double control van with all the monitors. The pilot is sitting closest to that wall of screens in the front and the chief scientist is the one obscured in the center there.

In the foreground is Martha Nizinski from NOAA in the Smithsonian. She is logging in a sample as the manipulator arms collect it, so we know what was collected when, where, some description of it. When the vehicle makes it to the surface, those samples are recovered. The tags and sample IDs were transferred to them so that they remain on track. Everything was documented with photographs and well preserved and so again making sure that the samples all stay together as they should.

Now we go to the two cruises from this year. Again, we had the Pisces, and again we used an ROV from La Jolla. They built a new ROV; they called it the HDHV, the high definition/high voltage. This was 1,000 meter capable ROV that had done some work in the west coast and seemed to be productive, so we chose to use it. It was cost effective.

Again, we wanted to work off the east coast of Florida. We revisited a site off Jacksonville and we again found the Gulf Stream screaming about 4 knots, 5 knots and on the second or third dive broke the cable on the ROV. We did not lose the ROV but we did lose the capability to operate it. Fortunately the guys brought a spare ROV and we used their other ROV for the remainder of the cruise.

It had some depth limitations and forced us to come somewhat inshore from the CHAPC, but we did find some very interesting things with this. Again there were eight ROV dives, benthic grabs and CTD casts. I want to make sure I mention something about the benthic grabs in a couple minutes. We did some mapping.

We did about 112 square kilometers mapping with the ships ME70 system. We were able to map in more places than we were able to dive. The current didn't affect the mapping, thankfully. In the black boxes here, this is a map that Laura Crocker made for us, who has joined us in the back of the room from the NCCOS Lab here in Charleston. We covered a good bit of the east coast of the state and we tried to map every place we were going to make dives.

Now the benthic graphs that we did here – Jeff Hyland from the Charleston NCCOS lab was on the cruise as well – we are very interested in contaminants in the sediments out there and how those might affect the corrals and the infaunal community that was in the sediments both

downstream and upstream from the coral mounds. Every place we dove we were able to collect triplicate benthic grabs for the infaunal community analysis.

That may sound like it was a pretty simple thing, but I think Laura will attest from being on that cruise that it was very difficult to get those grabs to work in these depths and have that thing land where you need it to in those high currents. Now this is a map that Laura produced for us with some help from Randy Cutter out at the NOAA Southwest Center.

These are some Oculina mounds off Daytona that had not been well known before. There were at least 75 new mounds that we mapped and many that we made ROV dives on. This is looking from the south and the yellow line is an ROV track. We landed in a shallow spot between these two sets of ridges and then drove up and over and down the crests of several of these mounds.

There is the HDHV ROV before we snapped its tether in the current. While they were working on repairing that. we made a dive in that north Florida, the shelf edge MPA. Again kind of what we are used to there; it is very lush upper fauna; a mixture of deep and inner shelf fishes. Once we got down to the Oculina, those new mounds off Daytona.

There is one of the shots of the Oculina growing there; a beard fish. There is Oculina in the Oculina HAPC growing on a derelict net. Clearly that net has been there for awhile based on the size of the Oculina growing on it. There is the benthic grab that I mentioned earlier. The lower right shows – it is a nice shot of the fish, but it also shows how that bottom down there is almost 100 percent coral rubble. That is what makes up the features down there.

All right, our last cruise for this mission or this program was on the Nancy Foster about a month ago. We were in and out of Key West and we were trying to focus on the Portales Terrace. We had the Kraken II ROV from the University of Connecticut. We made 14 ROV dives. The MOCNESS tows, CTD casts and we mapped a little under 375 square kilometers. John Reed was the chief scientist on this mission.

There is where we made the dives and there is where we made the maps. Each night before the dives we had some rough bathymetry, but we wanted to get as high resolution as we could so the ship would make maps during the night. They would post process them quickly and give us maps in the morning to pick dive sites from such as this one.

This is one on the southern end of it. Those two sinkholes sort of in a figure eight at the top there of the group, those were known, but the four below it were not known before. There was this large feature offshore from the escarpment and that is where we made one of the dives and found a very large Lophelia reef that had not been known, and I don't believe Lophelia had been reported from the Portales Terrace before, so it was a nice discovery.

There is the Kraken II ROV. It is sort of midsize/midrange between the Jason, which is very large and very expensive, and the smaller ones which are much more economical but more limited in features. The Kraken was a very nice midrange ROV. There is some of the Lophelia that we saw. That was an isolated shrub or bush out away from the large reefs.

Portales was dominated more by stylaster corals, although there were several of the other structure-forming species down there. The control band for it, again sort of midway between the others and the golden crabs which we have seen most places, just some more of the fish. There were very dense fields of the stylaster coral in some places, very encrusted with sponges.

There is some of the dead Lophelia that was forming habitats in this case for a conger eel. The growth of the Lophelia seemed to be somewhere as it was further up the east coast with a progression going into the current with the live stuff on one end just building upon itself. To attest to how low the current was and how good the weather was down there; we have tried to go there three times.

This was the first time that we were really able to get to the bottom and move around without just sort of hiding behind large rocks to get out of the current. There was 3, 3.5, 4, 4.5 knots previous times. We were out there for over a week. We never saw a wave that was more than a foot or a current that was more than 1 knot on this cruise. It was very nice.

I show the man overboard drill there, because not only did we think it was nice, the captain of the ship was sufficiently confident that he could put his crew member in a survival suit and throw them over the side in the Gulf Stream and find them again.

AP MEMBER: Did he go real far away, though?

MR. DAVID: If I was the guy in the water I would have called it real far away. It was half a mile maybe, but they did have a radio and a survival suit and it was broad daylight. Again, we did see some interesting fish. The Caribbean rough shark I don't think has been reported from down there before, and we were able to get down to 850, 875 meters on one of the dives off the edge of the escarpment.

Now this is not a cruise to report, but this is a predictive coral mound that David Zinquonot produced based on a variety of parameters. We have mapped a lot but you see there is certainly far more areas that have not been mapped than have been mapped. One way to try to figure out where to go or where to map even is the use of these predictive maps.

One of our funded projects is for Tim Battista's group in NOAA headquarters to use a similar approach as David Zinquonot did here, and using the maps that we have now produced on this effort and some of the video and grabs and such for groundtruthing and tried to improve upon these maps for predicting where one might find deepwater corals. This is central Florida. There is the Oculina HAPC is sort of the black-bordered area and, of course, central Florida is a hotspot for deep corals.

To synopsis of what we did, that is the map, there is your HAPC. All the dots are either an ROV dive or a submersible dive. I think we were able to make good coverage of the area. There is a noticeable gap at the Miami Terrace. We tried several times to dive there. We tried on the Brown, we tried on the Pisces. We either had bad weather, bad currents, or both.

It is a difficult place to work as this Gulf Stream is really ripping through there. Though we did have good coverage of I think of the whole area, we had seven major cruises, two were only mapping, two were only a vehicle to the bottom, and three had a combination of ROVs and mapping.

We had 22 sub dives, 36 ROV dives, mapped over 10,000 square kilometers. We found Lophelia shallower in and further south than had been seen before. As the data continues to be analyzed, there is a possibility, I will say not a probability, a possibility of new species and this predictive coral map is under development.

There were hundreds of hours of videos taken, hundreds of samples collected, thousands of photographs. Corals and sponges were taken for a variety of purposes, growth, reproduction, genetics, taxonomy, biomedical applications. There were MOCNESS tows; there were benthic community samples, otter trawls, CTD casts, plankton tows trying to look at the full water column in several places to get the ties between the benthic coral communities and the other areas.

What our plan to do is give everyone another year to finish analyzing data and gather together the NOAA team and the PIs for a workshop next summer as well as representatives from the council and see how we can put this all together to provide you guys what you need the most for a final report to be pulled together late next year. My last one is another Art Howard's very nice photos from the Ron Brown cruise, and that is my overview.

MR. BLAIR: Thank you very much, Andy. It is impressive to see the amount of information that is coming out. It is very heartening to see the amount of information that is coming out as well. Definitely as much as we have learned, we kind of just keep reminding ourselves how much more we have yet to know and get in hand. This is amazing.

I remember a comment made by John Reed when he was doing just bathometer tracing of these areas and just overlay and overlay of the mounds that were occurring. At the time the question is how many of these may be deepwater coral communities. Over the various dives he took and in doing those, he was asked the question how many dives did you make on a mound that was not deepwater coral, and he said none.

The extent of these things just continues to get brought forward, so I appreciate it. That is fantastic information. We are going to hear more, hopefully, as we continue on from the updates on the work that has been done over the past few years, and Sandra will be speaking to us about the Jacksonville Lophelia Site Research.

MS. KARAZSIA: Steve, if we have any questions or comments, do you want us to hold that until the end?

MR. BLAIR: No, I apologize, let's have them – if you don't mind, let's have them now so that they are fresh in our minds and we can have them addressed.

MS. KARAZSIA: Well, I just kind of had one overarching comment in that I think that the work that Andy presented on represents a considerable investment by NOAA, and I also think the work is of very high value to the Coral AP and the council. I think that if others agree, that we should consider putting a summary or comments back to NOAA's coral program and letting them know that this type of work is the type of work that we need to continue our understanding, to help refine their management actions.

Personally I think this work is of high value for the work that I do through the Essential Fish Habitat Consultations and I think for everyone else around the table. As kind of like a followup action to this meeting, not only just for Andy's work, but if anybody else thinks that would be helpful for us to communicate that this work is of high value for us and we would like to see it continue.

MR. BLAIR: Certainly, I believe that is something that is within the realm of the AP to either work with the – or request something. Would that come from the council, we request from the council, or is it something that the AP could draft and have pass through? I think the council would be definitely the entity that we would like to see it come from.

MS. MARTIN: I think as a recommendation from the AP to the council and it could move up the chain of command that way and distribute to CRCP. Considering this wraps up the last year of their research focusing efforts in the South Atlantic, I think it would be timely to provide something like that to the council.

MR. SHEPARD: That is real important right now because of what is happening with NOAA funding. The timing of it would be as fast as you can because they are making considerations right now on FY-12 budgets that could eliminate our ability to support these kinds of expeditions, so the faster the better and the higher the better, so from the council to the leadership at NOAA, and the line offices would be very helpful.

MS. KARAZSIA: I will offer to help get some feedback from NOAA's coral program and work with the council to see maybe what we can provide if that would help expedite getting something out, recognizing the urgency of this matter.

DR. ROSS: I wanted to just add one other thing here. This certainly is a substantial investment by NOAA, but I need to point out here, too, that there were a number of other agencies that participated in this in collaboration with several offices of NOAA even before that deep coral program started; and are continuing that collaboration. USGS, U.S. Geological Survey is one in particular. What was the Minerals Management Service has been involved; the council has been involved in funding some of our work. A lot of us are continuing different projects along with the NOAA Deep Coral Program and independently. There are a lot of efforts going on out there and we need to make sure all of those are noted.

MR. BLAIR: I agree, we can look at that relative to all the partners associated and which ones are – and even in updating from some of this information to the council itself, to the information that is coming back and the importance and significance of it I think is not a bad idea. I think it is a good recommendation.

Jocelyn, I will be happy to work with you to try to format something and work with the council to be able to find out both how quickly we can do it, and the best appropriate format pathway to make that happen. Are there any other questions or comments at this time? Sandra.

DR. BROOKE: I will be giving this presentation on our recent explorations of the shallow Lophelia ecosystem near Jacksonville in conjunction with Steve Ross. Okay, Andy gave us a great background to the cruise during which we found this site. As he said, there was the NOAA Vessel Ron Brown, funded by the Deep Sea Coral Research and Technology Program, and we used the Jason ROV.

It was multi-disciplinary. We had all sorts of PIs on board; NOAA, USGS PIs and other academic institutions, and Steve and I were the chief scientists. Again, déjà vu, we started off in Pensacola and made the shakedown cruise on the West Florida Slope with a site that we dived on earlier in 2009, I believe. Then we went round – we got stuck here because of weather.

Miami Terrace was one of our target areas, but as Andy said we have been having a really hard time getting there. It is kind of a hostile environment. We hung around the Portales Terrace and then we went up to Jacksonville. Now Jacksonville is an area that we have been very interested in but it has kind of fallen through the gaps geographically.

Most of the cruises have come out of Harbor Branch down here and have gone Canaveral and South; and then Steve's cruises have come out of North Carolina. There hasn't been much effort in Jacksonville but it is a very interesting site; so this is one of our target areas. Millions of cruise objectives, most of which, I am going to say all of which, played into the Deep Sea Coral and the South Atlantic Council's objectives.

Mapping, exploration, identifying the physical environment, habitat associations with the reef and off reef fauna, population genetics, sponge taxonomy; sponges are a big sort of black bucket right now. We are having a hard time getting them identified, but we are making some progress there.

Reproduction, trophodynamics, paleoecology, now this is an interesting discipline that is kind of starting up; we collect the big bamboo corals and black corals and these things live for hundreds to thousands of years; and not only can we assess age and growth from these but they are a historical archive of past ocean conditions. This is some work that we have been focusing on recently.

Aragonite saturation state; everybody knows ocean acidification is probably going to change the aragonite saturation of the oceans, but we have zero data from either the Gulf of Mexico or the South Atlantic Bight, so we started to collect those data. Of course, education and outreach are always an important component of NOAA efforts, so we had teachers at sea and a couple of websites going.

This is the Jacksonville area – and thanks again to Andy for providing the background to this – these are data that he provided for us from that mapping effort, and then this is the NAR effort on

the deeper sites. As you can see here, the boundary, this is the 400 meter bathymetry, this is the HAPC, more or less. These deeper sites are already in the HAPC.

A little bit of background on why we decided to go tromping off up the shelf here. I saw these multi-beam data earlier on, several months up to a year prior to this cruise. There is a consultancy firm out of Seattle that was doing some work for the navy and they asked me to come up and look at the multi-beam and tell them what they might see.

I looked to the deeper stuff here and said, well, these are probably coral mounds, these look like coral mounds but it is too shallow. Anyway, they put the ROV down and there are records of Lophelia, so I thought, well, this is a bit peculiar, it is way too warm. When we had the opportunity to go and dive up here, we were kind of torn as to whether to risk a valuable Jason dive on this punitive shallow sight.

In order to make that decision we did some CTD casts because Lophelia is bounded by temperature. It is usually not found in temperatures warmer than 12 to 13 degrees in the field; and up on the shelf there at 200 meters where these coral records apparently came from, it seemed like it was way too warm.

We did these CTD transects across the shallows from the deep area – this is the deeper Jacksonville multi-beam – up into the shallows here. What we saw was quite surprising. At 200 meters – that doesn't show up very well, I apologize, but this is 8 degrees. Basically the take-home message from this image is that at 200 meters it was 7 to 8 degrees.

Just to put that in context further south, but that 8 degree line is at 500 meters. This is very, very shallow for such a cold water temperature. Given that information, we decided it was within the temperature boundaries of Lophelia, looked like good habitat and it had already been seen before; unsubstantiated record, so we decided to go for it.

That little black dot there is the beginning – that is the start of our ROV dive, I think. These red dots are previous JSL dives; there were only five of them. Given the number of dives that have happened out there off the coast of Florida, that is a very low number. This area is extremely unexplored. There are indications from bathymetry that there are hundreds to thousands of mounds out there.

These are our deeper water sites, found some beautiful Lophelia habitats, some nice rocky ledges; so we put in here and what we found was this. Now, interestingly, you might find a few sprigs of Lophelia in areas that are sort of on the marginal end of that habitat boundaries, but what we saw was not these isolated small colonies necessarily, but there were thickets and rubble and large – I think this is keratoisis, a bamboo coral, and there are sponges in there.

This wasn't just a one off a couple of sprigs of coral. This was an established coral ecosystem. That temperature was obviously a permanent or long-term feature because this ecosystem had been established. Not only did we find the corals, we found the other – well, this is corals again, this is a bamboo, little anemones, Lophelia, there is a sponge in there, glass sponge. Again, foundation of coral rubble as you would expect on a bioherm long-term feature.

Not only did we find the corals, all of the structure-forming species that we would expect Madrepora, Enallopsammia, and Lophelia – there is Lophelia on this rock here, but we found an unusually high abundance of mobile mega fauna, particularly fish. Now these guys here, blackbelly rosefish, there aren't a commercial fishery for them but they are fished in other places, and you see one, two, three, four and then five, a couple up there, six, seven.

Anyway, there were a lot of these fish gathered around this one rock, and this was all over the place. There were unusually high numbers of these things. They were larger than you usually see. There is a golden crab that is a commercial species, so other abundant fish. This was unusual also, these are just little eels, synaphobranchus eels, dozens of them just poking out of these plumarellas, again, very unusual to see them in these high numbers.

Actually, what we think is going on is that this slug of cold water that seems to be this permanent feature is kind of bumping into the bottom of the euphotic zone, it is 200 meters on a clear day, good weather, light gets down there, or at least it is below the high productivity area and we think that this is a high productivity area. Of course, this is arm waving, the data may say that we are completely wrong. We think that this might be what is going on here.

Just a little tangential, but each of these dives that we do, we create a dive log under a sea desk format. This is a project that was generated by Steve with partners to give to provide a quick look at all the dives that the ROV and sub dives that we do. Not to belabor that point, but these are extracts from the sea desk log.

We started off up here, and this is a picture of A, so it was a rocky ledge with a few sprigs of attached stuff, mostly corals. Then we went down here, this is the ROV track – sorry, this is the ROV track. Each of these colors represents a different type of habitat. As we go down we can see the habitat types that we run into.

Again, it is sandy and rocky but attached fauna, which implies that there are rocks underneath. This is that big rock that I just showed you that was down here. Then we come up – this actually here, I haven't got it overlaid on the multi-beam, we didn't have this multi-beam when this log was generated, but this is coming up to a bioherm, and that is where we found these hard corals off of the top of the bioherm with more well-developed Lophelia colonies.

Again, going back to Andy's talk, he described this Extreme Corals 2011 cruise on the Pisces with this little ROV, and they revisited the Jacksonville shallow side and they got multi-beam data for us. Well, not for us but they gathered this multi-beam data. This is their dive here and then ours is kind of faded into insignificance here. It looks great on the computer screen.

Okay, that is ours that I just showed you. They did a much longer dive and came out over here, but it was a bit of a roller coaster ride apparently. Again, they were dealing with really tough currents in the Gulf Stream. But you can see here from the multi-beam, this was the top of the mound that we came up on and they also did – and then there are these other two mounds really close by, which are probably also coral habitat.

You can see how shallow this is, 240 meters and shallower. These are images from their dive, from Andy and John, very well-developed beautiful live Lophelia here, anthelia, blackbelly rosefish.

They also saw – we also saw galatheid crabs, eumunida picta, which are very common on deepwater coral communities. Just in summary, very shallow occurrences of these deepwater species – coral sponges mobile invertebrate's complete community and not just the corals themselves.

The presence of thickets and rubble indicates that it has been there for awhile; it is not just a vicarious thing. They are probably maintained by this long-term oceanographic feature that brings cold water up into the shelf and keeps it there. It is really not clear how extensive this feature is.

There is abundant rugged bathymetry from the multi-beam but we don't know – but again this ecosystem is being maintained by the cold water. It doesn't matter how good the bathymetry is or the substrata is, if it is too warm they can't live there. We don't know how extensive that cold water temperature feature is.

Unusually high abundance of mobile species, probably because it is up on the shelf, higher productivity; very large numbers of blackbelly rosefish. They could become a fishing target and they are fished by hook and line, longline, or trawling. Again this is potentially a fishing target. And, of course, we need more research. We always need more research; get out of the office and go to sea and avoid the e-mail.

What we were thinking, this is the – of course, as Andy said this is bang in the middle of the navy's area where they want to drop explosive things. This is the current HAPC boundary, this is the extent of the multi-beam we have, and you can see all these bumps up in here. This tiny little spot here is the multi-beam that I showed you just now and where our dives were; tiny, tiny little area. All of this, this lovely ledge up here could be good Lophelia habitat.

What we would suggest to the council or at least for discussion to the AP is that we extend the boundary of the HAPC to encompass at least what we know. It would be nice to come up here maybe and come down, but again we don't really know how extensive this feature is. While we are talking about boundary extensions, this is a bet tangential but Steve also has so suggested that – sorry, let me back up.

This is multi-beam bathymetry, the Cape Lookout Mound, so we have jumped from Florida to North Carolina. This is the current HAPC boundary, and you see these lovely mounds here. These are in the HAPC. There is also the bit that the multi-beam extended out beyond that and he has identified some coral mounds up in here and just suggests an extension of that HAPC. There are coral records from up in here which is further north than the known coral mounds within the HAPC, so this seems like a good candidate for extension. I think that is all I have. I would be happy to take questions.

MS. KARAZSIA: I just wanted to thank you for sacrificing one of your dives to take a closer look at that area within the navy U.S. WTR site. That is really going to help us through the EFH consultation. Then I didn't know if there was anything on the agenda. Sandra raises some good points about finding large areas of intact habitat outside of the CHAPC boundary. If we don't have a discussion right now, I think we should have a discussion at some point before we all leave Charleston.

MR. BLAIR: There is both discussion periods at the end of the summary of the reports as well as we have a discussion item regarding potential future CE-BA actions. It is intended that through these that I think that we are looking for this type of information for the types of new information that may come out to at least allow us to consider what the hit list should be of potential activities and refinements and so forth that may be coming on. As we go through those discussions we will be able to refine and define those for seeing what level of action we can do immediately or put into prioritization to allow for getting the information needed to make action on these, if it is deemed appropriate.

MS. MARTIN: I just wanted to add after these updates are concluded I have got a platform I think that it would be appropriate to have some of these recommendations. Our next ecosystem amendment, CE-BA 3, we have a number of various measures on the list. It is very tentative; it is a preliminary list right now.

Some of these HAPC boundary revisions I do have on there just from discussions with Sandra, Steve, and John Reed about some of their observations. I think that would be a good timeframe on the agenda to hopefully get some good recommendations from the AP about – I don't know if the timing will work out.

Andy mentioned the workgroup report is going to be finalized the latter part of next year, so perhaps recommendations on priority areas and whatever the AP thinks appropriate, we would like to include in the next ecosystem amendment if we can. If not, there is obviously no statutory deadline. We can hold off until the next CE-BA amendment if needed.

MR. BLAIR: Just to say that we will kind of table that a little bit until we have that discussion on CE-BA 3 because we can discuss the timing aspects of it and how it may roll into it and when might be the best path from their inclusion or whether it is initiation of another process.

MR. SHEPARD: Quick question for Sandra and Steve or anybody else who might know. Where is the relationship to the Jacksonville site or where is the majority of golden crab fishing activity right now; how does it relate to that?

DR. BROOKE: I am not sure that the golden crab fishery goes that far north. I think Canaveral is its furthest extent.

MR. BLAIR: Gregg, do you have potentially any thoughts or understanding of that for us?

MR. WAUGH: The bulk of the fishery is down off of Canaveral south and more off of Miami/Fort Lauderdale, out of that area. But there has been activity, and we have been

encouraging expansion into that northern area which is north of Canaveral, but there has not been much actual fishing activity in that area yet.

MR. BLAIR: Sandra, I had a question. In the areas that you went through, knowing that we have this now cold water slosh if you will, up onto it that is sustaining these things; was there any evidence in any of the things that you saw of areas that looked like they may have been more productive; either live that are now just the rubble zones that may indicate a prior existence of that zone. It is hard to think that is not a dynamic situation that is coming and going. Was there any indication of areas that may have been but no longer were showing live growth so it may indicate some motion of that zone?

DR. BROOKE: You are absolutely right; the boundaries are going to be wobbly; and, of course, dead coral is a natural part of these coral ecosystems. But I would say no, I don't think we got to the boundary. I don't think we got to that wobbly edge. The CTT transect was further south and it was cold. Now, of course, that could change.

My answer is no, I don't think we found it. Now Dave and Andy may have. They were further north. But it is hard to tell sometimes because if the habitat changes, then the community changes, but the short answer to your question is, no, I don't think we were on the edge of it.

DR. ROSS: Just to add briefly to that; in addition to the work that we and Andy and et al have done there, there is oceanographic literature that helps support what is going on here in terms of a more or less permanent upwelling, but the oceanographers never put this together with any benthic biology observations.

To them it was a matter of mapping water mass distributions and temperature anomalies and to some extent primary productivity. But there is clearly a strong benthic link here and it is supported by some oceanographic literature that goes back quite a ways; long-term research on the Gulf Stream and upwelling.

It was a total disconnect there that is now tying together nicely to help support our observations of what is going on. And clearly as Sandra said, this area is not – it is not like we see a lot of small Lophelia patches, and they may have been there a few years and they may only last a few year. This has been going on with this dense rubble field and the development of mounds for a very long time; if I had to guess, hundreds to several thousand years at least.

DR. GILLIAM: I had noticed that some of your molecular genetics work was incorporated in this cruise, and my question is; is collections and that type of analysis fairly standard on these deep cruises or was this something new?

DR. BROOKE: No, it is pretty much standard. There was a paper that came out last year, this year, Charles, last year – anyway, looking at population genetics of Lophelia from the Gulf of Mexico into the South Atlantic Bight and over in the Northeast Atlantic. I know it was a combination of samples, thousands of samples that have been collected over the last – since 2005 probably. Collections for genetics are routine part of the cruises, yes.

DR. GILLIAM: I just think that is going to be vitally important, it seems like, as we move forward, we identify more and more of these areas. Although I am sure we would like to designate as much as we can, at some point we may have to prioritize and look for sound science to support some of these boundaries, and certainly looking at genetic diversity and sources of genetic diversity might be an area that we might have to look at in the future as we extend or modify these boundaries.

DR. BROOKE: Actually just a quick response to that. The interesting thing that came out of this paper was that we had assumed that the Gulf of Mexico, given the loop current, would be the source of some of the propagules coming into the Atlantic through the loop current and into the Gulf Stream. That actually turns out not to be the case.

We are not quite sure where those propagules are coming from, it is probably the Caribbean, but the Gulf of Mexico is a somewhat isolated basin as far as that connect with the South Atlantic, and then the South Atlantic is different from the North Atlantic. It is not the way we expected it to be. These things may be more isolated than we thought.

MR. BLAIR: Any other questions? What I would like to do is propose just about a ten-minute break.

MR. BLAIR: One of the things that I kind of realized, as we were going through this, that we obviously have new members present, and a little bit of background probably was appropriate before we even started our discussions regarding why we are doing it and how we got here. I apologize for not having done that, but what I would like to do is just spend a couple of minutes, literally, in going through and reviewing the process.

The focus on deepwater coral, the needs and importance of deepwater corals has been a focus for the council for many years. A lot of the research that we hear being talked about today and presented today is based on the efforts of the council to bring that focus to deepwater corals and the needs for the research and monitoring of it.

I wanted to take just a minute and outline very briefly what the basis for much of this work was. Back in the early 2000s and so forth, and obviously deepwater corals initiated back in the '80s with designation of the Oculina HAPC and work associated with that, and during the early 2000s came the greater, broader understanding of both the extent and importance of deepwater corals throughout the South Atlantic region as well as other areas off our coast.

With that understanding and grading almost explosion that it seemed like for a period of time of the awareness of the extent of the deepwater corals, the council had a strong desire to make sure that there was work being done to both better understand what the relationships were, what their ecological importance was as well as gathering information that would be necessary for their protection.

The council, besides meetings here with the advisory panel, also convened a group of scientists, researchers, agency individuals and so forth to review the present state and knowledge of deepwater corals, identify explicit and information needs for it, and develop a research and

monitoring plan for the South Atlantic region that would provide the information necessary for appropriate management and protection of the areas.

That is what was produced in 2007, the South Atlantic Fisheries Management Council's Deepwater Coral Research and Monitoring Plan. I just wanted to kind of – for the background aspect of it, because one of the things that is always extremely gratifying is to see a very focused and positive and effective effort ongoing to these things.

As we look through this plan that was made in association with a Coral AP members, Habitat AP members, and scientists, researchers and agency individuals back in 2007, this was essentially the foundation of much of the work or the basis for developing the plan of attack, and what we are seeing now is the implementation of that plan of attack.

Let alone it is nice when you see a plan and you start to see what the goals and purposes and so forth are of them and later on looking at it in review and realizing that all you are doing is just hitting every nail on the head during the process to – that is not what I wanted to do. This is just going to be a real quick synopsis of the goals and objectives of the 2007 Deepwater Coral Research Monitoring Plan for the South Atlantic Region.

The goal as it's stated there is refining existing proposed and designated new deepwater coral HAPCs – obviously, that requires a lot of new information – and increasing our understanding of deepwater corals' ecological role and function in the South Atlantic Region. This was accomplished or laid out to be accomplished in a two-phased approach, the first being mapping and describe known unexpected deepwater coral ecosystems in the South Atlantic.

It is kind of like it seemed as though we had enough information to realize we had more a drop in the bucket than half a bucket of information. The second phase is determining the ecological role of deepwater ecosystems in the South Atlantic region. One of the things that I think we have already seen through some of the information, this obviously isn't something that was approached in a first one than the other, but definitely an integrated approach to add to this information.

Under Phase 1 the first objective was to map the distribution of the deepwater coral ecosystems in Southeastern United States, and obviously with Andy and Sandra's work they were showing us an amazing amount of additional information that has come out. Really, since 2007 the amount of information is just phenomenal and that knowledge that we have gained from that.

The second is describing the physiographic environment for the deepwater corals and third objective is inventory of biota. Again, we are seeing that these things are constantly being added on, and each of the cruises that we have heard described and the efforts we have heard described are incorporating all these objectives into their activities.

The second phase relative to determining the ecological role objective is to describe logistic and coordinating efforts that could improve the efficiency and effectiveness of deepwater coral biological studies. Again, these activities themselves attest to that and I think Andy will speak to some of that as well as he discusses the other NOAA-based programs.

Describe the population dynamics movement, habitat and associations of both economically and ecologically important species in the deepwater coral ecosystems; describing the food web dynamics of the ecosystems and describing relationships amongst the deepwater coral ecosystems composition structure and distribution, both abiotic and biotic factors.

Number 5 there is describe reproductive strategies, commutagenic cycles, sex ratio, fecundity, larval development modes. Of priority structure-forming groups including scleractinians such as Lophelia and Enalopsammia, which I probably didn't say correctly, I can never get that one out. Objective 6, describe the patterns and process of colony growth and mortality calcification, carbonate energy budgets and the importance of structure-forming species and determining how they are affected by environmental factors and stressors.

Objective 7, describe the genetic characteristics of structure-forming coral populations; and finally Objective 8 was determine the nature of patterns and processes of communities of microbial coral associations. The full research and monitoring plan is up on the council website. If you haven't had an opportunity to review it, I suggest you do.

I think considering the time and really the scratching of the surface, it seemed knowledge that we had, I think it was an extremely powerful document that got put together that has focused and resulted in a lot of efforts to bring the necessary information to the table, such as we are hearing about today to help us best optimize and manage that resource.

As Jocelyn said, I agree this is not only everybody, I think all the cooperative agencies and individuals in this really have done a phenomenal job in optimizing the funds, the resources, coordination and so forth to bring out the level of information that we are getting. It is really amazing when you think of the objectives that we just quickly reviewed and hearing about the information that we are hearing, all we are doing is just pinging on every one of these objectives all the way through.

It is just a very, very, as I say, gratifying aspect to see this level of success coming through from this monitoring program. Just as I said in a nutshell I just wanted to kind of remind you and for those that may not have seen it before what the overall basis of this. Obviously, this was all the information that was both desired and needed for assisting with the generation of the Deepwater Coral HAPC as well, and looking forward to using the additional information for refinement of that as well as refinement of the management.

If there are any questions, I am going to refer them to Roger, who will answer them by phone. No, any council members have any other comments or questions regarding the initial research and monitoring plan? I will turn it over to Steve, who will be giving us an update on the Snowy Wreck MPA observations.

DR. ROSS: For the verbal record, I am Steve Ross, and Sandra and I are going to give an update on the Snowy Wreck, specifically the Wreck itself, but also a little bit of an overview of the whole shelf edge MPA process and concentrating on this one off North Carolina, which is the northernmost of the shelf edge MPAs designated as most of us know mainly for snapper grouper resource.

This mostly was developed within other APs of the council, not so much this AP, but I participated in that process. Just to zoom in on that a little bit further, the Snowy Wreck – this is sort of washed out in the screen, but the Snowy Wreck itself is there in the outer quadrant of this MPA, which generally runs a little bit past 250 meters.

It is about the outer end, I don't have that exactly what it is, it is somewhere around 75 to 80 meters I think up at this end. Along with our deep coral research we started a comparative shelf edge program mostly off North Carolina so that we could compare the deepest snapper grouper communities with the offshore deepwater Lophelia type communities.

At the time that we published our paper, this was the only documentation of fish resources within any of these shelf edge MPAs. Even though there were some more data available, this was the only published information. There were two options for the Snowy Wreck box, and I believe the one that it ended up being was this inshore line that went out to the Snowy Wreck something like that.

We also compared the reefs in this box to those further south in this area. One observation about this box, which I have made several times whenever I get the opportunity, is that 80 percent of it is probably sand. This is an example of the sand habitats that are in this sort of mid-shelf area, and this is what we would call the upper slope probably – there is this sand around the Snowy Wreck itself, so it is deep carbonate sands that occupy most of this habitat.

The prime reef habitat is in a fairly narrow band not out here, but following this 80 to 100 meter contouring and continuing on down here, so that is where actually most of the reef habitat is in this vicinity. Looking at actually some pictures from the Snowy Wreck, we were able to make one ROV dive here funded by NURC; it was in August of 2004, we had one 97-minute dive.

It is an extremely difficult place to work and it was at the outer depth limit for the phantom ROV. We had very strong currents, fairly rough seas, and a difficult time maintaining our position. Based on what we thought we knew from the fishing community and what we saw in that ROV dive, we expected that this was a fairly small wreck.

The captain of the ship at that time had been a former snapper grouper fisherman and he had fished this wreck a number of times and he said, yes, it is pretty small. We estimated it to be around 120 feet long. It has no known identity for anybody that I have been able to talk with in the archaeological community.

They don't know when it was sunk, what kind of ship it was, what its name is, or even what type of ship it was. There were some artifacts on this ship that allow it to be dated. In talking with an archaeologist later, it is somewhere around – anywhere from the late 1800s to the mid 1900s, so it is not particularly a modern wreck.

It has got an old style engine telegraph and compass binnacle, so it is sort of in that time period. Anyway, you see the wreck could have been down anywhere from 50 to 80 years, but it is completely covered by anemones. This is a deepwater galatheid squat lobster. Usually what we see, this is probably one of the dominant invertebrates on Lophelia reefs.

There is another one here and several corals. Anywhere there is a hard substrate, lots of anemones, there are lots of particulates in the water column so it is a productive area, and we are going to come back to that little sprig that doesn't show up well in this slide. A couple other views of the structure of the wreck, as you get to the upper structure there is lots of fishing line all over the wreck, so it has been heavily fished.

What apparently happened when it was open to fishing is that once it was discovered, apparently by accident by a snapper grouper fisherman, it was fished down to the point where it was not practical to fish anymore. They would take all the big fish off and they would leave it for a while and then they would continue to check it periodically; and as the population built up again, they would fish it heavily again. Apparently it was hit multiple times over the years that it was open to fishing and fish apparently recruited fairly quickly back to this habitat.

That is a point I think we want to consider later in this talk with a recommendation I have. Deep sand all around the wreck, here again more fishing line; cancer crabs, large crabs around the base of the wreck, lots of fish on the upper structure. Now, this is kind of embarrassing. This is where I have to turn in my credentials as a budding coral biologist.

My colleague wanted a slide for a talk of productivity on this wreck, and so I sent this slide and Dr. Brooke immediately responded that this wreck has Lophelia on it. I said, no, it doesn't, it just has a snowy grouper. But, growing out of the back of the snowy grouper is a nice sprig of Lophelia.

After 10 years of working in Lophelia habitat, I missed it, and then we looked at other pictures and lo and behold it is here and here, and there is a large bush of it here, and it occurred in that previous slide with the little sprig. So it is not well developed on this wreck, but it certainly occurs, and indicates there is some fairly long-term low temperature structure here, shallower than we expected it to be.

Again, lots of incrusting invertebrates, anemones and these flytrap anemones are again something that we see on the deeper reefs particularly. So Lophelia is scattered all over this wreck. Some of the fish, snowy groupers, again a large population of snowy groupers has recruited to the wreck; conger eel. In this short ROV dive we have only identified seven species of fish actually on the wreck.

There are likely more, but it is fairly depauperate, but one thing that is interesting about this wreck in this depth range is that it is a mingling zone for fish coming down off the shelf edge and fish coming up from the upper slope, so we get a mixture of somewhat shallower fish and deeper fish, so it is an interesting area.

This is about the maximum depth extent for snowy groupers that we know of in the Southeastern U.S. They go to about 300 meters, which is only 30 or 40 meters deeper than this wreck. One of the most interesting things we saw on the dive was this guy nail this big hake here. That was impressive. The new data that we have collected is somewhat off the top of the screen.

We were able to multi-beam this site with a cruise. Sandra and I have a new project in the Mid-Atlantic on deepwater canyons, which is also coral focused, but it is in Norfolk, Baltimore and Washington Canyons. On our way to that site, we needed to conduct some multi-beam tests and so we gave them this as a target and were able to collect some fairly detailed multi-beam bathymetry.

What we thought was a 120-foot wreck turns out to be nearly a 400-foot wreck; a lot of it buried in sand at this end with a strong current scour. This is a hole around the wreck on this side, and mostly the Gulf – this is north up, so the Gulf Stream is coming across the wreck like this. You can see it scoured out an edge of from about here to here is about 400 feet.

This is showing the vertical profile of the wreck, which covers about 70 feet, but some of that is current scour. At the tallest there is about a 50-foot profile, and it appears at the base of the wreck that a substantial portion of it is under the sand. This is a much larger feature than what we thought. These three red dots represent three different points in our 2004 ROV dive.

We started here in what we thought was sand off of the wreck and it was not; it was sand overwashing part of the wreck. We moved over to this part of the wreck which was high profile, and we worked along this edge, only this edge. We never got up here. We were not able to because of the currents. We worked back through here and then ended up in the sand again.

Our view of this wreck was fairly restricted. We had a fairly well-known archaeologist on this cruise because there is an important archaeology component to the Canyon's Project. He helped us date this wreck approximately. He said as far as he knows there is no known record of it. It doesn't mean it can't be found, it is just nobody seems to know where this thing came from.

It could be a World War II wreck, but most of those are documented at least with some kind of approximate position. It is somewhat of a mystery, which adds some significance to the site archaeologically. We have a few recommendations to end up this talk. We could consider that this wreck has some coral resources and we might want to note that under the coral HAPC, but it is also already protected under the MPA designation, so that might not be necessary.

We certainly feel that with the limited investigation that we have been able to do, that this wreck should be further investigated. Even a short cruise here would add substantial data with the right amount of tools. Even a three- or four-day cruise on this restricted site would be very worthwhile, I think, in terms of documenting the snapper grouper resource, but also trying to get a handle on archaeology and the benthic encrusting invertebrates like Lophelia on this wreck.

Doing that, it would very easy to put down a one-year environmental monitoring package, which would give us temperature records to see what is going on with the wreck. We did have a very short project funded by NURC to put an acoustic monitor on this wreck, and we tried to do that in 2005 but our ROV dive failed. We were unable to do that.

But this wreck is quite isolated, so of any of the places that we might be able to acoustically monitor grouper spawning, this would be one of the prime candidate sites, and that has never been done with snowy grouper to my knowledge. This recommendation I think should be

considered by the larger council in that if you wanted to rebuild snapper grouper resources, particularly something like snowy grouper, you would put artificial reefs in a place where habitat is limiting.

You would not put them in a place where habitat is not limited, which is on the shelf where most of the artificial reefs go. It seems likely that we could substantially add habitat in a place where habitat just doesn't exist. Hard bottom in this depth range from about 150 to 250 meters from North Carolina to at least Georgia is fairly limited; at least from what I have seen.

This is an area where snowy groupers will accumulate significantly if there is habitat. Particularly if you placed artificial reefs within a protected zone, this could have a substantial impact on the population. I think that would be worth considering, and it certainly would be an interesting experiment and might add to our management of that complex. Just briefly that is what we have on the snowy wreck. We think revisiting it seems like it is more important than what we had thought.

MR. BLAIR: Thank you, Steve. Are there any questions or comments at this point?

MS. KARAZSIA: Have you thought about what type of artificial reef, like structure or the design; what do you think would fit well in that site?

DR. ROSS: There really isn't any magic there. High profile is what you would go for in almost any habitat to attract snapper grouper, something substantial. It would have to be fairly substantial in those currents because there is a fair amount, as we see with this wreck, a fair amount of sand overwash.

It would have to have a reasonable amount of mass and a reasonable amount of profile. I know those are vague terms, but in this kind of depth you could go with a really large structure. Some of these large surplus ships that are coming available, this would be a great area for that, old Liberty ships, but something large I think would be a good thing.

DR. FEDDERN: Have you found any orange cup coral on those wrecks that are out there?

DR. ROSS: No, but that doesn't mean it doesn't occur, and I don't think Sandra – well, I probably shouldn't answer that question, obviously. I don't know what is on there, I don't think so.

DR. BROOKE: Are you talking about Tubastrea, is that what you were referring to, the Tubastrea?

DR. FEDDERN: Yes.

DR. BROOKE: No, I didn't see any on there. Tubastrea, it's a warm water species, I don't specifically know the depth range. I think it has been found on – Dave probably knows more about this, but it has been found predominantly on artificial substrates in shallower water.

DR. FEDDERN: How shallow?

DR. BROOKE: I think in the photic zone as far as I know. Dave, do you want to address that?

DR. GILLIAM: Yes, from my knowledge, in Southeast Florida, I know Ken has done some work. It has only been – well, you probably know as well, Henry. It has only been seen on artificial structures, but I don't think anyone has even looked deeper than maybe 30 meters or so. Whether it goes deeper than 30, I am not sure, but I don't know if anyone has actually seen it on a natural reef yet.

AP MEMBER: Not in Florida, they found it on limestone and ships, but in the Bahamas you find it under cuts in the natural reef.

DR. BROOKE: Yes, just going back to the artificial reef question, Jim Oppenborn off of St. Lucie County has been putting down these large tetrahedral structures in his area and he has been incidentally trying to get artificial reefs in the Oculina Banks for a while, but that is a whole other discussion. In talking to him, he has ostensibly created a group of spawning habitat with – it is either a wreck or some of these artificial tetrahedral structures off of St. Lucie County. Those have been successful and they have got Oculina growing all over them, so they are good coral substrate also.

MR. BLAIR: To kind of work towards – as Steve said, obviously you want to put the habitat where habitat isn't, that is when it is most beneficial. The idea of siting it in those areas seems reasonable if the state or entities have the ability to be able to have that occur. It is not quite if you build it they will come but something will. There are abilities to be able to target these things a little bit more towards the types of size range, reliefs, and so forth that would be more beneficial to certain groups. It does seem as though an approach for consideration, for sure.

DR. BROOKE: I just wanted to say I talked to the FWRI – I forget his name, but anyway it is somebody that is in charge of the artificial reef program – about putting artificial structures within protected areas. Apparently there is some sort of problem with that, because they are paid for by public funds and so the public wants to have access to them as a fishery resource. I don't know, this would have to be through some other mechanism than the artificial reef program because it is not going to fly to protect them. That is my understanding.

MR. BLAIR: That may be dependent on how those artificial reefs are placed. A lot are privately funded aspects that are using permitted. Now whether it comes into play because they are publicly permitted areas, although we have management practices that restrict access, restrict gear and so forth within those, it seems that with an appropriate potential management response to that that may be a means of allowing that to occur. Ken, you had a comment?

DR. BANKS: I just had a question for Steve about have you looked at the snowies and their feeding behaviors and gut contents to see if they are feeding within the artificial reef structure or are they making excursions out away from it.

DR. ROSS: No, I haven't. We weren't able to collect any fish from there and that would be a really good question for any of these reef habitats is to see what kind of excursion there is for the large predators. All we saw was that one feeding incident where the snowy nailed that hake that was very close to the wreck.

I have seen indications that snowies move considerable distance as adults, and they probably feed as they go opportunistically, but there is a little bit of information on their feeding habits. They are more difficult to work with because when you bring them up from deep water they evacuate the stomachs and blow them out, so the data that you get are not as good.

I was going to make an observation, too, just as an addition to that. In the Gulf of Mexico one of the shallowest deep coral sites is around 300 meters, and that is also a concentration area for snowy grouper. There is relatively little habitat in the Gulf of Mexico in that depth range as well. It seems like wherever you can put structure and benthic productivity, these fish are going to go their preferentially whenever they can, down in this 250 to 300 meter depth range.

DR. BANKS: One last question or a comment. I think before you did artificial reefs in a place like that, you really have to understand the reef sediment or soft bottom interactions and energy flow to make sure you plan it well and not just dump a lot of structure on soft bottom, ruling out soft bottoms value like we tend to do in shallow water.

MR. BLAIR: I think part of that is also, as Steve pointed out, as you say is the placement. We don't have a lot of space in between the reefs, so that the artificial reefs become close to the reef. But in areas that are open like that, yes, that is a good consideration, to make sure that there isn't a conflict or minimization of the interaction and use of those. I had one thing relative to – and I apologize, Steve, if you had already discussed it – for your environmental monitoring aspects of it, how were you foreseeing that to be accomplished and what information are you trying to get from that effort?

DR. ROSS: The most basic and probably most valuable factor would be benthic temperature. That is extremely inexpensive and easy to put down in an ROV dive. If you thought you were never going to be able to get back, there is a way to trigger that to come to the surface independent of an ROV.

I think we have been doing a lot of work with benthic landers, some of which are large and have a whole array of instruments on them, and that is another possibility as well; remotely deployed benthic landers that would be near the site. That is fairly straightforward. If you get one cruise out there, there are a variety of topics that you can touch all in one place.

Just going back to this map here again and looking at that scale issue that Ken pointed out; there is a lot – as far as we know, there is a lot of open substrate territory out about here that would be valuable, and I agree with him in terms of making sure we are not covering up something else that is important.

MR. BLAIR: Are there any additional questions?

DR. FEDDERN: Has anyone identified that snowy wreck as far as what it is and what it was carrying?

DR. ROSS: No, and that is why it has some I think increased archaeological interest. When we thought it was a very small wreck, there was a chance it could have been a private vessel, but at this size it was not a private vessel. It is unlikely a 400-foot vessel would be, so we don't know its cargo, its date of construction, any of its provonauts. That makes it a little more interesting from the archaeologist's point of view, perhaps, too.

MR. BLAIR: Okay, thanks Steve, really appreciate it. Next we are going to hear an overview of NOAA's Deep Sea Coral Research and Technology Program Data Management Plan from Andy Shepard.

MR. SHEPARD: This is a good thing to wrap up with on this South Atlantic Program. The slide you can see first is a NOAA slide from NOAA Fisheries Service. I don't know if everybody knows but the Deep Sea Coral Program has been moved from the Coral Reef Conservation Program to NOAA Fisheries in recognition that a lot of the results from these expeditions are intended to be of use to scientists and managers.

Having said that, the Deep Sea Coral Research and Technology Program, which I am going to call Deep Sea Coral Program for shortness of breath, recognized right away that as we – and this is based on many years of experience of dealing with people like Steve and a whole slew of science partners who traditionally when they go out on these expeditions they work around the clock and they collect all kinds of information. Frequently this information, some of it is archived, but frequently it is kept in-house for the research publications, rightfully so, that need to be done, as a major outcome from these activities.

Concurrent with that, the Deep Sea Coral Research and Technology Program also realized that it had to have some obligations. I am going to go through those obligations and the ways we are addressing them in terms of providing public access, working with the scientists to garner fast turnaround products.

And I am not going to go into any detail about the SEADESC products because we are talking about them in other talks, but that kind of product that would be of immediate use to the management community. I am going to jump to the last slide because by the time I get there you will understand it, maybe.

This is Tom Horrigan's attempt to summarize the whole mess. The idea of this whole mess is to come up with a national system, because the Deep Sea Coral Research and Technology Program is not stopping now, it is going to other regions. Its plans are next to move to Alaska, I believe is the next major region of emphasis. It is going to go to the northeast; it is going to go to the California coast eventually, assuming funding stays – what is that? Just speak up.

DR. BROOKE: The west coast is right now and it is going in Alaska the first –

MR. SHEPARD: Okay, west coast and then Alaska. It is trying to come up with a system that can be applied across all those regions. As you can imagine, there is tremendous variety of ecosystems. We are looking at a tremendous variety of types of approaches that are taken to going out there.

It is a real challenge for a program like this that wants to be national and has a variety of different approaches and ecosystems, to pull it all together into something that can be used 10, 20 years from now and built on over time. I will go back, but you are going to see these various pieces as I talk about them.

I will end with that and hopefully you will see how it is all connected, starting with the mandates and then our data management objectives and then the products that we are looking at and then this concept of an agreement, so to speak, with the scientists who are working this program. We are calling it the Data Management Guide from the Deep Sea Coral Research and Technology Program, but we have actually been applying this already on individual cruises like the Ross and Brooke cruise where we set up a signed agreement between the program managers and the scientists to say here is what we expect and here is what we are going to deliver, and everybody understands before a cruise goes out. They don't always listen, but I hope they understand.

Again, I am not going through the authority in any great detail here other than to say again what drove them. The bottom line there is that sound scientific information needed to conserve and manage deep sea coral ecosystems. That is a little different than the objective, say, of a Dr. Ross who might go out and really be interested in the science of these things and want to produce the kind of paper that Sandra mentioned on the genetics of these things. That is critical, a critical product, but there are all kinds of maybe interim products that could be useful on a fast turnaround time for managers as they have to make decisions.

I have been on this data management team now for about a year and we meet way too much. Every two weeks or so we have a meeting to try and stay on top – thank God, because it is a good way to communicate and keep evolving these things, because this is fully intended to be a dynamic effort.

We are constantly changing the products, the expectations. We are trying to come to something as fast as we can. The South Atlantic was the guinea pig in this. I mean that in the kindest way, you know, the little cuddly in a way. But they have been essential; the science team and the South Atlantic Council and the South Atlantic Region has been essential to us getting much closer now I think to an integrated system.

What our objectives in the data management team were, number 1, we wanted to create things that would inform management. Two key things were the habitat characterizations and a real tough one, but it looks simple up there, but locations and abundance density of corals and sponges. That is much harder than you would imagine, and the commercial species, the finfish, for example, and shellfish.

We want informed analyses, we want to have these data be available to feed things like the habitat suitability modeling that you saw in an earlier talk. I don't like to put myself in this term

because it means I have got even more regulations above me, but NOAA is making some sincere efforts now to abide by a data management plan, an enterprise-wide data management plan, and they are pushing that.

They are pushing that but basically at the line office level; I think less at the AA level, the top levels right now, but there is Larry Robinson, who is the new assistant or Deputy AA, whatever those acronyms are, is now in charge of a science integrity policy, and a big part of that science integrity policy for NOAA has to do with data management.

They are very sincere about, number 1, public access, another big bugaboo for working with the science community that has to publish or perish, but it is a big deal for them. Metadata and record keeping, God I hate the word metadata; I can't emphasize that enough. I have had to create these records now for some of these cruises and it is nightmarish, but also I greatly appreciate what it is for.

Once you get into it, you realize how important it is as a legacy tool for people to understand what that data and information was that you collected and how you collected it. You know, how can I repeat it again? The basis of good science is being able to replicate, and these kinds of things are important for that.

Then they want a national system with science rigor and merit; a loaded statement, but there are all kinds of parts to that. One of the big ones is taxonomic identities. Looking at pictures is not the best way to identify things, but when you are working in deep environments like this it is hard to collect all the voucher specimens you would like to have in hand; not to mention get these all identified by the proper sources.

It is a real challenge within this to create a national system that you can go to and count on. Then consistent habitat classification schemes, there never has been that. Each individual investigator has a way of classifying the habitat and a way of describing it, and coming to some kind of system that would have common language is a real challenge, but this is what we are shooting for. We have a series of program-wide products.

I am going to divide these into immediate and longer term, and I am not going to put days on it, because, boy, that has been one of the things we have argued about enough, but let's just call it immediate and long term. The immediate products – dive sample and video annotation logs are a critical part.

I put this all together into kind of a logbook, but it is really just a Nextel spreadsheet. These are real important pieces of information especially for the kinds of expeditions you have seen. One of the most critical pieces of the puzzle in all this is the video annotation logs. The intent is to – and in brackets you are going to see here the archive, where we intend to keep things.

Right now these things are going into the Deep Sea Coral Research and Technology Program. They are really not NGDC; they are really not – again acronyms – National Geophysical Data Center; NODC, National Ocean Data Center. These are like national NOAA archives for data sets and you are going to see those acronyms.

When you see DSCRTP, it means that they are archiving them at the national office. They have a data manager there. The multi-beam bathymetry and back-scatter data and various derivatives from that are going to the National Geophysical Data Center. The video and still images, the NOAA Central Library right now is the place that we are intending to archive that, along with a little different kind of metadata record called a marked record, which is a library metadata record.

The dive track files are being kept so that when Steve or Sandra shows you a track that consists of many thousands of points of latitude or longitudinal XY, or whatever in a depth, those kinds of dive track files have to be all – they are not really immediate. You have to clean them and do some work to get them correct, but once they are processed and cleaned they are stored at the DSCRTP.

Center data files, as you have seen already, CTD files are a critical piece of information as we move forward especially with using things like suitability map modeling to extend our big picture of things when we can't go everywhere with an ROV. Those sensitive data files will be kept at the National Ocean Data Center.

The cruise report with summaries for ancillary studies, which means basically when Steve goes out and he collects this specimen, where is it going and what are those people doing with it, whether it is genetics or isotopic analyses, or anything else, there are summaries in there and a cruise report; that will be a PDF type thing kept at NOAA Central Library; and on the coral reef information system, which is called CORIS. We want to keep a copy in each of those places.

Then the metadata records, anytime you put anything in NODC or NGDC, and NCL for that matter as far as a marked record; you have to have a metadata record. You are required to have a metadata record and it has to be FGDC compliant. Do you want me to spell that one out, probably not, but for geospatial data it is the accepted national standard for what a metadata record has to look like. Those are the immediate products that we come off -- almost come off the ship with, except for some post processing, maybe a month or so after the cruise.

Then there is this process products that are longer term, starting with one category is the dive summary and site characterization. I am not going to spend any time on this because later there is a talk on the SEADESC log, so that is exactly what we are talking about. I cannot emphasize enough, this is like one of the – this is not a brilliant idea, it has been done before, but to make it consistent and do it routinely is a tremendous sacrifice by the science community and a tremendous contribution by the science community to management.

It takes time and it takes effort, and they are sacrificing time that they have to do on science publications, just going straight forward to science publications. When it is done I think you are going to have a really good tool for knowing what is there. I mean just knowing what is there, what is living there, even ideas about why it might be there, it will be a great tool for you being able to do that in deep water areas.

It is a site characterization that goes with it, so not just that dive but also a series of dives in an area trying to characterize what is in that area. You get a much better picture that is relevant to

the management community. Now this NOAA Deep Sea Coral Geodatabase is built on a USGS product that was done, but it is going to be new. I guarantee, Steve, it will be new.

They are not going to be able to stick it right into – Kathy Scanlon did a database of coral records mostly from museum archives; that is where they got most of their information. They did a few cruises. We can add much more information to this, but it can't be exactly what that was. They are still working on this National Geodatabase, but what it should do is tell you where things are by species or the lowest taxonomic information we have.

It should be available online as well, and it includes sponges, which as Steve said is a real challenge as far as being identified and quantified. Science publications are a big one for them, too, and that is further down the road. We are talking about, with science publications, maybe two years out. Some of those other things we are shooting for may be 180 days after a cruise is done.

I only bring up this one issue of video annotation because it is such a critical part of the puzzle. As you have seen, the pictures are a thousand words. They are also a key source of the data that we make these assessments, both habitat characterization and locations and density estimates of corals and sponges. There are many challenges to it.

For example, I am not going to read them word for word, but you saw slides of Lophelia. Lophelia doesn't lend itself to counting the way a Gorgonian does. It is weedy is a good way to put it. You just don't drive along and say there is a Lophelia. Steve could do it with those little sprigs, but when you run into these Lophelia mounds, it is a much different environment and it is not the kind of thing where you can just count them.

DR. ROSS: Actually, I didn't.

MR. SHEPARD: Sandra caught it; Steve missed. That is a big challenge in determining how you go about dealing with those kinds of ecosystem differences. As I said, how to record a substrate and classify these habitat types, which scheme do we use? That can vary by how you collect your video. When you see how some of this video is collected, you can see there is a big difference in what information you can pull out of it.

The validity and certainty of the taxonomic identifications, that is a real challenge. When you are driving along with your camera pointed up and you are 1 meter off the bottom versus 3 meters off the bottom, there is a big difference in what information you can pull out of that video. Then just differences in methodology; some people point it down and some people point it up, and they have different objectives for those kinds of deployments and those types of configurations.

What we have to do is we have to set up some criteria and understanding of when Cruise A comes back with a set of video, what was it for and how accurate and how useful is it at a certain level of resolution? In this case I didn't create this slide, Peter Etnoyer created this slide, and Peter has been working with deep sea corals for a while and using various kinds of video.

He puts the accuracy low at the bottom, high at the top, and then difficulty easy on the left and hard on the right. It is easy and low accurate to just say presence and absence, say, of dominant species. It is hard and higher accuracy, a desired accuracy to get a density; a density by species, say, and at a significant resolution, 50 meter scale, not a 100 kilometer scale.

The reality is it is somewhere in between frequently. Frequently it is going to be a categorical abundance or a numerical abundance for some things and not for others. The reality right now is I think we are somewhere in the middle. I think the Deep Sea Coral Research and Technology Program would love to say we want to be upper right in everything, but that is not really the reality at this stage.

You talk about the methods to do these things; again the accuracy low to high on the left, and the spatial scale you could think of easy and coarse or fine and harder. You have these different approaches you could take, and in reality what we are doing and what we are coming to is trying to get everybody to put all those approaches on an ROV.

Andy David showed you the torn umbilical. Well, that camera had everything that system had everything but it was the phantom that replaced it that didn't. You end up with these kinds of challenges where things don't work and you don't have enough lasers or you don't have enough high-definition cameras available to do the work.

Again, we end up frequently somewhere in the middle, but we are shooting for the upper right. Here is a picture that I got from Oculina. This is work we had done in Chapman's Reef. This is a picture with a straight-down camera. It was a still camera with a strobe and it is shooting straight down; very good for doing percent cover.

So if you looked at this picture and you are driving along – and I am going to show you the video that coincides with this picture in a second that was looking up and out – you might look at that and say, well, it looks like it is about 70 percent sand and some dead coral, maybe a little hard ground in there.

I wouldn't necessarily look at this and characterize it as a living coral reef. But when you look up, that is what we were running into during that same timeframe as we were moving along the transect. Steve can attest when you are in a Lophelia environment, a lot of the time it is like that, and it is not unusual for a downward-looking still camera to grossly underestimate. I don't mean that either one is right, but I just mean it is frequently the case that when you are driving along with your camera up, you have a better overall sense of where you are of place and what is around you, but it is not easy.

Now what do I do percent cover on that one; how do I do that? Do I just flatten the whole thing out like a Mercator projection and say this is what the coral cover is? You can't really do that either, so it is a challenge that we are faced with that I think we are coming to some good conclusions with this video annotation log. I put a draft on the CD. That is just a draft.

We are still refining it and working with it and going back and forth. I just want to emphasize none of this stuff yet has been finalized to the point of where – it will be finalized when Steve or

Sandra apply for money and then they are given this thing and say here is what you have got to do, here is what you have got to do.

That is what the coral conservation program wants to get to. It will be within this guide, so this guide will go out before people get money and it will tell them specifically what they have to deliver. Then Steve or Sandra can say, no, I don't want to do that and not take the money or not do the work, if that is the case, but that is what this agreement will hope to do.

As I say, it serves as an agreement with the investigators to ensure the data that is needed is shared and the information is on schedule and it serves both their needs and the management needs. I want to emphasize that, the Deep Sea Coral Program I think has been very good, especially the lead, Tom Horrigan. Van has been involved with this, too, and Andy David has been involved with this.

It has been very good at adapting and being flexible and trying to – as well as the scientists, obviously. There we are, that is what we are trying to pull altogether. I think we are probably very close to being able to put this package together, thanks to the South Atlantic Region, for the next regional assessment. That is it; I don't know if you have any questions.

DR. VAN DOLAH: Andy, I applaud the effort to make sure all this data gets in an accessible suite of data bases, and I know it is difficult to get to some of those stages, but this is the right way to go, for sure. My question is, I think one of the first and perhaps most useful products out of all of this will be to at least identify the location, by presence and absence, the simplest of the layers, if you will; where these reef habitats are in one integrated data base.

This is what we tried to do on the shelf with the historical SEAMAP bottom mapping kind of thing. At its simplest, it is here or it is not here or there is no data here. I have seen some really great stuff this morning and it is scattered. It is detailed where it is, but to get that available at a regional scale I think would be a really useful first product.

MR. SHEPARD: The SEADESC log is one of those approaches. Right now the SEADESC logs are PDFs. They are just putting them in documents, but our intent was to develop it as an online relational data base or a GIS or Google Earth mapping presentation. That is the long-term intent for it.

We are doing a lot of down the line—in fact John Reed has got some money to do historical dive logs based on Harbor Branch Oceanographic, and I think that is being funded by the council. Yes, and Steve is going to tell you about his logging effort that he has done over the years for Ocean Exploration funded as well as USGS and MMS and council dives. I think in the long run these things should be put into a say a Google Earth type presentation where you could access these things. Then there is the habitat suitability model here. I think down the road that needs to be informed. That habitat suitability map you saw was wrong, but it was a good first cut but it doesn't do the trick.

DR. VAN DOLAH: Just a follow-up comment. Maybe I just didn't know where to look, but I know we just finished a GIS mapping effort for South Carolina Coastal, primarily shelf waters,

but out to 200 meters, looking for readily accessible LAT/LON data on presence/absence of reef biodel. It wasn't readily available or obvious to find for us. Maybe it is there and we just didn't know where to look. It is that kind of thing that would help inform where critical habitat is and needs to be avoided in some of these CMSP efforts that are likely to get underway in the region.

MR. SHEPARD: Yes, when I said that it was going to be at the DSCRTP; all those video annotation logs will have position information. I will show you the log and they should be the kind of things you can ingest into your effort.

MR. BLAIR: Other comments? Obviously things that you pointed out for some of the difficulties in doing some of the assessments and grading and so forth, it is very similar to what we often deal with even in much more shallow habitats, and the challenges still exist in the same aspect of trying to be able to get the appropriate information as quickly; different purposes for it.

A lot of it is getting as much information and optimizing field time in the same manner. The idea and the ability to accurately get that information from remote, whether that is a photograph or other means, is still a challenge. I also wanted to ask if that fish slide in the second to last one was photo shot. That was one of the more disturbing fish shots I think I have seen in a long time.

DR. ROSS: That is actually a new record of goosefish from this area, called Sladinia. It is previously known from South America. I don't know where that picture came from.

MR. BLAIR: Andy, I know that you didn't want to put timelines to a certain extent on this thing, but obviously this is a huge undertaking, a lot of integration and so forth, and development yet to occur on it. What is the conceptual framework for when these elements are more readily accessible and out on the net or other aspects of that?

MR. SHEPARD: I think that is a good question. Just because I say that some of these things are already at NODC or NGDC, I think there needs to be some communication with the council more routinely about when these things get posted and what they are. We really don't have that yet.

I think one of the recommendations to the Deep Sea Coral Research and Technology Program that I will make when I get back is that we need to have a routine communication when things get posted, maybe a list serve, I don't know, or just go to Anna and say things are posted. .

MS. MARTIN: I was just going to add that would be really helpful. If there is anything I can do to help facilitate that greater communication so we will have better understanding of when they are available and posted, that would be great.

MR. BLAIR: Part of my point was thinking of the effort that the council already has in its mapping efforts and so forth, the IMS to be able to have those in some manner connected to or integrated into that might be part of the issue of being able to make these things even more readily accessible, as well as reflecting council effort and support for these products.

MR. SHEPARD: Yes, there is no reason – I don't believe there is no reason that the council's, for example, GIS site couldn't use any of these things, including the bathymetry and back scatter that is collected. If it goes into NGDC, it should be suitable for your ingestion as well in your system. The other point I was going to make is that obviously there is a timeline here for everything to be drawn together in the synopsis, but that doesn't help you on a more routine monthly kind of basis.

MR. BLAIR: Okay, that kind of wraps up our research updates, and I think we have had a fair amount of discussion, including a lot of potential things that may come out as action items or recommendations that I think we could make. Unless there is any explicit comment or question, what I would suggest is allowing us to go to the next presentation that discusses the Comprehensive Ecosystem-Based Amendment 3; and give that as the kind of background and basis for the vehicle that may come into some of the recommendations as well as whether or not some of these recommendations are appropriate for this Ecosystem-Based Amendment or perhaps a future one.

I have initiated a list and definitely want to ensure that we have got everything on there; but if it is okay with the panel members, I would suggest we have the next presentation on the Ecosystem-Based Amendment and then discuss a series of potential recommendations that have come out of these research updates we may amend as the meeting goes on and see how that may fit into that framework. Is that all right? How long is your presentation?

MS. MARTIN: I guess it depends on how we proceed with any recommendations. We have probably eight different items on the list for CEBA 3.

MR. BLAIR: Okay, maybe it would be better than to go ahead and break for lunch and we will bring this in to start off the afternoon with that. I will take a recommendation for time. Is an hour going to be sufficient?

MS. MARTIN: Yes, an hour, whatever.

MR. BLAIR: Well, if we are doing this and kind of going along I think we are going to have kind of a busy afternoon, too, so I would say if we can, to the greatest extent, let's be back at 1:15.

The Coral Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Hilton Garden Inn, North Charleston, South Carolina, Tuesday afternoon, October 25, 2011, and was called to order at 1:15 o'clock p.m. by Chairman Steve Blair.

MR. BLAIR: Okay, we need to get back together, please. We do have a full agenda that as always it seems to get more full. We want to go ahead as we had a lot of discussion this morning and I think some good ideas for recommendations that we may be interested in bringing forward to the council. What we are going to look at now are items for consideration in the Comprehensive Ecosystem-Based Amendment 3.

We feel that this is essentially going to be the vehicle via this amendment or another that will be the essential vehicle for potential implementation of recommendations that we may have after vetting and through the council as well as any follow-ups and additional information that is needed. Kind of with that, Anna, in the process of doing it, not just what is in the Comprehensive Ecosystem-Based Amendment 3, but even the process or the thoughts the council has for utilization of the CE-BAs for the process for these implementations would be appreciated.

MS. MARTIN: I have got a few slides here. I have mentioned earlier this morning we are just getting started with this. CE-BA 2 was formally submitted in June and now the council is kind of setting sights towards, well, what types of measures do the APs recommend that the council consider addressing in this next amendment.

The idea behind these ecosystem amendments, they are comprehensive in nature so they are addressing issues that go across fisheries. It is not specific to coral and not specific to snapper grouper management, but an amendment that kind of deals with the whole holistic approach, a whole number of measures.

That is kind of the approach we are taking here with this next amendment as well. There are a number of items currently on the docket for consideration here. Some of these have been discussed in previous amendments and others, as we have heard about earlier this morning, have been brought forward by the latest and all of the really cool South Atlantic Deepwater Coral Research that has been going on for the past several years.

What I would like to do is just review this list with you, and I also should let you know we don't have a formal document yet. This is very much a working list. We are seeking the Coral Advisory Panel's guidance in further developing the list, adding additional measures for consideration. The council is kind of leaning toward some guidance at this stage.

The bulk of work on this amendment will take place next year in 2012. Just to give you a little bit of an idea of the timing that we have thus far, the council is looking to approve a comprehensive list of measures to take out for public scoping during the next council meeting, and that will be the first full week in December in Raleigh. The public scoping process is one initial step in the development of a document, and so public scoping is scheduled for the last week of January and the first week of February in a number of different cities already scheduled from North Carolina down to the east coast of Florida. I believe we already have our schedule listed on our website. I am not sure; I will have to verify that.

That again is with the understanding that the council would approve a list for this next Comprehensive Ecosystem Amendment for public scoping process during the December meeting. Obviously, the advisory panel will have several opportunities next year to provide input and weigh in with the specific actions and alternatives and analysis that will in the future be developed here.

We don't have plans yet for a meeting, but we can talk about that a little bit later as the meeting progresses for next year. It may be that we need to convene based on the timing of this next amendment more than once during the year. Also, because this is structured to incorporate many

different measures, it is important to note that our Ecosystem Committee will work on measures respective to deepwater coral management and also any habitat impacts.

This would include the any boundary revisions that the AP recommends proceeding with here and also any habitat impacts that may be associated with the commercial wreckfish fishery. Our snapper grouper committee will be addressing measures specific to snapper grouper management, including powerhead prohibition off of North Carolina and added protections for speckled hind and Warsaw grouper, which may include possible marine protected area expansion.

MR. McFALL: Why is the powerhead ban just being considered off North Carolina?

MS. MARTIN: The council has received a request from the North Carolina Commission to consider this off of North Carolina. Currently they are only prohibited in federal waters off of South Carolina, and at the time that designation was put into place none of the other South Atlantic states had requested it be considered.

Basically the North Carolina Commission has come forward with this request. They have developed an issues paper about the situation and they have asked the council to address the issue. I will mention that in a future slide. It may be that they will be looking to other South Atlantic states as well, but right now in this preliminary stage what we have is the North Carolina request.

I have just covered this primarily, but just to give you the idea of where this measure on the list of items for consideration comes from, it is the North Carolina Division of Marine Fisheries Issues Paper that was coincidentally developed by Brian Cheuvront, who is now a South Atlantic council staff economist, but previously in his position at North Carolina DMF he developed an issues paper about this situation.

This was in response to concerns of depletion of larger snapper grouper species, primarily through – I guess there was a 2010 spike in the numbers of use of powerheads by commercial fishermen off of North Carolina. That is a concern that they have requested the council consider taking action, and that is what is going to be done here.

I am sure you are all familiar with this measure. This comes from the first Comprehensive Ecosystem Amendment, so in CE-BA 3 we will be revisiting an issue that surfaced in CE-BA 1 and trying to assess whether gear impacts from the commercial wreckfish fishery jeopardize the integrity of deepwater coral habitat. As you know, the wreckfish fishery is a bottom-tending hook-and-line fishery.

The technique is using a 30 to 50 pound sinker, cable and terminal rig while motoring against the Gulf Stream to try to maintain a constant position on the bottom. Now this is a gear type that is allowed within the HAPCs, and currently it is unknown whether or not this gear type and technique has any impact on bottom habitat.

We do have some submersible dive observations that have shown wreckfish associated with deepwater coral mounds and hard bottom habitat within Lophelia communities. Also, we know from dive records that wreckfish have formed dense aggregations and spawned within the Miami Terrace HAPC.

DR. BROOKE: Unless you have got other corroborating data, we don't know that they are spawning aggregations. There are definitely persistent aggregations much denser than we have seen anywhere else, but I am not aware that anybody has shown that they are actually spawning at this point unless you have other data.

MS. MARTIN: Okay, thank you. I think there is some concern about implementing a prohibition off of one state and not considering the entire EEZ of the South Atlantic, even though this has already been done in South Carolina federal waters. This isn't necessarily a question for the Coral AP but more for public scoping purposes.

I think there is some interest in determining whether public input would lend towards the council possibly addressing this off of other states as well. Okay, in addition to the commercial wreckfish fishery gear, we will also be considering whether other recreational deep-drop fisheries incur bottom habitat damage through gear impact.

There isn't a whole lot of data on these two issues, and again this is preliminary at this stage. We don't know what we can determine from these two issues, but we do have them on the list right now; and for public scoping purposes, there is some interest in collecting more information about these two issues.

Okay, moving on through the analysis of Regulatory Amendment 11 and finding that the 40 fathom closure that was implemented under Snapper Grouper Amendment 17B is no longer necessary; in this next ecosystem amendment we want to consider measures for protecting two mid-shelf species undergoing overfishing, and that is speckled hind and Warsaw grouper.

The council has already had some preliminary discussions about how to provide additional protections for these two species through more targeted marine protected areas, expansion of current marine protected areas, and a possible spawning season closure for speckled hind. Andy David will hopefully talk about this in a little more detail.

They have been doing some work on the marine protected areas collecting post closure data. They actually have data going back since 2004. Many of their findings and the project they have been doing out of the Science Center there will come into play with some of the management considerations here and if the council chooses to consider expanding some of the currently designated MPAs.

The next few slides kind of touch on what we were discussing this morning with the latest in deepwater coral research, and so again we are seeking the Coral AP's guidance here. From a timeline perspective, we are not sure if these will be more properly placed in this upcoming amendment, which as mentioned the bulk of work does take place next year.

It will likely not be a quick and easy process, but again we need to rely on the final workgroup reports and so it may be that recommendations are better suited for the following ecosystem amendment, which would be CE-BA 4. It will be helpful from the AP just to provide perhaps some recommendations here with the next few slides and there may be some additions you would like to see added to this list as well.

Again, just a recap, as we have heard, NOAA's Deep Sea Coral Research and Technology Program has focused the last three years of research focusing their efforts in the South Atlantic. There does seem to be some compelling evidence for expanding and refining some of these HAPC areas that were designated in CE-BA 1 and even earlier.

Now, it is important to note that when the HAPCs were approved by the council in 2009 and later implemented in 2010, they were done with the understanding that once more data was collected the council would likely need to revisit many of these areas to better capture the coral habitat, so that is what we would like to do here.

Regarding the Oculina HAPC, as Andy David did mention, the deep sea coral expedition in June discovered new mounds in areas far north of the current HAPC boundary. Scientists were able to map several areas of the outer continental shelf between St. Augustine and Cape Canaveral and discovered the new mounds just off of the Daytona area, which are north of the current HAPC.

According to Andy, this is a measure the AP may need to wait to receive a final recommendation from the deep sea coral report, and it may be that specific recommendations from the AP are premature at this stage. As presented, a shallow water Lophelia site was first examined during the Pisces Deep Sea Coral Cruise in November of last year. As you recall, they stated this does represent the shallowest known community of Lophelia in the southeast region, and it does lie outside of the boundaries of the Stetson-Miami Terrace HAPC.

As Sandra presented, based on new multi-beam data from a 2010 research excursion, a recommendation has surfaced to consider refining this boundary as well, the Cape Lookout Coral HAPC, to expand the areas north of the current boundary. Again, we are looking for a recommendation. If this is something to pursue in this next ecosystem amendment, it would be helpful to have guidance from the Coral Advisory Panel here.

Lastly, on our docket of items for consideration in this amendment; Steve presented on the snowy wreck marine protected area observations. In mapping the area, discovering that it is much more significant archaeologically and perhaps there is occurrence of Lophelia and the need for greater analysis and a greater survey of this site; also in the hopes for getting a deepwater ROV to the site to collect more data. I would recommend that the Coral AP deems appropriate a recommendation to the council that this is a significant observation that would serve well to get some more attention on this area.

DR. VAN DOLAH: I am a little confused by the second bullet; the wreck is larger than the current designation of forage. What I saw in Steve's presentation was the wreck was well within that MPA.

MS. MARTIN: That is misstated. I guess the Snowy Wreck Marine Protected Area is larger; the wreck within the MPA is more –

DR. VAN DOLAH: What I think you are trying to say or is trying to be said in this bullet is that there is critical habitat outside of the current designated area, no? So what are you trying to say? That may be what that says, but that's not –

MS. MARTIN: Yes, it is incorrectly stated. Again, this is very preliminary. As this development is progressing we don't have a whole lot of information yet so this was something I put together and not Steve. It is an incorrect bullet; I do apologize for that.

DR. ROSS: If you don't mind, I will just clarify that quickly. The wreck is larger than what we thought it was. The boundary around it completely surrounds it with quite a lot of extra territory.

MS. MARTIN: Those are all of the slides I have, Steve. I guess I was hoping for this to be a platform to build off of the discussions earlier in hopes for some recommendations and some guidance to the council on what they would like to see in this developing amendment; and if we can move forward with any of the HAPC designations, that would be helpful here.

MR. BLAIR: I think that kind of summarizes a lot of what our discussion was and the points that we have; and although I will entertain any suggestions for a path forward from here, but it may well be easiest just to use this as the kind of draft platform to be able to make notes into that to help develop and send forth the recommendations.

I think from the list that I had it encompasses most of what we had talked about for wanting to make comment or potential recommendation. There may be one or two others, but I think if everybody is okay I would just as soon make comment into here and we can have a draft list of recommendations that I will be happy to finalize tonight so that we can distribute tomorrow for approval by the panel.

MR. SHEPARD: As far as the Oculina is concerned – and I think we are going to talk about this some more, but we should also refer to the upcoming sunset on the OECA and the eminent need for the work that that has suggested in order to make those decisions in 2014, I guess.

DR. VAN DOLAH: I guess a couple comments. The comment I made in Andy's presentation to try to compile and distill a lot of these records that are there even in terms of just presence/absence data for the critical species, it seems like an essential effort to really do a decent job in trying to define or expand the boundaries of these existing sites, and that is not going to happen before December. I'm not sure – and we've already heard a recommendation that any recommendations to that effect should probably wait until this report is out. I am a little confused as to what we think we would do as an AP in terms of making specific recommendations to be applied between now and December or to be submitted between now and December.

MR. BLAIR: Good point, and I don't think that necessarily we would have all the information in hand, but I do think that the AP has a number of issues that it wants to make sure that the

council is aware of that we feel need to go into future amendments, and each of them, obviously as time goes on will be dependent on having that information necessary. I will defer to Anna and the council as the best format to do this, but I think it is important for us to list out those topics and areas of concern and some of which may be ripe for inclusion; others may have to fall to a subsequent amendment.

DR. FEDDERN: I heard a rumor that government was planning to zone the entire ocean or at least the part of it in the U.S.; is there any substance to that? If it is, then it might be more complicated to make any changes to zoning in the future.

DR. VAN DOLAH: I think I can respond to that. I am not sure exactly what you are referring to, but there is an Obama Initiative that is facing some negative pressure to initiate Comprehensive Marine Spatial Planning, CMSP. There was a large meeting that I attended in D.C. that was hosted by the White House and the NOC, National Ocean Council, to begin that process. They had a fairly ambitious schedule set aside.

It was supposed to be from the bottom up, according to the NOAA Administrator and others, but when you got into the details of it, it was clearly the top-down approach and didn't even include within the regions council representation. There were a lot of concerns there, but it is not to zone the ocean so much as to look at appropriate uses in different parts of the ocean. This one is spinning I think out of control a little bit, and I am not sure where it is going to go over the next year.

DR. BROOKE: The Marine Conservation Institute was involved in that battle, the National Ocean Policy, and it sort of went through its principal but our understanding at the moment it is dead in the water, and there is not a lot of support for it. I don't think it is going anywhere right now.

DR. VAN DOLAH: To inform that process, the designated entity in each state was mandated by their plan to be an elected official, i.e. the governor of each state. We already know two or three governors are likely to say, not only no, but heck no, in terms of participating in that process. I think Sandra is right, this one is not likely to fade away, but it certainly is going to stumble for a while.

MR. CRAMER: I know the reason Ken Nedimyer is not here today is because of some zoning issues going on. I think they have of the Marine Sanctuaries down in the Keys today, Ocean Reef to talk about zoning. I don't know if it is Key specific, but I was told by a friend of mine at the Nature Conservancy – he actually asked me to speak last week at this reef resilience meeting and one of the big topics was this zoning.

I don't know where it stems – you know, Australia has a similar – they have a zoning thing off their coast. I saw a presentation kind of like three years ago. I don't know if that is where it is coming from. I think they want to design it something similar to that from the people I talked to.
MR. BLAIR: I am unfortunately not as – more information is here than what I have, but that is definitely something we will need to understand better as we go forward and what the implications are.

DR. BROOKE: Jeff, Australia sort of spearheaded the CMSP or Ocean Zoning, or whatever acronym it has now, and that sort of the principal of that carried over to the U.S. and drove the National Ocean Policy Principle. I think what you are referring to in the Keys is Key specific and driven by the Sanctuary. This policy certainly hasn't gone outside of the White House at the moment, as far as I know.

MR. BLAIR: I think maybe if we either roll through – I mean, I have got one, two, three – well, maybe the other way to do it is to discuss maybe simply the basis of which bullets we want to be able to include and then we can potentially scope out. One of the thoughts that came to my mind as well is with the sunset of the Oculina closed area in 2014, is there the availability and potential for consideration for extension of that sunset, if desired?

MS. MARTIN: The sunset provision was extended indefinitely in 2004 and so there isn't that clause anymore, but there is a requirement for this evaluation planning team to provide an update to the council. The first update was provided to the council by this collaborative planning team in 2007, with the understanding that a new update regarding how effective the regulations have been, and this is specifically for the experimental closed area within the Oculina HAPC. The next update of that evaluation report is due in 2014.

MS. KARAZSIA: It has been many years since the Oculina Evaluation Team has assembled, and I am wondering if maybe as an outcome of this meeting we should reconvene and talk about issues related to this.

MS. MARTIN: Yes, certainly. I will just segue I guess off of this specific agenda item. I had hoped for John Reed to be here. He has been doing obviously a lot of research on the Oculina area, and to talk a little bit about his involvement in the evaluation report. I know there were a lot of planning meetings involved in that, preparation for that update and report to the council.

I had hoped to have him talk a little bit about that and Roger Pugliese as well, who was instrumentally involved in coordinating a lot of those as well, and Myra Brouwer. But, yes, I think it would be helpful to have some recommendations from the Coral AP. We do need to look towards getting the ball rolling on updates I would say during next year, 2012.

The report is due in March of 2014, and the Coral AP as a whole was not on the planning committee, just several individuals from the AP, and so it may be that the AP wants to recommend additional folks to represent that collaborative planning team.

DR. BROOKE: I was involved in that process, and it was a lengthy and somewhat painful process. What came out of it was that we came up with a whole bunch of research needs for Oculina and we couldn't get the funding for them. Having said that, there have been bits and pieces of research that has happened since 2004. There has not been a coherent plan like we have had previously, but I think it would be useful to get the people that were doing that together in one place and hash out the draft of the report, because it has been very sort of spotty. I think it is a good idea.

MR. BLAIR: That is something that could initially be done through – at least coordination with the original members, finding out what information can be brought to bear now and from that determine the need or how quickly we need to get an actual physical meeting together. I think one of the bullets that came out from the beginning aspect is the HAPC issues.

There were multiple issues that we kind of had some sense for, associated with the boundary, one of which was consideration of expansion to include areas that have been identified as having significant deepwater coral resources. To that we had explicit areas – it is kind of one of the things what we know is we are going to keep learning more areas, but we do have some areas that we have explicitly identified that can be put into it. The recommendation in general should be to incorporate the information both available now and from the final report from the deepwater coral work into an evaluation for the needs of modification of the HAPC to encompass known areas of deepwater coral resources.

MS. MARTIN: I think it may be helpful to have that recommendation in the form of a motion; and perhaps when we do receive the final reports, that the Coral AP will come back together and revisit those to provide – I mean, I think that will be the vehicle for providing some specific recommendations, which arguably are a little hard to do at this point. It seems premature.

DR. ROSS: What final report are you talking about?

MS. MARTIN: Andy David mentioned the Deep Sea Coral Working Group.

DR. ROSS: I don't think there is going to be any more information then than there is now, and we actually have more information for that shallow Jacksonville area than we had for a lot of the deep area that we ended up protecting in the first place. We have multi-beam maps where we didn't have in a lot of other sites.

We have two ROV dives that document extensive corals; and there would be no reason to believe there is not more there. We have oceanographic data that supports that and that is more data than we had for a lot of the other territory, and it is the same data we are going to have a year from now.

There may be some other expeditions that go there, but right now they are not on board. My recommendation would be more specific that we recommend that the boundary be expanded to the west and that we submit a map with a proposed boundary in it, which the starting point would be the map that Sandra showed.

There was a suggestion in some of the discussion around the room that could even be expanded to include the multi-beam area to the north that shows an extensive ledge and reef system. I think that is easily as defensible as what we did before, and I think that would be a specific recommendation. It would not be vague; it would allow discussion of an actual recommendation that had some facts behind it.

DR. BROOKE: Just a point of clarification. If we introduce this for this CE-BA 3 in December, we still have time to accumulate extra information to support those things, but we would have to

have those issues on the docket for discussion at December session; is that all we have to have for December?

MS. MARTIN: Yes, I am sorry, I should have clarified that. The idea behind the public scoping is to take out some ideas for consideration that the council is looking to include in this developing amendment. It isn't a definitive list; it is more an opportunity for the public to comment and provide input that they want to on these proposed measures.

Certainly, we wouldn't have analysis and too many details at this stage that we could provide. The idea is that in December our council members would have this list of items that they do want to take out for this scoping process. Again, public scoping is kind of the first step in the amendment development process.

It can be a very lengthy ordeal as you are all, I am sure, familiar with, but it is kind of the first step in what will become a more defined document and amendment. There won't be any actions or alternatives that we take to the public for their input, not at that stage. In the future, once there is more meat in the amendment and specific alternatives and rationale, there will be public hearings and additional opportunities for the pubic to comment on those measures once they are more formed.

DR. ROSS: I was just going to say if the AP likes that recommendation of a more specific document, we could bring up those two maps that Sandra showed and make the recommendations for Jacksonville and Cape Lookout simultaneously with the committee agreeing that we have at least a starting point to throw out as a recommendation. My recommendation is that it would be better to be more specific than to vaguely say that we would like to expand it somehow.

MR. BLAIR: I agree, and I think that I also want to keep us flexibility that we don't put ourselves specifically to that, so I agree that we should be explicit about the areas that we know need inclusion, but by the same token leave a little bit of flexibility if new information comes out. If we are scoping in December for CE-BA 3, the anticipated aspect could be or the earliest part would probably be the end of 2013 and possibly longer for that, correct? Is that the line of thought at this time?

MS. MARTIN: It is hard to anticipate the end, but I think it wouldn't be that long of a tenure of development of a document. I think the council in the future would look towards these ecosystem amendments as clarifying to the public how the process works so that the public scoping would take place in the beginning of the year, the document begins to develop, the council will choose preferred measures for specific actions and alternatives during the June or September council meeting for an eventual finalized document within one year. I don't think we are there yet.

MR. BLAIR: I just realized I gave it a two year; I really did mean to give it a one-year turnaround so that it is a one-year aspect. The other aspect is if we go down and we feel we have information appropriate, if we find out that there are some things that end up coming in to snag it

a little bit, there really isn't any – or let me ask is there a significant issue if because of those reasons this has to drop to the next amendment?

In other words do we lose anything by trying to move it down the road with the hopes of being able to have the information finalization; but if there is a snag along the way, there really isn't anything of great impact to the process to say that we have to pull it out of 3 and put it to 4.

MS. MARTIN: I don't see that as being problematic. No, I think that is certainly a route we could take.

MR. BLAIR: Okay, so we can shoot for it as soon as possible; and if something comes up to delay it slightly, then we can still deal with that. What I think I would ask for then is the explicit – either names or designations for the areas that we want to have included with a basic comment. I don't know how we want to do this, if we want to get some wordsmithing or I will try to capture it and bring it back tomorrow to everybody for final approval or comments.

Recommend that there be a review of the boundaries of the present Coral HAPCs to be modified to include areas that have been identified as deepwater coral resources, and we will insert explicitly the names of the areas that we want and areas where multi-beam mapping indicate presence of deepwater resources. That leaves us the ability to be able to kind of work with it if any additional information comes in. The question at this point would be what is the specific area title that you want to have to include those specific areas that --

DR. VAN DOLAH: I was going to suggest that I actually kind of liked Steve's idea to go back and look at these areas just to see what we are talking about. As he mentioned, there is no other data than what they have available, so perhaps we can not only identify the general areas but kind of see what he was suggesting in terms of a modification of those boundaries.

MR. BLAIR: Right, and I think that we are working to make that inclusion in this.

DR. ROSS: That yellow line was mine and Sandra's first cut at this, but also –

(Off-the record discussion.)

MR. BLAIR: It would look, in that case, for this region; the 200 meter contour would be a good confining element for it. It looks like that ledge is – and I agree, there are buffer areas and so forth you need, but at least there is an element and either we explicitly come up with latitude/longitude confining aspects with it. I am just trying to figure out how best to incorporate it here.

Whether we want to use it right now as a designation of an area without the explicit boundary per se, we could say approximate the 200 meter contour, and I, in consideration of the information to the north and the break in the determination of the information in the yellow box, would agree that we would extend it to the north to be inclusive of the northern boundary of the next area to the north.

DR. ROSS: If you want we can redo this map and I can provide that to the committee, unless the council wants to do that on their own, but I would I guess bring this boundary up to here and then back down to there.

MS. MARTIN: Is there any way, Anna, that you might propose as far as what would be the most explicit? I mean if we do that I think it is pretty easy. We can extend out at latitudes north and south to the 200 meter contour. That would make the easiest expansion of that area – or to approximate the 200 meter contour. If we can get the northern latitude/southern latitude, that might be the easiest way to make that recommendation with the other, okay?

DR. ROSS: Do you want me to construct a map or to just pull –

MR. BLAIR: I think if you pull the latitude/longitude, it is easy enough for us to do the – if you would like to go ahead and expand and overlay that onto the graphics that you have got, that would be nice.

DR. ROSS: We can do that. I will get a northern border and southern border latitude and then we will just say approximate.

MR. BLAIR: Yes, approximating the 200.

MR. McFALL: You know, we keep expanding these boundaries as we identify where these resources exist. Isn't it fair to say that anywhere you have got a hard bottom structure out here, you have the potential for these resources to exist? Why do we not just go in from the 200 meter contour all the way out to the EEZ within the jurisdiction of the South Atlantic Council? Why is that not a consideration?

MR. BLAIR: I will take Sandra's response and then we can discuss this.

DR. BROOKE: Yes, I just want to make a quick comment. When we defined these boundaries originally, Greg, we thought that the corals didn't come in further inshore than 400 meters. We thought we were pretty safe in saying 400 meters defines the western boundary. Then there was consideration for the golden crab fishery and then there was the edge where we were pretty sure there was no corals further out.

This was originally done under the – again, I will leave Steve to speak to this, this is more a legislative thing, but it was originally done in the Coral Fishery Management Plan and we drew the boundary where we thought corals stopped. It goes up to the edge of the EEZ further south. But this is a new discovery that they are further inshore than we thought, so that is why it is popping inwards.

MR. BLAIR: To this point in time we think that this is a locally explicit event. This is a living document to a certain extent. As we do get more information, it may be that we bump it to 200 meters from that region north, but right now this is the area that we do in consideration of potential inferences to other fisheries that will still have to be evaluated.

With consideration to this, I think it might be better to be kind of an impacted verse, if you will, in the sense of trying not to necessarily eliminate fishery or other activities in the area when we don't have at least relatively good information that there is a potential need for that restriction. What I would suggest is we do these – we will do a final wording on them tomorrow after everybody does and we will do a voting of the advancing of the recommendation or not tomorrow, if that is okay.

MS. MARTIN: That is helpful. I definitely want to leave with specific motions if those do come about. It sounds like that will be one. It will be helpful to have a motion and the Coral AP endorse it as such.

MR. BLAIR: Just in case there is any other input to it, what I have got is my first cut at it is recommendation that there be a review of the boundaries. We don't want to say review; we want to say modification, right?

MS. KARAZSIA: If we are talking about expansion, I think we should say expansion.

MR. BLAIR: Expansion of the boundaries of the present CHAPC to be modified to include areas that have been identified with deepwater resources, specifically the area approximating the 200 meter contour between latitude X to the north and latitude Y to the south and areas where multi-beam mapping indicate presence of deepwater coral resources.

DR. ROSS: Get the "and surveys."

MR. BLAIR: Multi-beam mapping and surveys?

DR. ROSS: ROV surveys.

MR. BLAIR: Steve and/or Sandra, could you put together an initial cut at what that final modified format would be that would be inclusive of the additional ROV survey and multi-beam areas that are outside the existing HAPC.

DR. BROOKE: Yes, Steve would love to do that.

DR. ROSS: What exactly do you mean by that?

MR. BLAIR: By that I mean we are stating in this that we want to include the areas of multi-beam mapping and ROV surveys that are not contained presently in the HAPC and expand the HAPC to include those areas. I think it is important for us to see what impact that is having on the shape of the HAPC.

Not so much because of the shape, but for potential interaction that may be coming with other fisheries and so forth. I don't have in my mind all the extent of the various areas that have been mapped and how we are stating that we are modifying it throughout its area. It may not be that significant, which is fine. It may be in some areas – because of other activities that are ongoing, may be significant, so I think it would be good as early on as possible to have a snapshot of that.

DR. ROSS: Are you looking for a paragraph of what this means to the expansion?

MR. BLAIR: Right, and the potential draft shot, just in the same way that we are showing how this is; what other areas that are not in the HAPC are there that ROV surveys and multi-beam mapping would indicate they should be within the HAPC.

DR. ROSS: Sandra would love to help me do that. North Carolina?

MR. BLAIR: Right, so those are some of the other additional areas that we would like to have included in there.

DR. ROSS: You can't really see – the projector doesn't really project details very well, but there is a strip of small mounds up here.

MR. BLAIR: Where?

DR. ROSS: Right above this black arrow and there is a submarine landslide here, but between the landslide and the existing boundary there is some series of small 10 to 15 meter mounds.

MR. BLAIR: Do we anticipate it to be in areas other than the Stetson Terrace Area and Cape Lookout?

MS. KARAZSIA: What about the Oculina area off Daytona; would that be something covered that is different since that is an Oculina Coral HAPC?

MS. MARTIN: I think what I have gathered from Andy David, who seems to be the one that was on the June Deep Sea Coral Expedition with John Reed – correct me if I am wrong – it is preliminary at this point. It appears we would have to wait for some recommendations from them. Anecdotally John Reed has indicated this is of interest and possibly expanding the HAPC; not the experimental closed area within the HAPC but the overall HAPC north to incorporate that area. But, again, we would certainly have to have the data, the rationale, and the guidance from the Coral AP, and I don't think we have that today for here right now.

MR. BLAIR: I would like to have Andy come forward and kind of just brief us a little bit on what he feels might come from that. Again, we have the wording in the recommendation to allow incorporation of that; however, if we already know, we want to be as explicit of the area as possible. I think this would be helpful.

MR. DAVID: For the Oculina areas, where I said that it is going to take a while for us to make a recommendation, that is because that is going to go through the full NOAA process, where as an individual I can't tell you to do that. You can ask John Reed; he doesn't have those limitations. Just like we won't say at this point something for the Jacksonville area, but those areas, we will certainly address them when NOAA does generate their final report, but that is not something that I can speak for the agency on.

MR. BLAIR: But that information would be available for our review at least as far as the data and so forth for our consideration at a point possibly prior to that.

MR. DAVID: Absolutely. Those maps are available now.

MS. KARAZSIA: Somebody had a map of that area in one of the presentations. Was that your presentation? Can we take a look at that again just while we are talking about it?

MR. BLAIR: As we look at those maps, I am adding the specific to the regions of concern.

MR. DAVID: When you are talking about the Jacksonville site, you already have the deep MPA out there that incorporates a good bit of that USWTR area, so that already has some additional protection. There is those areas again, and the upper corner is the shelf edge, that deep grouper tilefish MPA already incorporates that.

As a suggestion for a name to use for this, since the navy has already designated these areas, that upper one is the Charlie-Charlie Box and the other one is the USWTR, and I think both those designations are in the federal record with the geographic delineations in there. But now if you wanted to go to the –

MR. SHEPARD: Forgive me for being confused, so this is the Jacksonville – this is the same as the Jacksonville area that we just discussed? A section of this already is under some type of management authority in terms of an MPA?

MR. DAVID: It is your North Florida Deepwater Grouper MPA.

MR. SHEPARD: Okay, so how does that then interact then with our potential recommendation to expand the boundaries? We can expand the boundaries of an HAPC to include the boundaries of an existing MPA?

MR. DAVID: The MPA already has no bottom-tending gear restrictions. You can troll on the surface but you can't fish on the bottom there. Then the Daytona area is a couple slides further down. All right, that is a large-scaled map of the Daytona Oculina and the Cape Canaveral Oculina areas. Those are the two places that we mapped and did dives; and if you go to the next one, is that the slide you were referring to earlier?

MS. KARAZSIA: Right, and that is shallower than the existing coral HAPC and north of the Oculina.

MR. DAVID: It is north of the current Oculina HAPC and west and shallower than the current CHAPC.

MS. KARAZSIA: So currently this area doesn't have any special – no protection.

MR. DAVID: No protection and it is open to fishing.

MR. BLAIR: Andy, what is the approximate depth of that?

MR. DAVID: Those were in the probably 85 to 110 meter range, pretty shallow for a deep coral area. It is essentially an extension of the reefs that are in the Oculina HAPC.

DR. BROOKE: You have seen Oculina there and John is pretty sure that these are Oculina pinnacles. Is this enough information, Steve, to maybe just put it on the list of items pending any further information from presumably John's analysis of the ROV? Is that what we are waiting for, Andy, John's analysis of those sites?

MR. DAVID: From NOAA you are waiting for vetting up the chain. Certainly John can – I mean he is a member of your panel. If he would like to make a recommendation, there is nothing stopping him from that. The surface of all these mounds was 100 percent Oculina rubble. It looked very similar to Justin Chapman's. It's that shape of a rise, steep on one end, tailing off down current, live Oculina in the high current areas.

DR. BROOKE: Was there live? You showed some live there.

MR. DAVID: Sure, but don't get me wrong, this is nowhere near what Justin Chapman's were like, but you can see it is a trawl. There is a lot of rubble and there isn't a lot of standing dead heads, so it has been worked over, but they are nonetheless Oculina mounds.

DR. BROOKE: And most of the HAPC is rubble, actually, so it is no worse than what we have already protected and at least there is some live stuff there.

MR. BLAIR: Andy, you said there is an apparent indications of active trawling or trawling that has occurred in the past in these areas.

MR. DAVID: When you see trawled areas in the existing Oculina HAPC and you have got fresh trawl marks in the bottom and things you have put on the bottom that are now destroyed, you see a very similar landscape to what you see on these mounds. To say they have definitely been trawled, unless you see the trawler there, that is a pretty definitive and difficult to make statement.

MR. BLAIR: That is fine, just that there is apparent impacts from ongoing fishing, which further puts the pressure towards the need for protection of some of these areas.

MR. DAVID: There is line on the bottom; there is gear on the bottom.

MR. BLAIR: Again, I in no way want to speak for Andy, but the difference is what he can provide in a report that has been vetted through the process versus information that is being presented to us, and I am not aware of any process that would preclude us to have parallel paths. While they are going through the process of finalization of the report, we can be utilizing the information to put into place additional protections as we would recommend to the council.

The idea is some of these are a considerable expansion so that I would like to be able to see what modified or additional areas would be inclusive of that we may otherwise go forward with, and to what extent is that necessary immediately versus two weeks to a month down the road? Is there any level that we can make a recommendation as it is. Obviously when we are altogether, this is when we want to vet this stuff, but it could be done through electronic processes as necessary until we meet again.

MS. MARTIN: Certainly, I don't think we have to have a formal convening of a meeting to have a Coral AP recommendation, so we can communicate and as necessary. I see this as a working list at this point. Nothing finite needs to happen; we are kind of just getting started here.

MS. KARAZSIA: As far as who is fishing n this area, the rock shrimp fishermen are trawling south of here, right, as far as we know; and the royal reds are fishing in deeper water. Is anybody trawling in this area that we are aware of?

MR. BLAIR: I'm looking for Gregg. That is one of the things that will have to be determined. Just in the same way with the original HAPC, there was a lot of work in trying to determine to what extent integration of process and activities could occur. I don't know, per se, that that should limit our ability to make a recommendation as to what should be protected.

The manner in which it is protected, just in the inclusion of the nine allowable fishing areas in the southern portion of the HAPC for Stetson-Miami Terrace may be something that gets incorporated in this and still allows us to be able to protect the areas, or at least that would be my hope.

MR. SHEPARD: Two things. One is that, yes, they do trawl north of the current Oculina HAPC, because I have seen VMS records that showed those tracks all along up the west side and north of the HAPC. I don't know that those tracks extended as far up as the Daytona mounds, but it sounds like they may have found them. I don't know, and I don't know if those are old or new or whatever, but it is something that is worth investigating.

The second thing is that I don't know that is the only activity we are concerned about there, too. Even if they aren't rock shrimping up there, what you are trying to do is prevent obviously future rock shrimping, but there is also scallop dragging that has occurred through these areas, so you want to be careful of both.

MS. PUGLISE: One question that I keep having over and over is if we miss this December timeline to put these things on the table, are we done for that amendment or do we still have opportunity after that to still put stuff on the table?

MS. MARTIN: No, we are certainly – the AP would not be done. The nature of the council having these amendments, they have to be a very transparent process so the public scoping is the very first opportunity for the public to weigh in and provide input. Certainly, the Coral AP could come back after that point with more measures to include on the list knowing that council staff is going to take this out again for public input in the form of hearings and comment during all of the council meetings The December cutoff is not a cutoff per se, but it is an opportunity for the

council to approve a list to get this process started and to take this out for scoping, so it is initial step and it is certainly not binding.

DR. GILLIAM: Our charge right now is based upon available data, that there are resources adjacent to or near these current boundaries that to us, as a panel, have the resources that would justify expanding the boundaries to include these new areas. As a panel our charge is it seems like that because these resources exist, that we are recommending that the council consider expanding these boundaries.

It is not within our charge to weigh the pros and cons of the expansion, but as an advisory panel these resources exist, we think the evidence is appropriate then to now recommend that these boundaries – okay, well, than having said that, I don't know why we wouldn't recommend expanding these boundaries.

MR. BLAIR: No, I think you are right and I would not doubt that the information will come back to us if there are conflicts or potential conflicts in the areas to see how many of those can be resolved or what type of tradeoff would occur to allow compatibility as much as possible. But you are right, we get the information, our charge is to protect the resources, as I see it.

DR. GILLIAM: Then I recommend that we recommend moving forward in expanding these boundaries to include these.

MR. BLAIR: We will; and as I said, I drafted it, I will do a little bit of wordsmithing on it and the intent is let's go through – I think we have discussed other items, let's get some draft recommendations for those as well so that we will refine those and then we can vote on them in the morning. Another point just to add on that as a matter of fact I think it would be appropriate to add on to that recommendation an assessment of the VMS tracks in these – or available tracks relative to the potential modified area.

DR. ROSS: Just to clarify, you have got three areas now so far, the Jacksonville, North Carolina and Oculina in our list?

MR. BLAIR: I actually have Stetson-Miami Terrace just in general for that northern area, the Cape Lookout area and I am considering – we can decide whether we want the Daytona-Jacksonville area, i.e. Charlie-Charlie and USWTR, so that would be – and that is just because we have those explicit areas.

DR. ROSS: I was a little confused by that list. The first thing you mentioned, Stetson; can you read off Stetson-Miami.

MR. BLAIR: I was thinking of Jacksonville. It is part of that; it is adjacent to the present HAPC.

DR. ROSS: Which is the Charlie-Charlie thing, so it is only three areas now on the docket; Oculina, Jacksonville Shallow, whatever we call it, and North Carolina, Cape Lookout.

MR. BLAIR: But it would also be inclusive; do you want to do the Daytona-Jacksonville together?

DR. ROSS: No, they are two different things. Daytona is Oculina and that is way far south of Jacksonville, and they would be totally disconnected. Jacksonville is Lophelia related.

MR. BLAIR: Right, but this is talking about modification of coral HAPCs in total.

DR. ROSS: I know, but what I was saying is that we have got three of them, three modifications now so far that we have discussed, right? I am just trying to clarify that, Oculina, Jacksonville and Cape Lookout.

MR. BLAIR: Yes, all right, I am going to make that Oculina instead. Right, it was Daytona is what I had it down as; Cape Lookout, Oculina/Daytona and Jacksonville area, which is the Charlie-Charlie unit.

(Off-the record discussion.)

MR. BLAIR: Right.

DR. BROOKE: Those are the Daytona Pinnacles, that is Oculina; extension of the Oculina HAPC; Jacksonville is an extension of the CHAPC.

MR. BLAIR: Correct, and I am not distinguishing at this point, although I did initially have a name of one of them. I am more in the area listed as Cape Lookout, Oculina/Daytona, and Jacksonville Area. Okay, make sense?

DR. ROSS: One reason I wanted to bring that up is that I don't know that we want to open -- no, we don't want to open that up there, but there may be a forth one that Sandra would bring forward in her talk tomorrow.

MR. BLAIR: That is fine because the way that this is worded we can add it as additional information comes forward on it. That is part of the intent of the wording.

DR. ROSS: Okay, I just wanted to make sure that wasn't a closed book. That is it for expansions.

DR. BROOKE: Yes, just to drag Andy David back into the fray again, what about the lithoherm down on the Portales Terrace?

MR. DAVIS: It's inside.

DR. BROOKE: It is inside. Okay, thank you.

MR. BLAIR: That will be something to the extent that we have to double label an area that already is under protection from another management plan, that is what we will work through.

DR. GILLIAM: Jocelyn, was that recommendation you wanted the panel to move forward in terms of bringing together the Oculina group that you mentioned earlier?

MS. KARAZSIA: The Oculina Evaluation Team; it seems like with there being a deliverable due in 2014, that the group should get together. Membership should probably be evaluated as well; I'm not even sure who is on the team.

DR. GILLIAM: That is something that the panel recommends that the council facilitates.

MR. BLAIR: I believe we would make a recommendation for reconvening of the Oculina Research Team for –

MS. KARAZSIA: The Oculina Evaluation Team.

MS. MARTIN: I have the last report in the briefing book from the 2007 update before. It is quite a collaborative team so it may be that a subset of the AP wants to get together and provide some recommendations for new folks to be involved. I am not sure that all of the players in the first report are still in the realm of coral research. Maybe there are some more folks that could be appointed to the panel.

MS. PUGLISE: Would it be possible – do you have that list in front of you to read who is on it?

MS. KARAZSIA: There is different sub-teams; are we looking for the whole team?

MS. MARTIN: I think this would be – so there are three parts of this report. There is a law enforcement component, an education and outreach component, and the research component, which is what this group would be kind of focused with. I can just pull it up here and display it for everybody. I think there is some specific table for the research folks.

MR. BLAIR: I throw out a rough verbiage for a recommendation for reconvening of the Oculina Evaluation Team to determine status and review/modification of membership as needed in preparation for the 2014 Assessment Report.

MS. KARAZSIA: Just for clarification; what is due in 2014?

MR. BLAIR: From my understanding of the previous discussion, it is a periodic report that is required as part of the – or that was mentioned as part of the association with the Oculina closure area, that there would be periodic reports as to the effectiveness of the closure on the Oculina and associated area. I would be happy to defer to council if there is a better explanation for that; just the idea of what is due in 2014 from the Oculina Evaluation Team and the issue.

MR. WAUGH: Anna has a good handle on that.

MS. MARTIN: It is up to the folks that are on the planning committee as to what goes in this report, but the deliverable as a report on the effectiveness of the regulations that are within that experimental closed area. I think one component would need to be an update on what has taken

place since the 2004 report that was delivered in 2005; and so an update on what has been accomplished; and then as the evaluation team sees fit, other components assessing the effectiveness of the regulations. I believe there is some liberal flexibility there for the folks involved in the evaluation; no specific mandate for the part of the report.

MR. BLAIR: Do we actually need a recommendation to the council to reconvene the Oculina Evaluation Team or is it kind of implicit in the process with the closure?

MS. MARTIN: I think it would be helpful for the Coral AP to have a formal recommendation. There has been so much focus on meeting the mandates of the Magnuson Act, that surfacing that this is an upcoming deadline, I think will help to put that on the table, and so that makes it more aware. I know they do know it is up-coming, but I think that would be a helpful recommendation from the AP – endorsed by the AP that this is important.

MS. KARAZSIA: From what I remember, there isn't really like a leadership structure on the team. Everybody is just a team member, so it would be helpful if we had some council support to help put a meeting together and get the right people on the phone or in the room to determine what needs to be produced and what it takes to get that done.

MR. SHEPARD: Related to that, on Page 64 of that Evaluation Report it lists the types of groups that this committee should include. I think we should leave it open for this group. I think it should include some new faces. I think this is an opportunity to do that; including law enforcement, research scientists, commercial fishermen, recreational fishermen, et cetera. It is important to note the council is at stake here. They have to deliver this. The Evaluation Team has to give it to the council, but the council is on the hook to make sure this is done. I think starting as soon as possible is probably a good idea. They don't want to have to rush on this.

MR. BLAIR: Are we okay with just having at this point for that recommendation that they reconvene the Oculina Evaluation Team to determine status as well as review/modification of the membership as needed in preparation for the 2014 assessment report. I know that there was a consideration in some of our discussions about the potential vulnerability of some of the Lophelia areas, especially with the presence of a potentially commercially viable fishery with blackbelly rosefish, even though it is not necessarily presently exploited.

Some of our discussion was to potentially make a recommendation, I guess through the council to the Snapper Grouper Advisory Panel, to consider and assess the vulnerability of the blackbelly rosefish, and I would say at the same time to the habitat committee relative to potential impacts in the habitat area. Are there any other inclusions or comments on that?

DR. ROSS: Would this be just an initial assessment or would we be recommending going to a fishery management plan?

MR. BLAIR: I will defer again to Anna, but I would believe in giving it to the Snapper Grouper Advisory Panel it would be with the intent that they evaluate it as for its potential need of inclusion in the complex and any protection measures that would be needed. We could maybe have that specific verbiage in there.

DR. ROSS: We might additionally recommend that we could provide a background talk to support that recommendation as needed, a review of their status and the region; which they won't have access to right away.

MS. MARTIN: Ultimately here we are talking about inclusion of this within the management complex, and the Snapper Grouper AP weighing in on this as coming from the Coral Advisory Panel; is that what I am understanding?

MR. BLAIR: I think the intent is this area is within the area that we are considering for expansions of the HAPC. It is an unknown area that has a potential fishery that may be utilized by commercial and/or recreational fisheries that are apparently within the same as the deep-drop areas.

As it becomes known, if it is not that well known and that is why it is not exploited, we want to ensure we kind of get ahead of the curve because we know what some of the fishing impacts can be in an extremely vulnerable area like the deepwater coral. It is really suggesting or asking them to review it relative to their knowledge of their fisheries as to what level, if any, protection and regulatory process it might need. It would be also consideration of adding that to their complex.

DR. BROOKE: Just in addition to that; there is the consideration of the fish itself. They are slow-growing, long-lived and would be pretty easily overharvested, I would imagine. I am not a fish person, but they have the life history characteristics that mean they could be overfished relatively quickly, and right now there are no regulations stopping their harvesting.

MR. BLAIR: Recommendation to the Snapper Grouper and Habitat Advisory Panel; consider and assess vulnerability of the blackbelly rosefish, commercial, recreational exploitation, inclusion of potential regulatory and protection measures, and the Coral AP will work with the Snapper Grouper and Habitat APs to provide specific background and supportive information regarding the concern. Then we also had the discussion about a potential recommendation for the snowy wreck.

DR. ROSS: I had several recommendations I think at the end of that talk, and, of course, the premiere one is a short expedition to gather additional data on the wreck. That is probably the most difficult recommendation to pull off and maybe would provide the most data. My thinking there is that this wouldn't necessarily be an extensive thing. A three- or four-day cruise for a site of that size would be sufficient to give us quite a lot of data that we don't have now.

In addition, that cruise could have multiple objectives like gathering additional genetic samples from those waif Lophelia colonies to see how they fit into the overall population structure in planning an environmental monitor, in planning an acoustic monitor, none of which would cost a lot of extra money; and there are ways to bring those up without having to do an ROV cruise to retrieve them.

All of that would provide quite a lot of data for that slope-shelf interface area. I think part of the justification for that would be potentially leading toward the evaluation of whether deepwater

artificial structures are worth considering. This would be further background data that would support or allow that to be evaluated better. I suppose most of these recommendations sort of hinge around additional data.

MR. BLAIR: Would it be reasonable or is this something we could put into basically a single recommendation relative to additional work that the council or the panel feels is appropriate to occur at the Snowy Wreck inclusive of additional ROV/HOV investigation, environmental monitoring, acoustical monitoring. And the aspect for the artificial reef, I think we could use more refinement in what that really is supposed to do; otherwise, it is stated simply as a management question, it seems like.

DR. ROSS: Those three middle points could be rolled into one recommendation that are all related that would feed into the last bullet as a point for consideration. The acoustic monitoring potentially, depending on what kind of monitor you put down and who analyzes the data, could also provide some additional vessel activity information that might be useful in terms of seeing whether vessels are stopping there and staying longer than they should be.

MR. BLAIR: I will kind of work on this one, but the recommendation will be to provide support for continued investigation at the Snowy Wreck MPA inclusive – and this is bulleted, inclusive of ROV/HOV investigating for additional mapping purposes; another bullet for environmental monitoring, another bullet for acoustical monitoring. These activities would provide needed information for the support for additional management considerations, inclusive of, we can say, additional habitat enhancement such as artificial reefs.

DR. ROSS: It may not be relevant to the council, but if archaeological documentation is worth doing at the same time, that is another reason for going there. That may be outside the purview or interest.

DR. GILLIAM: I am just hesitant or I am struggling with as a panel recommending the deployment of artificial materials. I just don't know – is that a management direction that the panel views as a direction that we want to go? I just don't know if I am comfortable with any recommendation that moves towards the deployment of materials as a management.

MR. BLAIR: Well, deployment of materials in a blanket sense is not appropriate, but artificial reefs are included for specific fisheries as EFH, if I remember correctly.

MS. KARAZSIA: I was just going to say the way I understood, it would be like on an experimental basis to see if it is something that could help provide additional substrate, not like filling that whole box with artificial structure but something on a very experimental, uncontrolled basis. That is the way I understood it.

DR. ROSS: I just wanted to clarify why I made that recommendation. That was to bring up discussions like this. I am not a fan of artificial reefs and never have been. I don't think it is a foregone conclusion that they increase populations, and that debate has been going on for decades. Of all the places where you could have an impact on fish that are continuing to be hammered, this would be the one place where that might be effective.

I don't think anybody has looked at that seriously, so as an experiment it may have some serious management payoff, but I would be hesitant. I mean I made that recommendation as if we should just go out there and start throwing wrecks down, but I think it is a worthy topic of looking at with a different kind of recommendation of what I put there.

MR. BLAIR: What I just banged out real quickly as part of one of the bullets is potential for habitat enhancement activities in – I said non-reef regions, but really in support for deepwater. And here it is kind of interesting because now we are really looking at these more for habitat; at least in our concept in assisting snowy grouper as opposed to necessarily assisting deepwater coral.

DR. ROSS: It might do both.

MR. BLAIR: Right, it may.

DR. ROSS: I don't think that is a major consideration. The other nice thing about thinking about that here is of all the places you could conduct this experiment within an MPA would be ideal because whether you have poaching or not, you at least might have minimal impact.

MR. SHEPARD: I think the precedent for it, too, in that I know, for example, in the Keys there has been work – and it is not putting down giant wrecks. It is settlement plates and artificial structures to try and bring back coral recruitment in areas. I am not saying it is the same thing, but I would think of it more that way than the kinds of artificial wreck reef programs where they go out and sink a bunch of ships to try and give people a place to fish.

I would definitely consider the wording that Steve is putting in and suggesting as being an important twist. The last thing in the world we want to do is imply that we are going to use these things to suck big fish away from the places they fish. That is not going to fly. It is basically an enhancement activity.

DR. GILLIAM: I think actually that is what I am against is the fact that – and maybe I was wrong at the beginning, but is it being proposed as an enhancement activity, I think it is a slippery slope to start thinking that we can enhance fish populations by just thinking that we can deploy material to do something that the natural environment is struggling to do.

I struggle with that as being a management tool, and we are not doing a very good job managing our population so we think we can deploy artificial material to – I don't know, I guess that is what I am struggling with. I think there is a lot of research and science that can be conducted with deploying materials, like you said as recruitment plates and things like that. Maybe I am still not completely further –

DR. VAN DOLAH: Anna or Gregg could maybe correct me if I am wrong, but I believe there is a deepwater MPA off of South Carolina specific for this kind of thing; a place to put artificial material to act as a fish refuge that would not be fishable.

MR. BLAIR: I agree with you, David, I think that in going along with Andy what we want to do is have our verbiage here that it is strategic and specific for purpose, and not simply placement of material. Our discussions are already on the slippery slope of what which side of the slope you want to go to. But I believe the council has, through its management actions, recognized that there is existence of and potential role for artificial reefs in a management strategy. If I misspoke, please correct me.

MS. MARTIN: To Bob's point that is correct; the marine protected area off of Charleston, off of the South Carolina Coast is specifically for deployment of artificial reef structure. That separates that one from the other marine protected areas, but it is one of the eight.

MR. SHEPARD: I guess I was thinking in terms of the coral more than in terms of the fish, to tell you the truth, even though it is an MPA that is in place for the fish. I don't disagree with you that there is not a lot to show that so far, but I do think there is some background for it.

If you provide hard substrate in a place that shows evidence of having coral recruitment in the place of sand up until then, and we have put some reef balls, for example, in the Oculina area in an area that was sand in between – sand and rubble, but in between the mounds, and just recently we went back with the ROV and they are starting to show recruitment to those things, and any live coral we can get is a good thing there. I don't know what kind of dent it would make here.

DR. BROOKE: I understand your hesitation. I don't like the things either; they are basically fish in a barrel. In terms of management actions, the council has decided to protect an area that is essentially already an artificial reef. It is a wreck; it is not a natural habitat. This is an area that is not supposed to have substrate on it.

We humans artificially put substrate on it, and it has got a ton of fish on it. Is it going to matter that we take that area and put more substrate on it? I really understand your hesitation; I am wrestling with it too, but again if you go back to what Steve said, I don't think this should be a general strategy. We have allowed the fishermen to overfish so now we are going to dump artificial substrate to hopefully bring them back.

I don't think that should be a strategy, but strategically this might be one of the few places that it could work to our benefit, at least to try and figure out whether we are enhancing the populations by putting the stuff down there. From the wreck, it appears that they are being at least locally enhanced. As far as the Oculina is concerned, we put reef balls down. The snowy grouper immediately went in and hung out.

The coral has been a little more reticent, and actually last time we went out there in 2008 we couldn't find most of them, so we don't know where they have gone. We don't know where the reef balls are. I hope they are still there. The blocks that were put next to Jeff's and Chapman's have showed quite a lot of recruitment and little fish around them, for what it is worth.

MR. BLAIR: To move forward, I think, as we said, it is in the wording and we can finalize it and I think maybe even decide to what extent we want the aspect to be in it. At present the general format will be recommendation to provide support for continued investigation of the

Snowy Wreck MPA, inclusive of ROV/HOV investigations for mapping and archaeological benefits – I will come up with some wording with that – environmental monitoring, acoustical monitoring and potential for strategic and appropriate habitat enhancement activities in non-reef regions of the MPA; these activities that support the need for information and understanding for appropriate management actions and activities.

MS. KARAZSIA: Are we closed on this issue, because there was just one other thing that I wanted to bring up, a recommendation.

MR. BLAIR: That is fine. If there are no comments, which I am fine with that, we can move on. I think I have relatively extended the notes that I had for what we wanted to include.

MS. KARAZSIA: This isn't a recommendation specific to CE-BA 3 or CE-BA 4, but it is something that I think Bob Van Dolah brought up and somebody else brought up. It would be helpful – and I am not sure who exactly we are making these recommendations to or who would be doing the work, but it would be really helpful to have some sort of a composite map that shows areas that have been mapped, areas that contain coral and areas that haven't been mapped.

I suspect that that would be a huge undertaking to put together a map like that but I think several different programs would see a lot of value in having that map and having it be sort of a living product that is updated when new information becomes available. If there is ever an opportunity for us to put together something like that, I would certainly support that.

DR. GILLIAM: I second that. I am very visual and I need to see where these things sit in relation to each other; because I get mixed up with all these acronyms and locations as well. I definitely agree that some type of tying this all together in a spatial sense in a map would be very useful.

MR. McFALL: Anna, do you know what the status of the ARC IMS project is that Tino and Roger were working on for so many years? I mean, wouldn't that serve the purpose that we are talking about?

MS. MARTIN: I wish Roger were here to talk about that. We do have accessibility to serve up those various forms of files from the IMS server.

MR. WAUGH: Roger would have to be the one to give you the current status, but he did say they are making progress, and it is something that we talked about being able to use with the council. I don't think we were talking about December. I think we were talking about the March meeting when the council gets together to look at all the public input that system would then be ready to do this type of mapping and show all the areas that have been mapped and that have regulations and what the regulations are.

MS. KARAZSIA: Even if it is just at like the presence/absence level, not density and abundance, and just something really stripped down and in easily digestible, shareable format like a KMZ or shapefile, would be really useful.

MR. BLAIR: Steve might be able to address that a little bit in his upcoming presentation at least and with that in mind kind of discuss that a little bit as well. One other thought that I had relative to a consideration is we kind of saw the relative anomaly of the location of the Lophelia in the shallower waters. Is it something that is of even a feasible process, do you think, to try to have an aspect for better understanding of the location of that 8 degree thermocline to better at least anticipate where we may need to be moving or looking?

DR. BROOKE: Yes is the short answer. There is some oceanographic data that Steve was looking at and that can be further mined, but it is very sporadic. There are instruments that can be deployed, and we had actually already started talking about the possible funding stream through the navy, through a cooperative grant, but that really hasn't gone anywhere. As soon as we found that site, we started trying to figure out how to get back to it.

I think that is a very important site for a number of reasons. I mean there are various ways to skin this particular cat. If we can come up with funds for an ROV, then maybe NOAA could kick in ship time through cooperation or something. The short answer is yes; that temperature and the bathymetry is what is driving the presence of Lophelia there. We don't know for sure how far the Lophelia goes until we know what that temperature is, so, yes, it is very important.

DR. ROSS: I would just like to add to that. In the same way that we made a recommendation for a short expedition to the Snowy Wreck, a targeted expedition of some sort here to do CTD transecting, which is relatively inexpensive, or even something a little more involved would be useful.

We are working on a manuscript from that area that hopefully will pull together a lot of the background oceanography data. But the hypothesis is that this nutrient-rich upwelling is causing a plume, which triggers a primary productivity hotspot, and that has been noted in the oceanographic mapping. It is just that the connection to the benthos hasn't been documented. It sort of has maybe a wider importance and implication than just the locations of this cold water fauna on the bottom; because that productivity gets distributed in a broader area and those upwelling spots have been targeted in a number of papers as being important for I think in relation to secondary zooplankton blooms and larval fish transport and survival.

Doing a little more work there in cooperation with some physical oceanographers would have maybe a broader payoff. That kind of stuff gets into things that are fairly expensive, but not necessarily so, especially if there are cooperative resources through NOAA ship time or various partners that we have got in the scientific community.

MR. BLAIR: I think that kind of one of the aspects that come out with just the whole aspect of how much in our first kind of modification of the HAPC that we are seeing these things that come out to play, and that seems like kind of a big flag or red light sticking out that, this may help us at least understand what potential areas we may need to look at or what other areas may become involved in the future.

I agree, I think it is a good aspect again as a recommendation to investigate and support temperature studies, to define the potential limits of Lophelia. I don't even think we will have to

put – we could put the actual 8 degree C thermocline in there if you want, but relative to its importance in defining the geographic extent of Lophelia. If that is in essence acceptable, I will try to reword that or if anybody has anything they want to add to it.

DR. ROSS: I had one thing I think we should add to that, and that is to fill in these blanks with additional multi-beam mapping. That is like a short cruise on the Nancy Foster, and that should be fairly easy to do. This area is extremely rich in hard bottom and corals, so that would significantly add to our data.

MR. BLAIR: Are you saying as a separate or the continuation?

DR. ROSS: No, along with everything else that we are proposing to collect; filling in the remaining multi-beam map would be important.

MR. BLAIR: I am just thinking of this as a logistical aspect of it when we are talking about attempting to define the 8 degree C –

DR. ROSS: That can happen at the same time.

MR. BLAIR: Yes, but it is going to probably be over a much greater area than we would be able to multi-beam.

DR. ROSS: No, this area – I mean this was done in a few days, the colored area. I can't remember how long it took Dave Naar to do that but that was --

MR. DAVID: Well. that is the combination of what we did on the Brown and what Naar did on his cruise.

DR. ROSS: Right, I think we did these outer strips on the Brown. That was done over two nights, I think, and I can't remember if we did anymore, so barely a full day, and then he maybe had two or three – we are talking a few days.

MR. BLAIR: I guess I am thinking more extensively and this is the area that we found this to occur. What other regions have this similar type of bathymetry and upwelling process outside of this explicit region that might identify additional areas. I was actually thinking of a broader scale approach, or at least in consideration of what we think is the best region to be at least evaluating whether this is truly an anomalous area or whether this is indicative of some other combination that we can identify later.

DR. BROOKE: I think this oceanographic feature is being deflected by the Charleston Bump, or it is the Charleston Bump that is driving the deflection of the stream that pulls this upwelling up. That is my understanding. It is the proximity to the Bump that is driving the upwelling; is that right?

DR. ROSS: North of the bump, but not this one. This is south.

DR. BROOKE: Yes, I know it is, so this has nothing to do with the deflection around the bump?

DR. ROSS: No. I don't think so, but that is an important point, though, because this particular one may be fairly predictable because of where it is and the fact that the Gulf Stream is most of the time pulled fairly far offshore here. From the Charleston Bump north it meanders in a somewhat unpredictable fashion, so upwelling occurs anywhere from the Charleston Bump north and at any time. There have been documented numerous cold water intrusions under the Gulf Stream and associated upwellings and plankton blooms, but they are highly variable.

MR. BLAIR: This is obviously more persistent.

DR. ROSS: It appears to be.

MR. BLAIR: I guess the question then would be in doing this should we be defining the geographic region where we want this to occur; and if so we should probably put that into the recommendation.

DR. ROSS: That would be useful, yes.

MR. BLAIR: Then I am going to ask for assistance and give me that geographic range that we want. It makes sense; we can't do it all from North Carolina to Key West.

DR. ROSS: No matter what we choose, we are going to be guessing at the area to do that and the other problem is we are going to have to – I mean, the best recommendation would be more than one time a year. The best recommendation would be quarterly whether that is feasible or not. CTD transects from 80 meters out to 500 meters would probably take 12 to 14 hours of work, one transect.

MR. BLAIR: Well, how about at this point with this on here, kind of think about it, chew over, mull over it; and tomorrow hopefully we will refine it to what we either think is appropriate or pass on it, make the decision then. Are there any other considerations for recommendations at this time?

DR. GILLIAM: I don't have a recommendation; I just have a question that came to mind during these presentations. I don't know what word to choose, but what is the relationship for the level of communication between the council and the navy in terms of what we are doing here with these areas and then seeing overlap with – and I would assume potential use conflict with navy activities. That exists in South Florida as well, so what happens between the navy and the council at these locations?

MS. KARAZSIA: I just wanted to say that Andy David has been instrumental in helping to bridge a communication gap between us and the navy, and as you can see from the presentation there has been a lot of information sharing, and probably through that a lot of trust has been built. I think we need to be really careful and look to Andy David to make sure that we can continue that relationship.

DR. GILLIAM: Does that relationship include strongly suggesting that the navy not do particular activities that affect the habitats that we are discussing within these boundaries? I struggle with seeing navy activities in the same areas that we are spending so much time trying to identify the areas that we believe have protective needs.

MR. BLAIR: We have a number of presentations to go through. I don't think that we should at this point in time be constrained in where we feel we need to have protective measures.

DR. GILLIAM: No, that wasn't my direction at all; I was just curious. I guess there is communication?

MS. MARTIN: Dave, we have a Habitat Advisory Panel in a few weeks and Roger has invited – the name evades me at the moment, but there is someone from the navy coming to talk about proposed activities. I am not sure what; it is preliminary at this point, so he has certainly been involved with communication with them.

Obviously, when the AP is making these recommendations, they will be presented to the Habitat Advisory Panel as well. It is not something that is not occurring. I don't know to what extent it is occurring, if it is adequate. I am not sure, I can't answer that. Roger could do a better job of bridging that gap right now than I could.

MR HARRIS: The navy has been to the council meetings on a number of occasions and made presentations on various subjects. Of course, we make recommendations back to the navy. We all know that if it is in the interest of National Defense, our recommendations might not carry a whole lot of water, but I do think they are interested and concerned and they certainly listen to our recommendations. They are going to do what they have got to do and we just have to continue to do what we have to do and hopefully we can meet somewhere in the middle.

MR. BLAIR: What we are going to do before we get into the discussions and so forth, would anybody care for a short break? We will keep it to ten minutes.

(Whereupon, a recess was taken.)

MR. BLAIR: Okay, we are going to get started again. One change has occurred. The second presentation, Optimization of Surveillance and Enforcement in Remote Marine Protected Areas, will be presented as part of tomorrow morning's presentation, just to let you know. Other than that, the rest of it should be the same. We will start off with Steve Ross discussing the Mapping and Characterization of Habitats on the Continental Slope off the Southeast SEADESC Project.

DR. ROSS: This discussion is about a project that has been ongoing in the southeast for a number of years. I think we started somewhere around 2004 or 2005 maybe. It actually was born at sea on one of our cruises and culminated in 2007 with this hard copy and electronic report, the cover which is shown there.

The objectives of this project were to bridge a gap between researchers and managers and amongst researchers to try to get data distributed quickly without – the real impediment there is

often that researchers do not want to give up anything until they have published, and so we are sitting on tons and tons of data that nobody has access to.

I was visiting coral sites so I said, gee, I know John Reed and other people have been here, but I have no idea what they saw, I have no idea where I should dive, and so we came up with an idea of quickly characterizing submersible and ROV dives into a two-page format that would basically capture all the metadata from a particular cruise and dive and roughly characterize the habitat without giving away the scientific secrets that everybody wanted to protect.

It was sort of a compromise. It was never meant to be a final, detailed mapping of the bottom. We always expected that individual researchers would go back and do additional analysis. It was meant to be something that could be repeatable, as with moderately trained personnel and rapid. With the emphasis on those things, it has a number of constraints.

I will talk a little bit about this project. The 2007 report characterized I think 66 Johnson Sea Link dives in the Southeastern U.S. from North Carolina to South Florida from the years 2000 to 2004. Recently, after this project ended, I had been continuing the project, although it was started as a committee activity, not necessarily run by me, but I continued to keep it going until the council added some additional money to it, and that is what I am going to try to report on here is what we are doing with this project now.

Here is what we have accomplished in the last year, and we have got maybe I think a little bit less than six months left. We have incorporated a software developed by the French research outfit, eFimer, called the Daily. A Daily allows you to synchronize underwater video in a GIS map so that you can look at where you are in a GIS setting and follow video at the same time, so it allows for a simultaneous ability to classify habitats.

It is not used very much in this country. The Europeans use it more frequently. It is very expensive. We feel that it has been worthwhile. It is a fairly steep learning curve, but it has been very useful in terms of speeding along our video classification. We have completed an in-house fish ID guide to help with our technicians in identifying the dominant fish.

We are working on a sponge ID guide and a coral ID guide. Right now these are in-house products. Potentially they could go to a wider audience with some clean up. I will show a little bit of an example of what that looks like. As part of this project we were documenting – this gets to the mapping issue that several people brought up – we documented the dominant Scleratinian Museum records in this area and evaluated them, and that paper has been accepted for publication. In addition, we picked one coral mound to pick apart fauna and habitat relationships in a much more detailed way than we have done with things like SEADESC.

That paper has also been accepted and is in press. I will show a couple of examples from both of those. During the course of the project, we had a variety of meetings with a number of people on technical issues. We found a number of problems with the original, not the original reports so much, but the original process, in terms of cleaning up submersible tracks.

We fixed those and automated them with the help of some mathematicians at UNC-W. We had a number of issues with video analysis that required several meetings. We have also been involved with the Deep Sea Coral Program at NOAA, which has an interest in doing something, which we are still calling SEADESC but a broader and actually now a national interest in bringing something like SEADESC into the Deep Sea Coral Program, so that every cruise and every ROV or submersible dive is documented in the same way.

We are still working on that. The two-page dive summary is still part of that but it has been expanded – I think Andy touched on this – to include much more detailed video annotation from these dives. In the new part of the project we have so far completed 46 dive logs and I have a summary of those.

This is just an example of the cover page for the fish ID guide and the number of species that we have in there. There are several underwater photos of the fish and pointing out their taxonomic characteristics. One thing I will point out is that we have placed a heavy emphasis on collecting material as we do video analysis so that we can document the video identifications.

This has been a weak point in a lot of studies. It is difficult to prove that you actually saw what you say you did. Here is a listing of the dives we have incorporated in the new project and some that are remaining to be done. Sandra generously contributed work from her 2005 and 2007 projects where she was the lead PI, and she has been a big supporter of this process.

We incorporated a number of her dives. Most of these, even those four that say in progress, are actually I think now close to final review. As time allows, we are going to try to incorporate – the 2010 dives here, I should say, came from the cruise that Andy David noted under the Deep Coral Program that she and I were the lead chief scientists for.

Those are already done and in the program. The 2009 cruise, those dives remain to be done and we will be working on those. In addition, I fortuitously ran across a whole pile of old data from Charlie Paul, who is a geologist who did a lot of work on the Jacksonville area. He published the first paper in 2000 on the Jacksonville lithoherms area.

He was the one that proposed that there were as many as 22,000 individual mounds in that region. Charlie's data was stored in a warehouse at MBARI, where he ended up when he moved from Chapel Hill. A forklift backed into the pile of data and scattered it all over the floor, but he gathered it up and sent it all to me.

This is quite a treasure trove of historical data that will document an additional number of sites in the Jacksonville area. We hope to incorporate that. Unraveling that box full of information is going to take some time, but we intend to tackle that at some point. We have added 46 dives, as I have already said, to the existing 66 logs that were in the original publication. Most of these were from off of the Florida East Coast.

We hope to incorporate 44 more dives, so altogether we will more than double the existing documentation. There is quite a bit of other data that could be added. Originally SEADESC was

focused on underwater observations that actually could document the bottom, but it was also envisioned as an ongoing project that could incorporate a wide variety of historical data.

This doesn't show up very well in this kind of format, but this is one of Sandra's 2005 dives, I believe, off of that Portales Terrace. The format includes a large area map, a dive track map that is color-coded for habitat, standardized habitats, metadata on the dive itself, some additional dive data like temperature, starting and ending locations. Geo-referenced photographs, these have the lat/long and it is noted on here where that photograph comes from.

There are three more photographs on the second page. If we know of literature – we didn't do an exhaustive literature search, but if we knew of major literature that was relevant to that area, we listed it, a brief biological summary of the video tape, brief physical summary and additional comments like the video tape sucked or something like that.

Here is a slightly better one from a more recent dive. I think this was a 2010 dive on the Ron Brown, and you can see this map is now a multi-beam shaded bathymetry map, much higher quality. We have higher quality photos even though a lot of the Ron Brown data were somewhat marginal, we do have more clear photos. These are a bit dark, same general format.

We now have the ability to add multi-beam data to all of the historical sites with one exception. We have got multi-beam data on all the deep sea coral sites that we have worked on except the Savannah Banks. The museum project that we did was to accumulate data on four hard coral species, Madrepora, Lophelia, and two species of Enallopsammia.

From any major museum holding that we could find, that turned out to be basically four museums out of maybe eight or ten that we contacted. I have a particular dislike for the dot distribution maps that are showing up everywhere. They have marginal utility. A lot of them are based on records that are not well documented, of unknown historical significance, and a lot of missing data and a lot of wrong data.

What we set out to do was in this paper to determine what kinds of errors and problems there were with these sorts of data; and once we sorted that out, what their utility might be. In the project we found 345 records of these four species, most of which were located at the Smithsonian, University of Miami Marine Lab, the Peabody Museum at Yale, and the Harvard Museum of Comparative Zoology.

Most people, when they grab these kinds of data and plot them, simply go to the internet and grab the online available data sources. Quite a lot of records are not available by internet because they are not catalogued and entered by the museums yet. Most of these records were of dead material – I will show an example of that in a moment – and we could determine from the museum specimen with some degree of accuracy whether the specimen was collected alive or dead. I think that is important or at least I think it is important when you come to using these kinds of specimens for modeling.

These are a lot of the records that have gone into the kinds of habitat suitability modeling that Davies and Ganaut have published. Most of these records were collected by mobile gear,

meaning trawls and dredges. In relation to that the average – well, let me back up a second. Quite often you can't find the two points for a mobile piece of gear in these records.

If you only have one location and you don't know whether it is the start of the end, it is almost impossible to find those data. For a number of records where we could go to old cruise reports, we did a lot of investigation trying to find these things. The average length of a trawl was 11 kilometers and the range was 8 to 38 kilometers, and that sounds like a lot and it is.

We actually had one record that was at 46 kilometers, which I think is probably wrong. But what happened a lot of time in these exploratory surveys that people were going to take two hours to put down a trawl, they would tow it for two or three hours at 2 knots, so you cover a lot of territory. Sometimes if they were going with the current, they went even faster.

When you are considering these dots and what they might mean to the distribution of corals, what does it mean to collect a fragment of dead coral that might have occurred anywhere over 20 kilometers? I am not sure that means a whole lot compared to a submersible record that was collected at a single point and was live.

These are the kinds of things I think that this information needs more evaluation. That is why I have flagged this bullet in red. Just blowing up that central region, I am not sure that these colors show up very well but we were able to determine that some of these corals were collected alive and some were definitely collected dead.

The stars, which don't show up well, are known coral sites that we have visited with submersibles. Most of the dots don't correlate with that because they were collected with trawls. Most of our dives were accomplished in very rugged habitat, which was pretty much untrawlable, so the trawl gear avoided those.

Most of the records in the region fall under the current axis of the Gulf Stream, and most of them fall within the known boundaries of the CHAPC. But note here that is the shallow Jacksonville site and that is the offshore Jacksonville site here, and here and here are the Jacksonville sites we have dived, and that is the one we talked about today.

We have a string of records that go inshore, and normally I would discount these. I would say they are very questionable, but because of what we have seen in this area it could be that these do point to the occurrence of corals over a pretty large distribution. With other information, these become more valuable. I know I am spending a lot of time on that.

Just real quickly, this is a blur of colors. We picked one isolated coral mound where I think we had nine submersible dives. All those submersible tracks are shown here. We color-coded habitats, cleaned up the dive tracks, plotted the distributions of animals – the dots on these maps are different sizes – and we modeled a variety of different aspects of the coral mounds based on mostly multi-beam bathymetry like slope and rigosity, bathymetric position indirects and correlated those with the animal distribution. These are the kinds of details now that we expect other researchers to go into that are not part of a broader data base.

So just a few recommendations on this project to end; we are continuing to add new data. Originally this project was to include Oculina dive data, and we did include some Oculina data in the original test project, but we since have not been using Oculina data. We could go back to the original dive logs and make some substantial improvements like underlaying those with real multi-beam bathymetry, which before we didn't have, so those maps are not very attractive nor as useful. We could enhance the photos as well.

The data base itself could use some improvement. It is not necessarily the most user-friendly data base, so we could spend some more time with that. The museum specimen evaluations could include additional species. For instance, we didn't look at antipatharians, and it could also include sponges, so there is a lot of information to mine there. But I would caution the same way with those as I did with those four corals that that information requires a lot of scrutiny.

I should have added also that we actually visited the two major museums and handled each specimen. If we couldn't find it, it was lost. Interaction with the museum curators and photographing all those specimens was quite useful. We would recommend republishing the SEADESC report at some point.

I think hard copies have value but certainly an electronic version would be good. One aspect of this project which we have not been able to deliver on was a demonstration web version that would allow some interactive manipulation of these data. For some personnel reasons we simply haven't been able to pull that off. We have substituted other data in place of that.

However, that still is a valid way to go, and at some point we could see even things as fancy as fly-throughs. Other people have done that kind of thing. In a nutshell that is the project. I think we ended this phase of the project in next March.

MS. KARAZSIA: Steve, is there a spatial component like do you have shapefiles or KMZ files for different dive tracks?

DR. ROSS: Yes, this is all done in Arc GIS. The analysis goes is actually done in Arc GIS, but, yes, there are shapefiles for all of the dive tracks.

DR. BROOKE: I am not a GIS person or a Google Earth person, but it seems like if Roger's project gets on track and becomes available, there might be a good place to interact the logs and also what we were talking about the law enforcement meeting as a forum for the regulated areas.

MR. BLAIR: Steve, I guess after March, is there any perspective at this point or is it final?

DR. ROSS: That depends on money. It may be to the council's interest or NOAA's interest, or we are not sure who is interested in continuing this. Originally this project was a partnership with NOAA OER, which at that time was OE. They had a vision of continuing this into the future and it replacing what they were using as an at- sea documentation.

I think while that stalled out at one point, they have sort of come back to that within the Deep Sea Coral Program to be that documentation, but money just didn't continue from that source. I

think there has been a lot of interest in it. Certainly, the Deep Sea Coral Program is going to move parts of it forward under their own momentum at different parts of the country. For this region it is unclear; there is still a lot to do.

MR. BLAIR: Okay, any other comments or considerations? I'm trying to consider if we have a recommendation that we could put forward on this. I guess, Andy, I might ask you is the aspect that Steve just said relative to this potential for it, how does that integrate into what you presented earlier?

MR. SHEPARD: I think the recommendation that I have or the action item I have is to make sure that the ones that the Deep Sea Coral Research and Technology Program is co-sponsoring, at least those get forwarded to the council for this region, or at least you are made aware of where they are archived. When these projects get done – as these logs get done and they are archived – in the case of what I proposed before, we were looking at putting SEADESC logs in the NOAA Central Library, but we need to let you know when those things get archived.

DR. ROSS: Which ones are you referring to because the ones we have already done will go to the council?

MR. SHEPARD: Yes, the ones you have already done, but there are also ones that are coming that are being funded out of the Deep Sea Coral Research and Technology Program.

DR. ROSS: Right, and my thought was that they would also go to the council, but I didn't see any reason not to think that.

MR. SHEPARD: There will be other ones done by other investigators, too, so if Steve will continue to do that; that is great. We want that, but we will also make sure that the other ones that may or may not remember to send it to the council. I think John Reed will and there are some that will, but maybe there won't be, too.

DR. BROOKE: A question for Andy; is the format going to be standardized, because the one that I have seen from John doesn't look like the ones that Steve has produced?

MR. SHEPARD: No, I would say that they are still – everybody has got a better idea of how to do this. What worries us is that what Steve proposed as that rapid turnaround product turned into what they are calling Level 1 and Level 2. Level 2 starts to have video annotation analysis as Steve put forward. Plus, it started to change between different people, so you saw different categories, for example, of different fields.

My recommendation to the Deep Sea Coral Research and Technology Program is that if you want the web version, if you want a relational kind of data base where you can search and call up things and add things and have it accessible to a broad public audience, you have to have some standard structure in that and make it not standardized, but make it compatible so that they can create this national archive or resource. That recommendation is before them.

I give the Deep Sea Coral Research and Technology Program an A+ for intent and the amount of time and effort they are putting into it. I give them probably a C in terms of being able to look ahead in terms of that kind of approach, being able to get ahead – and that is not their fault necessarily.

It is a matter of resource and then having the people on staff who are IT people, who as anybody knows who has ever developed an IT product, you have to have all your requirements all laid out ahead of time and then you develop the product. Now they are trying to do it kind of after the fact and it is going to be difficult, but we need to do it.

MR. BLAIR: I have got a placeholder recommendation; because we talked about this before, about the council working with NOAA to ensure that there is the information exchange necessary that can benefit the council's mapping procedures and IMS. I have that as an additional one that we will finalize for tomorrow.

Especially also if that wording is needed, per se, or again if this is something that we know is going to occur and is absolutely necessary, but it will be there as a placeholder. Thank you Steve, I appreciate that very much. Next, Andy David is going to be speaking to us on a couple of topics regarding the South Atlantic MPAs and Deepwater Corals HAPCs, Characterization of Benthic Habitat and Fauna, as well as the second item that was on the list, Synthesis of Information on Octocoral Fishery.

MS. MARTIN: Steve, I just wanted to clarify that Sandra will be providing your update on the SERMA Project tomorrow morning, correct?

DR. ROSS: Yes.

MR. DAVID: This will be quick, no slides. I didn't really prepare a lengthy presentation for this. All right, for the first one, which is the Deepwater MPAs, we started work in 2004. We have had one cruise every year with the exception of 2005, when our ship time was a week after Hurricane Katrina and NOAA decided to send the ship over to the Gulf Coast and rescue people rather than take us out chasing fish.

But what we have done is at the point we started, you had all the proposed options for the Shelf Edge MPAs, we were able to look at all of the ones between Jacksonville, Florida, and North Carolina. The options off St. Lucie and the Keys we did not go to; they were just logistically too far from the other ones.

We looked at all the options you had, which I believe was 11 options to start with, and then you increased the Jacksonville one to 6 options by itself. We tried to include ROV dives in all of those spots with the intent that the ones that were not selected for closure would be our control sites, so we would have before and after a closure and open and closed areas.

These were all ROV dives. We patterned it on a project we had done in the Gulf of Mexico, which had a ten-year time series. Those projects or those MPAs we had 100 percent multi-beam

coverage for. We did a stratified random design and we used stationary video cameras. It is a stationary array that had four cameras in it, principally for fish and not for habitat.

The camera array worked very well, had no lights, made no sounds, and didn't alter fish behavior by its motion or lights or anything else, because we know that some of the fish that we are looking for are afraid of ROVs and flee the scene when it shows up. Others are intrigued by it and are attracted to it. We wanted to have as minimal impact on fish behavior as we could.

That was our pattern; that was our goal. In the South Atlantic we have very little multi-beam coverage at that time, and even currently we have – well, thanks to the navy we now have 100 percent coverage of that North Florida site off Jacksonville. We have maybe 10 or 15 percent of the one off Georgia and a little bit of one of the South Carolina ones.

We don't have much on the Snowy Wreck; we don't have much on Edisto. But still we try to go once a year and do an ROV survey, looking primarily for fish and habitat relationships. The fish, of course, we are looking for are the five grouper and the two tilefish that the council established those MPAs for, although we do count and try to identify every fish we see. We provide an annual report to the council when we do those projects.

I guess the most interesting thing is probably the lionfish. Those MPAs are in the lionfish depth zone and we have seen huge variations in them. They haven't been continually upwards. They were rising every year for a while. We even had one – you know, order of magnitude increase from one year to the next, but they have fallen off a little bit so maybe they have reached some sort of maximum and are falling off.

Now that is a project, like I said, that started in '04, and it is now funded again. We had a hiatus in funding this year, but the coral program is now funding it through the council. We have submitted our proposals to the council and the council presented those to NOAA and NOAA funded them. They can't give the money to the council and have the council give it back to us so they give it to us directly. It is an odd triangle, but it is just the way some of these things work.

All right, the last one, the Synthesis of Information on the Octocoral Fishery, well, that was interesting to hear that this morning. We were aware that the Gulf Council had relinquished some of their control to the South Atlantic Council. Now it looks like you may be relinquishing it to the state of Florida for management, which probably is a good idea since most of the fishery is in state waters rather than federal waters.

Seeing the interest there and the SSC's questions about the quota, we put another small proposal in and it was also accepted for funding beginning with work next year. We haven't done anything on it yet, but we are prepared. Our first thing is to make sure we know how to identify these shallow octocorals.

It seems quite a bit of the existing identification is almost color metric, the orange ones and the purple ones and the squishy blue ones. We would like to come up with correct types and identifications for them. Chuck Messing down at Nova Southeastern, we have contracted with him to have a workshop with some experts that he has assembled from I guess the whole

hemisphere and not just the country; to work with existing samples they have and photographs and come up with the stock identification guide that can both be used online or hard copy; that can be used in the field by port agents who are looking through the marine life catches when the trip tickets are reported through the state fisheries landings data system.

That workshop is coming up very soon, and I know there will be some people a couple seats down from me I hope who can be involved with that. We have high expectations for that. The rest of the Octocoral Project will be to try to use that identification guide and look at the existing state of Florida records and back-calculate what the species landing were based upon the taxonomic or color records or whatever the morphological descriptions were that is in the landings, so we can see about reconstruction, some of the catches, also look at some of the life history estimates or characteristics of these species, how they are collected in the marine life trade.

We certainly don't think there is any problem there. This is an aesthetic fishery; they are not clear-cutting, they are very selective in picking just a few colonies from the populations, but that is not documented so we would like to try to work on documenting that.

DR. BROOKE: Andy, what is the geographic range and bathymetric range of this document that Chuck is putting together?

MR. DAVID: Geographically it is where the fishery is, the Marine Life Fishery, so it is probably no further north than Broward County and the Keys, and in the Gulf it is probably not past Ten Thousand Islands. Depth range, it is hand collected by divers so it is probably out – how deep do you go, 30, 40 meters?

DR. FEDDERN: It goes up to at least Boca Raton, probably – not Boca Raton but West Palm.

MR. DAVID: So it is pretty extreme southern Florida and pretty extreme shallow by the definitions or what we have been talking about today.

DR. GILLIAM: I just had a question maybe you or Henry can answer about the landings. Does the landings data include whether it is a whole colony or a branch clipped from a colony; how is that –

DR. FEDDERN: I don't think anybody sells the branches; it's just whole colonies. The problem with the data is that site – well, it is a purple color forming, it is a purple category. There could be many species in there. The thing is that since it is a demand fishery, the assemblage of species and the numbers of each species that is incorporated in that category varies constantly. It would be very difficult to extract any numbers of a particular species of that.

DR. GILLIAM: How about size; is that recorded as well?

DR. FEDDERN: I collect very few larger than 15 inches. Number one, that is the size of the box. I have on a few occasions in the Republic of Korea caught 3 footers, but then I have to curl them around in the box, and it is basically one per box, very expensive, basically for public

aquaria and research and stuff like that. But the most of them are anywhere between 4 inches to about 12 inches is about the ideal size, up to 15 inches.

MS. KARAZSIA: Just a quick question about the MPA monitoring; I thought I recall seeing a report like a white paper or a technical report that was put together, maybe by you and Stacey, that – and I know that you didn't have as robust as a data set that you wanted, but that it seemed to suggest that the MPAs were like working n regards of fulfilling the objectives as set forth to help bring more snapper grouper species into –

MR. DAVID: They have very long lifespans, and we have seen increases in some of the targeted five grouper and two tilefish fish species. To say definitively that it is due to the MPAs and not some other variance that is naturally occurring, we would be hesitant to make that claim yet. I know in the Gulf we saw significant increases in over a ten-year period. The rate of increase – when the populations overall were increasing in the Gulf, the rate of increase in the closed areas was significantly higher than outside.

The rate of increase inside was 19 percent; the rate of increase in the open to fishing areas was 1.6 percent. In years when there have been declines, the decline inside the closed area has been a slower rate of decline than the area in the open fishing areas. These have not been closed for very long, so it is probably pretty early to say that the closures have had an impact that you can see in adult grouper that are – these are spawning areas, or some of these areas are spawning grounds, most likely. Those are old fish.

Those were in existence long before the closure started, but that is certainly what the goal is. We found in the Gulf probably the most important factor on whether the MPA is working or not is the level of compliance, which isn't strictly enforcement but how well do people self-police themselves and not fish in the closed areas.

They aren't very big, it is not a great demand to ask people not to fish in them but it is hard to keep everybody out. If you have VMS, that will help a lot. VMS has just started in the Gulf and that is showing an improvement in the compliance rate. That is certainly what you hope to see. I think in the Atlantic there is a better chance of getting good estimates on success when the time series is more than a couple of years old. You have before and after the closure at the same spots.

Most MPA analyses are faulted because they are looking at – they start when the MPA is inactive and they look inside the MPA and outside the MPA. That is the comparison, not the same spot with closure and without closure. No matter how similar you try to pick your inside and outside spots, they are different.

Here with 5 or 6 years of pre-closure data and now a couple of years of post-closure data. I think some of those criticisms can be alleviated. But we would still really like to have maps of all the areas so we can use a less behaviorally modifying survey tool; less ROVs, more stationary cameras.

DR. BROOKE: One last question. There is some anecdotal information that the big grouper eat lionfish. In fact they eat dead lionfish and whether they eat live lionfish is up for debate. Is it too early to say whether the presence of the bigger fish inside is controlling the lionfish? You said they kind of reached a plateau. Do you think that is what is going on?

MR. DAVID: Probably so because the grouper we have seen inside have not been really large. Mostly it is – I mean, we see a lot of scamp, That is probably the dominant grouper, but that is not one of the five grouper species, Warsaw, yellowedge, speckled hind, misty and snowy; and golden and blueline tilefish. Scamp are probably the biggest; they are the most dominant of the groupers and they are not big enough to eat these lionfish.

We haven't seen any lionfish predation and we are doing a non-destructive sampling. We are not catching any fish so we are not looking at gut contents. The anecdotal reports we hear about lionfish predation is also – it is really good if you wound one, it doesn't have much of a chance. Eels will eat them, grouper will eat them, other things will eat them, but healthy live ones seem to be pretty predation resistant.

DR. FEDDERN: Something is happening in the Upper Keys because I see very few lionfish in Hawk Channel, very, very few, or even on the shallow edge. Most of the ones I see are under the bridges. Why is it that they are not in all these patch reefs in the Hawk channel? Something is happening to them.

MR. DAVID: Where they are native, they don't have these huge population increases as we see here. There is something controlling them, whether it is an early life history stage or something.

DR. FEDDERN: Are they doing any studies out in the Pacific to find out what is controlling them?

MR. DAVID: I don't know. I suspect you could get a lot of volunteers to go over to the Western Pacific and dive around and look for them, but I am not sure.

MR. McFALL: Typically they are thought to be resource limited in their natural environment, so competition with each other keeps their numbers low.

MR. BLAIR: Henry, a point to that and knowing what we see off Miami-Dade and Broward County over the last two to three years literally has been an explosion and expansion both in density and coverage of the lionfish. Where they used to be restricted more or less to the deepwater wrecks, they are now on natural reefs up into 45 feet or so.

Unfortunately, what we are looking at we think is just a time expansion as they move in and become either more adept or more adapted to the other reef resources that they unfortunately – we find them in canals in Miami-Dade, that are canals off the Biscayne Bay. They have been pretty much expanding throughout the range.

The restrictions – because I remember when they first came in, I think it was in the deepwater areas off of North Carolina is one of the first areas that they were first found and I thought, oh,

great, they are a deepwater fish and they will be contained there. That unfortunately didn't remain that way.

MR. DAVID: In Panama City we had our first ones in November of last year. The last time we were at Pulley Ridge at the southern end of the Gulf, when we were there we saw none and we looked very hard. They were there a month ago and saw hundreds. Once they arrive, they exploit the area quickly.

Lionfish isn't one of our focuses, by any means, but we do see a lot of them on that MPA project so we take all of the data that we have on lionfish, size, position, depths, photographs, and we send it to the Beaufort Lab, which there is a split NOS/Fisheries Lab there and the NOS group is working on lionfish, so we send them our data to add to theirs and try to bolster their data set. Theirs is mostly diver collected; ours is a little bit deeper and all ROV collected.

MR. BLAIR: Okay, thank you, I appreciate it, Andy. Moving on, we have a couple more things we would like to try to accomplish today, and then we will be breaking for the day. Next Jocelyn will give some information on an update for the Fisheries Habitat Conservation Division of NOAA.

MS. KARAZSIA: Usually at these meetings I provide an update on some important essential fish habitat consultations that our office is engaged in that pertain to coral resources. I picked four projects and I am going to go through them pretty quickly, but if you have any questions feel free to ask.

Actually, I threw this slide up first as a followup to one of the conversations or discussions that we had earlier today, which maybe helps to better describe what the difference is between a coral HAPC and an EFH-based HAPC. With all of the coral HAPCs now falling under an EFH-based HAPC designation, we will have a better tool in our toolbox to address these non-fishing impacts.

Like we discussed earlier, many of the habitats found within a coral HAPC are also EFH and EFH-based HAPCs, and the Essential Fish Habitat Consultation requirements provide a framework to help guide how impacts to these habitats are regulated. The first project I thought would be of interest to the Coral Advisory Panel, which I actually presented on a few years ago when our meeting was off the Lockwood Drive Hotel, what is BOEMRE, which was formerly known as Minerals Management Service, BOEMRE is the Bureau of Ocean Energy Management Regulation and Enforcement.

In May of 2011 they put forth a notice of intent to prepare an environmental assessment to describe the environmental impacts associated with issuing a lease to Florida Atlantic University. Florida Atlantic University, formerly known as The Center of Ocean Energy and Technology, has recently switched names to the Southeast National Marine Renewable Energy Center.

There are a few of these centers around the country and they have a consistent naming that is set forth and encouraged by the Department of Energy that funds a lot of the startup work. There is essentially three OCS blocks, Outer Continental Shelf blocks, that they are requesting for a lease

to install some marine hydrokinetic testing activities, and the depth range in this area is between 262 to 363 meters, and this is located offshore of Ft. Lauderdale.

This is a design of what it is that they are proposing to deploy. It is essentially a platform to measure various things. We have provided some comments in response to this notice of intent to prepare an environmental assessment on the types of things that we would like to see addressed in the environmental assessment.

First, here is the concern – and this is kind of one of the reasons why I have been asking about having a simple map that shows what areas have been mapped, what areas haven't been mapped where we know there are deepwater corals present; just general simple, presence/absence data, because we use this information in the simplest form.

This is a map made using Google Earth Pro, using shapefiles. You can see the three black boxes are the three lease areas, and they are within the coral habitat area of particular concern, and that magenta purple-type shape area is one of the allowable golden crab areas. Actually all of the other non-green colored shapes are all various golden crab fishing areas. Just a closer look, the closest leased block is approximately 2.7 miles away from the closest allowable fishing area.

I know you can't read this, but these are just some general types of information that we have requested that these items be included within their environmental assessment; one being a habitat mapping, a resource characterization report. We have worked very closely with John Reed in using some of the – because he has done some of the mapping associated with some of the other energy development activities that were proposed or are still proposed on our outer continental shelf. Sandra, I know you have been involved in some of that work as well with Chuck Messing.

We have worked together to help guide the FAU in this case, and BOEMRE, the Bureau of Ocean Energy Management, into giving them some specifics on what we would like to see in that habitat mapping and resource characterization report. We have also asked for them to develop a biological monitoring plan and then also an installation, operation and removal plan.

At this point I am not sure what the schedule is or when we will have a copy of the environmental assessment to review, but at that time it might be appropriate for the council to submit comments on that if we think that is appropriate. I can help keep the council informed on that schedule.

I am going to be shifting gears now and talking more about some port activities. We have three major seaports in southeast Florida, Port of Miami, Port Everglades and also the Port of Palm Beach. They are all in various stages of planning, expansion, activities. The Port of Miami and Port Everglades are approximately 24 nautical miles apart.

They are both in different stages of planning pretty aggressive widening and deepening activities to accommodate larger ships, referred to as Post Panamax, that are too big to fit through the current depths and widths of the Panama Canal. I m going to talk a little bit about Port of Miami, which is further along in the planning process, and then Port Everglades, which is not as far along.

Our consultation history is that in March 2003 the Army Corps of Engineers published the Draft Environmental Impact Statement, and that is when the National Marine Fisheries Service reviewed the project and provided our Essential Fish Habitat Conservation Recommendations. Since February of 2004, there has been little to no dialogue between NOAA Fisheries and the Army Corps of Engineers.

However we are in the process of – by the end of next week we are going to be communicating with the Army Corps of Engineers about some issues that have been raised recently regarding updated information. It is not that the impacts have changed. The design of the proposed preferred alternative hasn't changed, but our ability to better detect impacts has changed.

In particular there was a NOAA hydrographic survey completed in 2009 to a very high resolution. Based on that survey, there is an area within the Port of Miami entrance channel that when we reviewed the Environmental Impact Statement in 2003 it was characterized as being previously dredged.

Reviewing this data, we realized it doesn't exhibit some of the dredged signature scarring that you see in areas that have been dredged. We are looking at potentially an additional 1.4 acres of coral reef impact that have not been previously dredged, and we are requesting that the Army Corps consult for those impacts with us under the Essential Fish Habitat Consultation Requirements. This is just kind of a quick figure. This was from the 2003 Environmental Impact Statement, and that area in a red box is the area that is of concern that was identified as being a previously dredged area.

Then this is from the NOAA hydrographic survey, the same area as in the red box. This is a closer up image. It just doesn't exhibit the same type of scarring that you see. This is really hard to see from this view, but it doesn't appear to be dredged. Actually, Dave and his lab have done some dives in the area.

From what I understand, habitat quality-wise it is certainly not the best coral reef out there. It is within an existing shipping channel and it has a pretty high degree of sedimentation, but there are coral resources there that we believe should be part of an essential fish habitat consultation for the project.

We are also asking the Army Corps to fulfill some commitments that they provided to us in the final EIS regarding coordinating a compensatory mitigation plan; also issues that pertain to coral relocation, and we also believe that additional coordination is needed on monitoring related to this project.

Kind of related, since we are in the Miami area, I thought I would include a slide of this. This is the U.S. Coast Guard designated anchorage off the Port of Miami. This was designated in the 1960s. I am not sure if you guys recall the year, but as you can see the area in red is coral reef habitat. It is currently sited over – well, it has always been sighted over 700 acres of coral reef habitat.

It has been in place since the 1960s, so we suspect that the habitats are probably degraded to probably various extents. We have been working with the Coast Guard and other agency stakeholders in looking at plans to relocate this anchorage. We were able to -- a partnership-driven effort, largely led by the state of Florida and researchers at NECRI and the U.S. Coast Guard, we were able to successfully relocate an anchorage located off Port Everglades back in 2009 that was also a threat to coral reefs.

This is kind of the next attempt at relocating this anchorage. We are evaluating different options on how we can encourage the Coast Guard to make a change in this area. As far as the consultation requirements under essential fish habitat rules and Section 7 of the Endangered Species Act, there has to be a federal nexus in order for a consultation to be triggered.

In this case the designation occurred in the 1960s, but it is the daily operation that is continuously affecting listed species and their critical habitat and essential fish habitats that we believe requires consultation. This is also kind of hard to see, but some of the habitat characterization work or acropora surveys that were done associated with the Port of Miami, judging and some conducted by some folks in Steve's division, is that there are some server coordinate colonies located in pretty close proximity to the existing anchorage.

There haven't been any coral surveys done beside the mapping work within the anchorage, but we suspect – I know you can't see this, but right here there are these green dots here along the inner reefs and see how this feature extends into the anchorage that we suspect that you would find acropora in particular in this area as well.

There are also categories of EFH located within this anchorage. Like I said, it is the daily activities, the anchoring, and the chain sweep that is probably causing this adverse affect, which then requires the lead federal agency, in this case the Coast Guard, to do a consultation with our office.

Then finally one of the largest projects that is on the horizon is planned expansion at Port Everglades, which is located just to the north of Port of Miami. This particular map, you can see this box right here is the existing channel configuration, so deepening and widening is what is planned.

Right here we have the outer reef here in yellow, and so this darker yellow area is area of outer reef that would be completely dredged, and this orange area is middle reef, which would also be dredged or eliminated if this project moves forward. I just included a couple of slides on other habitats as well, but there are some pretty major substantial seagrass impacts as well.

As you can see, we are dealing with a lot of the halophila species. They are very spatially and temporally dynamic, and this time series kind of illustrates. You can see in particular, if you look in this area right here, that there have been some pretty dramatic changes. One thing that our office has been doing is putting together some cumulative cover estimates for seagrass species. In the entire project area, it looks like there is approximately 19 acres of seagrass.

Not all of that was within the dredge footprint but it is a pretty large area. There are also some mangrove impacts, including an area that was previously constructed as a mangrove mitigation area. But back to the coral reef impacts, we are looking at approximately about 20.3 acres of coral reef impacts.

Then these other areas represent an indirect impact zone that is defined by 150 meters; and the area of indirect impacts, if it is contained within this area could also be pretty substantial, around the order of 90 acres. Based on some work that the Army Corps contracted, it looks like there are approximately over 157,000 corals located within the direct impact areas.

The corals are composed of what you would typically find on Southeast Florida coral reefs, 29 species of hard corals, 12 genera of octocorals. Notably absent from the studies that are available are large barrel sponges from the middle reef, large corals greater than 50 centimeters, but we don't have a lot of information.

We actually have only really one study that was done in this area that was contracted by the Army Corps. We have some dive reports from other state agency representatives that have been to different parts of the project as well. Just kind of part of this effort we are working with – I know you can't see this, but we are working with our restoration center and doing a habitat equivalency analysis that looks at coral colony years lost.

Through this what we are doing is looking at some of the data from the Army Corps surveys, species and size class data, and we are determining how many corals and what size classes are, massive versus brooding versus branching corals. Most of the corals in the project area are considered massive corals. There aren't really many branching corals. As kind of an initial cut of gathering information to do this type of habitat equivalency analysis just based on normal growth rates, this doesn't consider any recruitment periods or anything like that, but at a minimum we are looking at over a million years of coral growth that would be lost by this project within the coral area.

We are what is considered as a cooperating agency under the National Environmental Policy Act for the development of this Environmental Impact Statement. Broward County is also a cooperating agency and the state of Florida is as well. Kate, I think your group has seen portions of the EIS.

What that means is that it doesn't restrict our ability to object to the final outcome, but it means that we have some specialized expertise that the Army Corps of Engineers may want to tap into in developing the environmental impact statement. We have reviewed two versions of the EIS and we aren't having much traction with the Army Corps.

They have made 20 percent of the changes that we have asked, so based on this we are expecting that the public version of the EIS will come in early 2012 and we have informed the Army Corps that we will – if this trend continues that we will exercise our right to refer the matter to the Council on Environmental Quality, which is an executive office under the White House.

They are essentially the NEPA police for the National Environment Policy Act. They write the regulations associated with the National Environmental Policy Act. We have many issues that we are working out on the project. But the main one is this one here, or one of the main ones is that the Army Corps is not including – see, this is where the dredge would essentially stop, and they are not including these areas right here where I am scrolling as impact areas.

We believe that these areas will be heavily impacted by the dredging activities. This is just one example of one of the issues that we are raising with the Army Corps. Next steps; we are working on developing a coral reef restoration inventory. The Army Corps of Engineers has proposed creating boulder piles with spoil material that they dredged from the dredging and placing them in designated areas to create I guess artificial reefs.

We are working on the habitat equivalency analysis. We are working on a coral reef restoration inventory which will essentially present some other options based on the needs of the ecosystem that would be better compensatory mitigation options. Part of our role is making sure that the full costs of the project are incorporated in the environmental impact statement.

Whatever the final impacts are, the true costs of doing the compensatory mitigation to fully offset those lost ecological services is included within all of the appropriate budgeting, exercises and cost benefit analysis. We are looking at different ways to do mitigation. One may include a coral nursery approach.

The next step is the draft public version of the EIS. We are expecting to see it in early 2012. The schedule has been very dynamic and always seems to be changing, but we will certainly keep the Coral Advisory Panel advised on next steps and any opportunities to provide comments. And that is it.

MR. BLAIR: Sobering is I guess the way to summarize some of that. Comments?

DR. GILLIAM: I'd have other words as well.

DR. BROOKE: When I worked for the state, this was going on in 2006, and I think one of the reasons it got derailed was because the mitigation was just too expensive. Do you see this being derailed again or is it going to go through this time? Do you have a sense of whether this process is moving or whether it is going to stay static permanently?

MS. KARAZSIA: I don't know. There has been a lot of interesting articles in the media. I don't know how good of a reference that is, but they have interviewed some poor economists that have said there really is no value in trying to develop Peninsula Florida as the shipping destination for the world.

Just because we are located at the tip of a peninsula, to have two major seaports located 24 miles apart just doesn't make economic sense. We don't have the associated rail, highway, other infrastructure to get those goods and services that are brought into other areas. They are definitely – they have had some poor economists question the need to do both projects.

It looks like Port of Miami is on a trajectory towards construction; so if it had to be one or the other, that one has less direct impacts to coral reef habitats, but we will have to see. I think what Congress wants will ultimately be what they authorize under the Water Resources Development Act will ultimately dictate where this is going. There is a lot of conflicting local politics regarding the matter as well.

MR. BLAIR: There is for the Port of Miami. They are planned to actually have a lease of a contract in January of 2012 with the construction to begin in the summer or fall of 2012 to be completed by 2014. If I remember, '14 is when Panamax is opening and that is when they need to be ready.

They have gone through the planning and everything else relative to these areas and specifically to Florida. The present governance in Florida is very favorable for continuation of these jobs or projects and they bring jobs type of format. As a matter of fact, the governor fronted the expense for the Port of Miami construction from state funds when the Corps said that they were not able to come forward with it. Some of this, as Jocelyn said, the state and federal congressional status and appearance on these projects will probably be a large determinant as how much gets done.

DR. GILLIAM: I think, Jocelyn, you had a recommendation that you wanted the panel to consider.

MS. KARAZSIA: Well, I think it was more related to when the environmental impact statement is released. There have been on occasion instances where the Coral AP helps draft a letter to be sent on behalf of the council related to these projects, so I think this would be a good candidate. There is likely an upcoming opportunity for the council to chime in, so it is something that I think we should be mindful of.

MR. BLAIR: I think that is something that we can have down as a bullet point for ourselves to be aware of it. I am sure the council will assist us in making those things aware to us. I actually kind of knocked out a quick little thing that I will again defer to the council as far as if this oversteps our authority or ability; to recommend that the council coordinate with BOEMRE to affect requests for usage or lease areas within CHAPCs to have sufficient and appropriate habitat mapping characterization monitoring and assessment and installation and removal plan; to just bring that forward that it is the council's opinion that these are necessary things especially within any of the HAPCs.

MS. KARAZSIA: Yes, and I know for the past couple years Roger has been looking into revising the Energy Policy Statement, so that would certainly be something that would be good to add as a revision to the council's Energy Policy Statement. If the schedule for that has fallen off the priorities list, maybe something separate would be helpful.

Department of Energy is doing a study. Are you involved in that one, Sandra? Department of Energy has funded a siting study. They are doing some data mining and some mapping work to identify sites on the outer continental shelf that are suitable for alternative energy development. I guess we might talk about that tomorrow during the task force, because a presentation was delivered on that at the task force meeting last week, so we can get into that more tomorrow.

Hopefully this will help encourage developers to want to build in areas where there aren't user of natural resource conflicts.

(Whereupon, an off-the-record discussion was held.)

MR. BLAIR: I think a brief discussion or discussion afterward as to whether there are either appropriate actions or recommendations that might be forthcoming based on that.

MS. MARTIN: Okay, thank you, Steve. I do know the Coral AP has been involved in the development of the invasive species policies. This is something the council finalized during September of last year after thoughtful deliberation with how to deal with, in laymen's terms, the orange cup coral, so that was a consideration in CE-BA, the second ecosystem amendment, whether or not that was something the council was going to exclude from the Coral Fishery Management Plan for the allowance of harvest, and also with snapper grouper management discussions on the invasive lionfish.

With assistance from the Coral AP and also the Habitat AP, Myra primarily developed the policy with assistance from James Morris, who is with the National Ocean Service and has conducted a lot of research on invasive lionfish, and also Ron Lukens, and they both sit on the South Atlantic and Gulf Regional Aquatic Nuisance Panel.

The policies were developed and actually finalized. I am not aware if you have seen the final versions. The policy was split into two, one addressing invasive marine species and the other addressing invasive estuarine species, but they both identify possible threats and provide guiding principles.

I wanted basically to provide a brief overview for the marine policies specifically and why the council with regards to the orange cup coral decided to not exclude this from the coral fishery management plan. As you know, it is the state of Florida's approach to not prohibit harvest of this species under their Marine Life Fishery Rule.

This is because it presents problems for law enforcement, who would have to be trained in identification of this species, and also with how to differentiate the orange cup coral with other stony corals. As such, the council chose to refrain from going against the state of Florida's rationale there. That was one consideration they had.

Also, Dr. Tonya Shearer, she is with Georgia Tech, she came to the June council meeting last year in Orlando when they were again discussing whether or not to exclude the orange cup coral from the coral FMP. She presented some of her research and indication that this may actually serve as an important habitat to juvenile reef fish; evidence where this was found in areas where there was no other habitat, so an attractant more or less for some of the juvenile snapper grouper species.

Also, the council had some discussions about the scenario where harvest would be allowed of this species. There was some concern about this possibly accelerating the distribution of the

orange cup coral if harvesters collected for the marine life trade and at a later time they were subsequently dumped back into the water column. There was that concern as well.

Also, I guess, finally, I would just say that they had the discussion about the overall premise of the Magnuson Act, which is to conserve species because they require conservation and management. The council went down the route of allowing harvest of a species like lionfish or the orange cup coral. I guess lionfish is separate, because it is not included under a fishery management plan, but the orange cup coral is.

They would subsequently have to develop all of the requirements under the Magnuson Act, which are, as you know, acceptable biological catch recommendations, annual catch limits, overfishing levels, and a whole plethora of other things that they have grappled with providing for all the snapper grouper species of late.

I really just kind of wanted to give you an update on that. I know during your last meeting you did make the recommendation that the council consider excluding the orange cup coral from the plan to possibly consider some eradication strategies and plans by other entities, so again just an update there.

If you have any questions about either of the policies, I did include them in your briefing book. Also James Morris with the National Ocean Service, he is coming to our December council meeting to provide the council with an update on his latest and greatest research in the realm of lionfish.

It could also be an appropriate avenue for revisions you may suggest or anything actually the Coral AP wants to recommend, that would be an appropriate time for me to address that with our council. I wasn't planning to go through the policies in detail, but I can certainly do that if you would like.

MR. BLAIR: We will see how much of it comes into play.

DR. FEDDERN: My concern is orange cup coral is inevitably going to get onto natural substrate. My reason is that when the Coast Guard or researchers who have habitats underwater raise the equipment up, clean it off, and either transport it to another area or put it back down, the corals that are scraped off are going to be dumped overboard or get loose overboard and they are going to settle onto natural bottom.

If they are still alive, they are going to then start growing there. I think it is inevitable that they are going to get onto natural bottom sooner or later. I think in that case then it would be a good idea to remove them from the coral plan so we could figure out how to keep them suppressed. Alternatively if that is a good habitat for other fishes, maybe we should be encouraging that, but then, of course, since these corals kill other corals we might end up with an orange reef rather than a natural coral reef. It is a hard question to answer; what do we do?

MR. BLAIR: I think some of that was kind of one of the purposes for just having us to see if there is a review to see if there was any consideration or other information or action or recommendations.

DR. FEDDERN: You can't even figure out how to kill the corals now because they are still in the plan.

MR. BLAIR: Right, and I know if I remember correctly our considerations at the last was whether or not it was appropriate. This is a question also to Anna. I believe our discussions were considering the removal of that species from the management plan; and if we do that, would that not forego the need for the various catch limit and sustainable yield calculations and so forth.

MS. MARTIN: Right, so ultimately it would have to be removed from the plan in order to be excluded.

MR. BLAIR: Explicitly excluded from the fishery.

MS. MARTIN: Right, correct.

MR. BLAIR: Some of this really comes up to the policy itself provides different additional potential actions for invasive species in a general sense and not just the orange cup coral but for all the nasty little species like lionfish, including removal of invasive species as a compensatory mitigation measure and other aspects that would be actively seeking to remove that species from the area.

As it was discussed and kind of brought forth, I just wanted to bring it up to the panel to see if there are any additional considerations at this time or if any recommendations that the panel wishes to make regarding the status of this species. Although I was not necessarily – I don't think of marine species having a huge pool of invasive species.

The plan points out and refers to 72 invasive marine species in the council's realm, which is pretty significant. Now, that is inclusive of all fish and invertebrates and so forth. This really is just open for discussion as to whether there is any thought as to action at this time to consider an activity that would allow for take and removal; or as has been promoted as well, there is also a sense that at this point in time especially – by that meaning some of the levels of hard corals that exist, that any coral is good coral; however, preemption of it would definitely serve to possibly minimize any other recoveries that may occur in a natural sense.

DR. FEDDERN: I think since we don't know what invasive species are going to occur next year, it might be a good idea to have a blanket amendment to all of the fishery plans that invasive species are not included in the fishery plans, so then there can be quick action to combat them.

MR. BLAIR: The inclusion of this is almost happenstance, but most of the other fisheries plans are explicit about the species that are covered; whereas, the coral management plan is all stony corals without designation as to native or otherwise, so it is kind of a happenstance. The others

by the natures of their plans have already done – they are protecting the native species, the natural species, where this one inadvertently includes potential exotics.

DR. GILLIAM: Right now, currently the management plan for stony corals is simply you can't take stony corals, right, but is there anything that would be species-specific in the sense that a tubastrea is still included in the measurement plan, but that plan is not no take but involves some type of actually management of the take?

I am just concerned about that with just removal of these species from management plans, that we are opening ourselves up to some negative impacts associated with that. I think right now we are fairly – there is absolutely nothing positive about invasives, but we are fortunate that the two invasives that we are discussing today are both fairly easy to identify and are fairly distinct from our native species, but I don't think that is going to be – I think that is fortunate now, but I don't think it is going to be the rule in the future. I think we have to be careful about just defining something as invasive and then immediately removing them from any management plan.

MR. BLAIR: I again go with guidance from the council, but I would imagine that it would be a potential alternative to have that we use this in a managed sense, but we would then have to define what the allowable catch limits, the maximum sustainable yield, and the various other fisheries measures that are necessary for it. Some of those can be extremely high if our purpose really is an attempt to eradication. But there is a lot of effort, a lot of work and so forth to that end as well. I believe it is an option and we can kind of flesh that out to see if that is something that is a viable path.

MS. MARTIN: I think if the Coral AP wants to make a recommendation as such, that would be the avenue to pursue here. With the development of these policies, it is kind of like a guiding document for the council right now. They haven't really grappled in too much detail with invasive species as far as removing them, dealing with future management mechanisms. Any recommendations the Coral AP wants to provide in that capacity would be a good idea.

DR. BROOKE: This is a tricky one. If I recall, the reasons to keep it in the FMP, law enforcement was one of them. Well, this is a fairly distinctive species. I think law enforcement could be – they are not stupid, there is nothing really like it, I don't think, cladophora possibly. I think it is fairly distinctive. Law enforcement could identify it.

Right now tubastrea is only on artificial reef substrates and we don't really know why. I understand people harvesting it and then dumping it or cleaning it off, as Henry said, but then would it settle on natural substrate? Why isn't it settling on natural substrate now when it has larvae in the water column? That is a huge unknown. What is this animal doing?

The other thing what was the other problem – oh, the snapper grouper juvenile habitat. I don't know, I wouldn't say that that is a good reason not to try and get rid of an invasive species. We don't know what its impact is going to be on the habitat. I don't see that having it as a potential juvenile habitat from one researcher really justifies maintaining and managing an invasive species.

My personal inclination would be to kick it out, but I can't really explain why. I can see reasons for keeping it in, too. Also, wasting time and resources managing an invasive species seems rather counterintuitive, too. On the whole, I would say kick it out, but that is my two cents.

MS. MARTIN: I think another issue here is there doesn't seem to be a whole lot of information on this species that has been provided to the council. We have Tonya Shearer. She has provided a presentation when they were discussing this issue, and it seemed preliminary as such so no major decisions about the orange cup coral were made. If identification isn't so much of an issue, perhaps that can be readdressed. Again, if the Coral AP wants to go down that route of recommending removal again, that is something that could be reopened.

MR. BLAIR: I think we may want to try to be a little bit even more ahead of the game. We are fortunate, as Dave said, that this one is able to be distinguished easily; but if we were to get some acroporid into the mix, it may be a much less simple or more difficult is a better way to say it, I guess.

My thought would be that the idea because it is so distinctive at this point in time, as is the lionfish, is not necessarily the best aspect. I think more along the lines of what we think the potential impact of the resources would be associated with physical removal of it just in a incidental needs by whatever aspect of it. Is that something that is going to be impactive?

I agree that there probably is a lack of information for us to really be hard and fast on, and possibly at this time the recommendation may be support investigations into the species to better understand what its constraints are and its potential for impact onto native coral species. I do think we should be moving somewhere along the lines with the whole aspect of it. Again, tubastrea is a convenient starting point but because of the inclusiveness of this management plan, it is something we either are going to deal with species by species as they come up, which may be the best way.

DR. GILLIAM: I guess I have are they two comments or one comment, question, I'm not sure. I guess my one comment would be that I don't think a blanket policy on invasive species is wise because we don't know what is going to happen in the future. I think removal of a known invasive when we get a handle on it from a management plan might be, as Sandra said, a lot of advantages to that.

But I think at this point just a blanket statement stating that an invasive is just automatically removed from the management plan is difficult because of the point you made as well. It is likely that we will have acroporids or other stony coral species that aren't going to be that easily distinguished; and just to say, okay, we know they are here and therefore they are removed from the plan, I think that could be difficult.

My other comment is that, again, maybe not being as familiar as I should be with how this works, but if tubastrea is removed from the management plan, does that mean that it is just open for removal; like I can jump in the water and remove it. My comment to that is it is unlike spearing a lionfish where if theoretically if you are a really good spear fisherman, the only thing

you are impacting is that lionfish. These things grow on the benthic substrate and they generally grow in dense clusters where it is mostly tubastrea in these clusters.

Right now we are fortunate that they are growing mostly in artificial substrates, which maybe we are not as much concerned about, but I think it is likely to assume that at some point they are going to move towards the natural substrate. Maybe one of the reasons we haven't seen them on natural substrate yet is because most of our time is spent in shallower depths where maybe they are not as prevalent. Removing them or having an open season for them is going to have some impact on the substrate that they are growing on. I am just throwing out some points of caution.

MR. SHEPARD: This is just my personal opinion but having worked on the Aquarius for a while; these things are a pain in the ass. There are some people out there who would really like to be able to remove this like they remove barnacles and other things that encrust and screw things up. It is not a small question.

I think a research program is recommended here. I think the research program might want to be a little bit more spelled out in terms of what kind of competitive situation is there between this coral and other corals. What would be the impacts of removal? I don't know how much we know about the life history of this critter, too. There should be probably some details about what the research program is. Right now I wouldn't make it open season on it, but probably if it was me, I would say get rid of them.

DR. GILLIAM: I am all for getting rid of them. I am just expressing that we owe it as a panel to make sure that we don't just throw our hands up and say, oh, just go for it, you know, think about some of these details.

DR. BROOKE: Yes, I hadn't thought of that aspect of the collateral damage, and you can't write all these provisions into a plan. It is either managed or not. But since they are, as far as we know, in the scuba diving depths, they are on artificial substrates, you might get some damage on artificial substrates, but it is not natural habitat.

If we let them go and essentially protect them, they might end up on artificial substrates sooner. On the other hand, if we start tearing them off of the substrates we might spread them. As far as the reproductive life history is concerned, most cup corals are brooders and they have crawl away planulae. I talked to Tonya years ago about doing that and she said she was going to do it. Did she ever do the reproduction; do you know?

MS. MARTIN: Not that I am aware of.

DR. BROOKE: Well, I can cut the gnads if somebody can get me some samples; I mean, the reproductive biology.

MR. BLAIR: Again, I think that we are kind of running a little bit over and I don't want to extend too much, but I would like to at least maybe revisit this tomorrow. It sounds like there might be a couple possibilities; one being a recommendation that the council look to support

research and investigations on – and we can refine some of the specifics, but its potential as a threat to the coral ecosystem is one, as well as some of the economic impacts of its presence.

If it is a fouling organism, to give us a better understanding and direction – I mean, if we are looking at something that turns out to be relatively benign in its presence, then that may help us better understand if we need to do it. I have to admit my personal sense is invasive exotic is just that and it usually is impactive to the natural system and may result in – as we are looking for the lionfish, and sooner or later, with all honesty, and I will defer with David and Ken, the lionfish have really become prominent in our region in the last two years, maybe three. The degree in which it went bam is amazing. To have to wait to see that occur is something that we are hoping not to have happen. But we agreed, we need to do this in the most appropriate and science-based process that we can.

DR. FEDDERN: We also need to do it very quickly just as in the case with the lionfish, the explosion occurred in just within a few years.

MR. McFALL: I know the lionfish issue is not really our decision, but it would be nice if the council would consider just putting out a blanket statement that lionfish are unregulated and there are no bag limits for it. There is a lot of confusion out there amongst divers who are really the only people who can collect these things.

They keep thinking that there are bag limits and if they come back with more than 20 they are going to get busted and wind up in jail. It would be nice if the council could just consider making some kid of official statement about that, it would be great, because I think we could help clean up a lot of them that aren't getting taken now.

MR. BLAIR: At the present time the only bag limit is the size of the bag.

MS. MARTIN: I can understand the confusion; there are certainly bag limits on everything else. I can follow up with Ken and folks in our office and address that, certainly.

MR. BLAIR: So with that, if you don't mind I will add this as kind of a followup in our recommendations tomorrow just to see if there is anything that we can feel comfortable with sending forth as a recommendation. I would suggest we try to come up with something to provide some direction and traction to the issue; and if that is we need more information and we need to find out what that information is, that is fine, we can provide that recommendation to the council.

DR. FEDDERN: One more thing; years back before I was even aware of the situation, I was diving in Curasol and I saw an orange coral – it probably was the orange cup coral – growing all over the rocks close inshore.

MR. BLAIR: It is like most invasive species they are somewhat of a time bomb. With that, if there are no more comments, I would like to adjourn for the day and we will meet again tomorrow morning at 8:30. Thank you.

The Coral Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Hilton Garden Inn, North Charleston, South Carolina, Wednesday morning, October 26, 2011, and was called to order at 8:30 o'clock a.m. by Chairman Steve Blair.

MR. BLAIR: We do have a little bit of a change in the agenda in that Sandra will be speaking first on the Optimization of Law Enforcement in Remote MPAs, and after that we will go into the Spiny Lobster Amendment 11 and continue on. We will also as time allows – unfortunately John Reed's review of Oculina Research, John is not going to be able to be with us, so that will be stricken.

Additionally we will also have a period of time that will be a quick review of the recommendations that we have that we can do any final changes and wordsmithing and so forth we feel necessary for that. We should be able to be out of here by noon. It will be the case because most people have to leave at noon, anyway. With that, I think we can start off with Sandra.

DR. BROOKE: Surveillance and enforcement seems to be a bit of a departure from deepwater corals and biology, and my interest in this actually started a number of years ago when I studied my PhD on the Oculina Banks, and I saw firsthand the consequences of the lack of enforcement in a protected area.

This talk is going to be sort of a very brief, hopefully, overview of this project, because it is kind of a complicated subject and a bit of a rat's nest, to be honest. Fast forward about a decade, I joined Marine Conservation Institute in Washington State. We started a project of surveillance and enforcement of remote maritime areas, which, of course, we need an acronym for and it became SERMA. It wasn't my idea, but there we go, SERMA.

This was kind of spawned from the recognition that marine protected areas were becoming more numerous and larger, and we are even talking about protected areas on the high seas. Of course, one cannot just draw a line in the ocean and declare it protected and expect it to be so. Then the enforcement issue came up, the 800 pound gorilla in the room.

Most of the time when these areas are created there is no increase in enforcement capacity or funding. Like what happened out in the Pacific remote islands, some guy in a Boston whaler now has 35,000 square miles to protect, and so it is just not going to work. One of the things that we set at addressing for protection of these large areas was surveillance technologies, of which there are many and they are usually very expensive.

Anyway, our first step towards this project was to hold a workshop – and, of course, you have to have a workshop – in D.C. with an international group of law enforcement experts. We talked about surveillance techniques and then the conversation expanded. It became apparent that surveillance and enforcement was much more than a few toys in the sky.

It is very complicated and very difficult. We produced this technical document on surveillance technologies, which has been around since 2010 and has been updated recently. This kind of led

to the South Atlantic Project. When the CRCP had their proposals come through in 2010, their RFPs came through in 2010.

At that time the South Atlantic Council had just implemented the CHAPCs, which cover 23,000 square miles in federal waters, and these MPAs and they were considering at that time a regular unpopular snapper closure along the east coast. There were a lot of spatial areas and a lot of additional areas that required protection with no increase in enforcement capacity.

And, of course, they have other protected areas in the region like the HAPC and the two National Marine Sanctuaries. This project was spawned from that need. They recognized this need for an assessment of what their enforcement capacity was and then maybe ways of making it more efficient or improving it.

The Objectives Review Surveillance Technologies – obviously you know there is no considerable amount of funding to start doing really fancy stuff, but there are some technologies that might be appropriate – reviewed the current enforcement capacity, which I am not really going to talk about today. Then we had our workshop, of course, regional managers, state and federal LE, and outreach personnel.

Then the final product will be a report with some suggestions on how to improve – not necessarily increase but improve the efficiency of capacity. Then there is a training document deliverable also. There are a whole plethora of surveillance technologies out there; and if I was to talk about all of them we would be here until breakfast tomorrow.

I am just going to briefly go over the types of technologies and then talk about a couple of them that might be appropriate for this area. Cooperative versus non-cooperative, this is basically cooperative vessels, whether they want to be cooperative or not have been forced to be so by a fisheries mandate, and these include technologies like VMS where the fishing vessels have to have the monitoring and surveillance technologies on their vessel.

Non-cooperative are those other people who don't want to be watched and don't necessarily know they are being watched. This is a much more challenging surveillance issue. Classified versus civilian, of course, the military has lots of toys that we don't have access to their data, lots of different platforms, continuous versus period – I'm not going to really talk about these. Manned versus unmanned, we are going more towards unmanned surveillance technologies.

VMS is being used in the South Atlantic, and it is probably one of the most common and well-accepted surveillance technologies used for fisheries. It is a device on the vessel, sends a signal to a satellite and goes to a ground station. Very basically, it shows location and speed, but they are getting more and more fancy now.

The VMS for the South Atlantic Region – in fact, the entire east coast and Gulf of Mexico is run out of St. Pete, and it has got a couple of provisions on it that allow and require the fishermen to report where they are going to dock, where they have been, what they have been doing, what their catch is. It is becoming a lot more sophisticated now. At the moment I think VMS is only used in the South Atlantic Region for rock shrimp, is that right?

Now AIS is a shipboard VHS broadcasting system that was originally used for marine domain awareness or navigation safety. It is designed for vessel tracking but it has other channels that can have other data streams such as when the winch is being deployed and so forth. It has a limited range; it is line of sight just like radar, unless it is deployed on towers or buoys.

This is potentially a very useful technology. Now AIS is required by SOLAS, by the IMO through Safety of Life at Sea. So again navigation has a sort of safety issue. Now it is not required on vessels less than 300 gross ton internationally. In the U.S. it is only required on vessels greater than 19 meters to enter a U.S. Port, but fishing vessels are exempt.

Fishing vessels at the moment are exempt from this technology. Now there is a chance of expanding AIS. In 2008 the Coast Guard proposed a rule that includes fishing vessel requirement in AIS, so that means that any vessel greater than 19 meters is required to carry it. That will allow the Coast Guard to track the activity of any vessel over 19 meters.

That is still pretty big but it includes a lot of the commercial fishing boats. Like I said, AIS channels can be used to transmit other information about what the boat is doing, and it can also be used to provide information to the vessel about MPA boundaries or navigational hazards or anything of that nature.

Again, if they deploy them from a tower or platform you can increase the range. Then space-based AIS is not something I am going to talk about too much. It is a satellite-based technology that has advantages and disadvantage, but it is way too expensive at this point. That would require – AIS and VMS both require the vessels to carry a transmitter, so they are classified as cooperative technologies. I think they are both applicable to the South Atlantic Region once AIS gets through that Coast Guard legislation.

Non-cooperative surveillance, this is the trickier one. You have got various platforms, satellites, aircraft, vessels, land or buoy-based platforms; and then imaging systems, radar systems and acoustics, and these have been used at various levels for different technologies. You basically model or create you surveillance system based on your requirements and your funding streams.

Satellite based, well, I included this because it is out there, but again it has some issues. It is not real time. It is large scale and high resolution, or it can be depending on what kind of sensor you use, but it is not real time. It is expensive and some of the systems are subject to cloud cover and so forth, so they are not perfect.

This one, synthetic aperture radar, is probably the most effective for monitoring fishing activity. Since it is radar. it can be used at night and through cloud cover, but again expensive and only the Canadians and the Europeans have these satellites right now, and they charge a lot of money. Okay, manned aircraft, this is very traditional.

The Coast Guard does overflights, state LE does overflights at various frequencies with various aircraft and they have different sensors, radar, visual, infrared cameras. Now this is fine for coastal situations; but when you have offshore MPAs that are far away, you spend a lot of time in the air and not very much time on station. They have a limited capacity. People have to get

back; you can't leave people up there for three or four days, and they run out of fuel. They are expensive to purchase and operate. The Coast Guard has some of the bigger ones.

Canada and the UK do it a little bit differently. They use a commercial contractor so they don't have to maintain the aircraft, but it is a standard part of a surveillance package but it is not cheap. I think this where we are going to go in the future is UAVs. There are some of them out there. Of course, the military have most of them, the high-level drones.

The Coast Guard has some of them. There is actually one that is operating off the coast of Florida. It belongs to the Coast Guard and its main mission is Marine Domain Awareness, which is basically drug trafficking and human trafficking, but it is being used. They do overflights of the Oculina HAPC and so they get data about vessel activity in there.

My understanding is – and I haven't spoken to the Coast Guard for a while—is that this is kind of an experimental thing. There is an issue with unmanned aircraft in FAA space. They don't like unmanned vehicles buzzing around out there and they are very squirrelly about it. This is kind of an experimental system.

Now the advantage of UAVs is that they can fly extended missions, some of them longer than 48 hours. There is one being tested in Belgium right now that flies at 60,000 feet. It is powered by solar and it has a sensor on it that can visualize to 30 centimeter resolution, which is absurd, but, of course, it is way out of our price range and it is still experimental.

I think this is where aircraft surveillance is going to go in the future, I think. There are lots of advantages to it if we can get FAA to stop being so nervous about it. Of course, there are other platforms. I like these things; they are kind of funky. There was one done as helikites and aerostats; they are basically little blimps or big blimps.

There was one down in the Keys operating for a while called Fat Albert and the Coast Guard noticed that whenever Fat Albert was flying the criminal activity dropped because people didn't really know what it was looking at. You could put this thing up there just like the empty police cars on the highway.

You could put this thing up there and it would act as a deterrent without even having a sensor on it. Of course, people get wise to that after a while, but Fat Albert had a camera, and I forget why it was – I think it ran out of funding or it broke and they didn't fix it or something, but this is something that is very visible and it allows things like radar and other sensors that align a sight to be elevated to increase that range.

I think this is a relatively inexpensive form of surveillance technology that would be fairly easy to implement. It would be mobile in some cases. You can deploy them off the back of Coast Guard cutters to have a look around beyond radar sight. I think this is potentially useful in some places.

Now they are susceptible to weather. The hurricanes around Florida, they wouldn't fare too well around. You would have to bring them up and down, but again potentially useful. Then surface

buoys, I mentioned this a couple of times already. They extend the range of radar AIS and any other technology's is line of sight.

The next step was the Surveillance and Enforcement Workshop, which was in Orlando in July this year. We had 28 participants from all of these different alphabet soup agencies; the council, Gray's Reef, Florida Keys, sanctuaries, and then all the state law enforcement and NOAA OLE and the Coast Guard. We started off with a series of presentations – I am not going to read these; you can see them – that covered sort of the baseline information for various different aspects of management challenges in different regions, enforcement challenges.

Then I gave a blurb about the different enforcement technologies, which was a bit more expanded than this. We had those and then we had these breakout sessions that addressed challenges in these three different areas; surveillance and enforcement operations, interagency collaboration, and compliance and outreach.

Interestingly enough, I was expecting this one to be the big one with a lot of complaints about lack of assets and funding and so forth, and that was there, but compliance and outreach really had the most comments and was perceived as being the area that we could really improve enforcement efficiency in, and that is a whole lot cheaper than buying a drone.

The outcomes – I am sorry, there are not many pictures and lots of words on this one. Insufficient assets, well, of course, this was a given, we know this. The natural resource enforcement is underfunded pretty much everywhere. More officers, increased patrol time, interceptions, public interactions, public perception of enforcement capacity and so forth, so we need more assets.

Given that in this economy we are not going to get those assets, then there was a recognized need for increased remote surveillance technologies, which kind of started this whole project off in the first place to target limited enforcement assets. What surveillance will give you is not data to prosecute, because you can't prosecute on surveillance data alone.

You have to have a response, you have to have somebody there checking the boat, especially with complex regulations and Type 2 MPAs, so you need the enforcement response. But what surveillance does is allows you to focus those limited assets into areas where you know there is already suspicious activity, so that is what that does for you.

JEA, I don't know, I am sure you guys will know about this, but the JEA is the Joint Enforcement Agreement between federal and state law enforcement, federal and state management. What that does is it allows state – this funding comes through the federal stream to fund state law enforcement officers to enforce federal fisheries violations or regulations, enforces the regulations.

Now the state law enforcement officers cannot do anything more than make the case and hand it off to NOAA OLE. But since NOAA OLE, Office of Law Enforcement has only – I think there is only two for this region, I might be wrong, but they are very, very, very low numbers of on-the-water federal officers.

This is a critical element to enforcing federal fisheries regulations is these state guys. There is a JEA program in place at the moment for Florida, Georgia, and South Carolina; not North Carolina, but they are working on it. There are issues with the JEA program that sort of became apparent during the workshop and prior to that, but it is a very important part of this program and can be improved.

One of the other problems, the prosecution of cases is a major bottleneck. The state guys can make the cases, they hand the case packets off to NOAA OLE, the officer in the field has discretion to decide whether it is going to go up to prosecution or whether they are going to drop it. There are three general counsels for this region, and that is high.

Until fairly recently the entire Pacific Rim including Hawaii down to all the U.S. holdings down to South America had one General Counsel. The reason that this is this way is that most of those violations or regulations are under Magnuson, and Magnuson is just a civil entity. There are no criminal regulations under Magnuson.

Every violation has to be prosecuted by a civil general counsel and there are not many of them, so it is this massive bottleneck that creates all sorts of problems because the cases don't get taken unless they are big cases. Most of the cases that are made are dropped either at the officer level or at general counsel level.

There is a provision in the general counsel that will allow – it is basically a ticket, the equivalent of a ticket, a summary settlement, so not all of these things have to go through the courts. Not all of these cases have to go through the courts, but there is a problem with summary settlements right now because of an issue that came up in New England where the fishermen protested that they were being fined too much.

Too be honest, some of those summary settlements are ridiculously high. A federal manatee ticket will cost you five hundred bucks. A state manatee ticket is $50 to $75. People object to them, there is no follow through and they get dropped, which doesn't improve officer morale and it creates problems of deterrence and compliance, so that is a massive problem.

As I said, this is sort of caused by the lack of criminal provisions in Magnuson-Stevens. There was a suggestion that there would be a push to try and criminalize Magnuson, and NOAA is resisting this because they don't want – it is the Department of Commerce, they don't want fishermen to be criminals; fair enough, but the states already do it, and there are other sort of smaller crimes, if you will, that are prosecuted under criminal judges and it wouldn't really cause a huge problem; it is just that they don't really want to do it.

That would be one solution. There are a lot more criminal judges than there are civil. Another outcome, VMS is the best surveillance technology that we have at the moment. The system is already in place, it is a very sophisticated system. The St. Pete office has the capacity to monitor more vessels than they have with VMS at the moment.

I know there is a recommendation that VMS be used or mandated on the commercial snapper grouper vessels in the South Atlantic Region. Actually the fishermen are not averse to that. This

could be something that would be a relatively straightforward process, I would imagine. The reason that probably the fishermen are not averse to it is that right now there is about $6 million in the federal coffers that will allow reimbursement to the fishermen of the VMS unit in a mandated fishery. That money is not going to last forever.

The fishermen, they are not stupid. They see the writing on the wall and they probably realize that eventually it is going to be mandated, and it would be better for them to have to do it now where they can get reimbursed rather than have to pay for it later. Those units cost about $3,000, I think.

Okay, outcomes from Interagency Collaboration Breakout Session. This interagency collaboration wasn't just between law enforcement agencies; it was between management and LE as well, including sanctuaries. Management agencies should consult law enforcement during the development of regulations. A lot of the time – now the South Atlantic Council has been a lot more engaged with law enforcement than a lot of the other councils has.

This was not necessarily a criticism; it is just recognition that if law enforcement is involved in the regulations earlier on, then the regulations are more enforceable. There are some regulations that are just very difficult or impossible to enforce. This was something that was just kind of brought up as a recommendation that they should continue to consult LE during the development of regulations. JEA is critical to enforce federal fisheries.

Training and interaction between the agencies; NOAA OLE, as I say, they are extremely not underfunded necessarily, but they have very few people in the field, very, very few. Interaction between them and the state guys is not the best in many cases. If the state guys are not trained, then they don't go and do JEA. There are various ways that they get around that, which is not in the spirit of the agreement.

Federal regulations are extremely complex; they change frequently. The case packages or the paperwork is about an inch thick, and then the cases get dropped, so there is really no incentive for the state guys to go and make these cases, except that they are funded to do it. Training needs to be improved, interaction needs to be improved, and this is something that doesn't necessarily cost anymore money; it is just an agency interaction issue.

Too few NOAA OLE officers, I have already said this, leads to lack of state LE commitments to JEA. Training; again, the interactions between the agencies, there are MOUs, memorandums of understanding, in place to foster collaboration but it comes down to interpersonal relationships, and we have seen this time and time again that it is about the personal relationships in the field.

Rather than force these guys through mandates to say you have to do this, you have to do that, what they thought was a good idea was to share training sessions and informal interaction sessions to foster these relationships. One of the problems with these relationships is that the Coast Guard cycles every couple of years, so all those relationships that are made are then broken as new personnel comes in, so this has to be an ongoing process.

Quite often, especially with state law enforcement they get this federal training during the training program and then it is just not backed up and they go their own way, and the state guys have plenty to do without federal work. There is no feedback on the federal cases; this was brought up as an issue. They make these cases and then they disappear into a black hole and there is no feedback.

Multi-agency collaborations, details, where they get together and do a detail on some fisheries issue; sometimes this happens at fishing tournaments but again not very frequently outside of that. And again, Coast Guard has high turnover, but they also have multiple responsibilities especially in South Florida with the immigration and drug trafficking problems.

Compliance and outreach; compliance, I asked about compliance and there is just really no reliable measure of compliance. The Coast Guard does sort of collect data on this but what the state guys do is as they go by a vessel and they hail them and say, "Caught any fish today," and they go, "No, we're good, so they count that as a contact with no violation."

Obviously, they haven't checked the boat, so it is an unreliable statistic. There is no real consistent metric for compliance, which I think could be changed relatively easily. One of the big problems that came up consistently was that the dissemination of information to the public could be improved.

There is no readily accessible location for all these protected areas; a lot of protected areas and spatial closures in the South Atlantic Council Region. They are not all in one place. For instance, the Sanctuary websites have the boundaries for the Sanctuary. The Keys is kind of hidden, you have to dig them out, and they are not great.

You can get the boundaries, but the regulations inside those boundaries are federal fisheries regulations. There is no link to the South Atlantic Council Website on those websites. These are simple things that maybe could be improved so that the public doesn't have to fight to get those regulations.

Kim Iverson said – she is the council's outreach as you know – she said that one of the most frequent questions that she gets are questions about regulations. Now the council website is great. You go onto the website, the regulations are there, the spatial closures for the Oculina is there, and the new MPAs are there.

One thing that is not there but it is kind of buried are the CHAPC regulations. The others are up front, readily accessible. The CHAPC you kind of have to dig around a little bit. Unless you know where to look, it is difficult to find. That is something I think could be changed relatively easily.

Now, as far as who is going to manage and create this conceptual website that was updated frequently, easy to use, and publicly accessible, that wasn't clear. Everybody recognized that it should be done, but it wasn't clear who was actually going to do it. Again, public outreach on existing regulations, why they are there, how they work, what they are intended for – what the

Gulf Council is using, which is kind of innovative but sort of obvious, using social media to disseminate this information.

They have an application that you can download to cell phones that shows where the regulations are and where the closures are; so this is something that Kim is looking into for the South Atlantic Region. The protected area boundaries are not necessarily easy to chart. For enforcement purposes, the enforcement prefers square borders; because if you have a wobbly border or a diagonal line, it requires interpolation by law enforcement and by the users, which can lead to confusion. The coordinates should obviously be readily available.

Then there is the shaming – I forget how George Geiger put it, shame and something or other, anyway; so publicize case outcomes. Like I said, quite often law enforcement doesn't know what happens to their cases. The offenders are not publicly shamed at least in the case of federal fisheries until long, long after the case is made because it has to go through the process.

It increases compliance, it raises law enforcement morale, and it might shame the bad guy. That is the philosophy anyway and I don't know if that works. Again, there are lots of recommendations. These are just a few of the bigger ones. Criminalize Magnuson; this is not a simple thing to do; increase the number of general counsel by a lot, which is also not easy to do because it requires funding.

Implement VMS in the snapper grouper fishery; create a centralized data base or access point for regulation information, which is kept updated, is user friendly and has all the information in one place. Then something I would like to talk about in a little more detail or bring up, boundaries of the CHAPC.

Now, something that came up during the workshop was that for the new CHAPC there are too many waypoints. There are more than 200 waypoints. Law enforcement would like less than 20. I didn't realize there were this many waypoints for the CHAPC, and most of those are along the western boundary.

Now, during the Coral AP discussion of where those boundaries should be, we recommended that the 400 meter bathymetry line should be used because that is where most of the corals are. We thought this would be a fairly straightforward metric not knowing anything about what LE wants, law enforcement wants.

So we walked away from that thinking, okay, the boundary is good. When this came up – see, see there is the boundary – most of the problems actually are up here where you see this wobbly bit here, and the 400 meter bathymetry line actually we thought was a lot smoother than this, and then down here it curves in to about 300 meters, which makes sense because the corals are shallower there.

That looks nice and clean, but then when you download the waypoints it gets a little squiggly. These are the waypoints that the fishermen have to use and that law enforcement has to use to enforce. Now these are really close together. All of these are piled up on top of each other and this wiggles in a bit and that wiggles out a bit. These are in no way square.

Now just to point out, the problem with this is that you have a vessel – this is a square boundary – you have a vessel here; they are obviously at the wrong longitude. You have a vessel there; they are obviously at the wrong longitude and latitude. This is easy, longitude/latitude; they are on the wrong side of it.

What if you have a vessel there, then what do you do with it? These are all clustered together so that is not maybe so difficult, but if you go down you see you have got a cluster here, you have got a big gap there, and then as you go further down, these are just the waypoints plotted from the list of coordinates on the website. So gap there, cluster there, and then you get down here and it gets a little hairy.

Now, these are the golden crab fishing zones. These are the waypoints the guys have to use. This right here; that is a waypoint there and there isn't another waypoint until way down here, so what if you have got a boat there? Somebody has got to figure out which side of that interpolation line they are on. Now that one is fairly straight, but what if you have got a diagonal line, what about this one?

How are you going to prove that the fisherman knew he was on the wrong side of that line? It is not simple, a big gap here, a cluster here. I think this is a little bit of a mess, and I think that we could collectively clean it up a bit. Now if you joint those waypoints up; these are the golden crab allowable fishing zones.

That one is okay, but again the waypoints area a bit out in left field, and this one is very funny looking. Now I spoke to Anna and she said the golden crab guys are okay with this, but law enforcement I think would find it a little easier if those lines were a bit straighter. But certainly this western boundary is a bit hazardous at this point.

DR. ROSS: Even that aside though, we are not clear – I mean, aside from that Miami Terrace bump inshore, it is not clear that it is following any 400 meter contour that we know about.

DR. BROOKE: No, it is not the 400; it came in closer because the corals are shallower there.

DR. ROSS: Not there, but I mean north of there, all the way north of that squiggly thing, it either goes offshore or inshore or does that wiggly thing at the north –

DR. BROOKE: Of the bathymetry that we know about, yes. Apparently Roger used some interpolated bathymetry. Regardless of what he used, we thought 400 meters would be reasonable, but these dots are not reasonable. Well, let me get to my recommendations. These current boundaries I think are confusing and complicated both for law enforcement and for the stakeholders.

Now at the moment there is not a lot of activity going on in there, and so maybe it is not a pressing issue right now. But since we are looking at boundary changes or revisions, what I would recommend is that the Coral AP or maybe just a subset of the Coral AP or the council works with law enforcement on drafting simpler boundaries that are easier to enforce, but not sacrificing the coral protection that are less confusing to stakeholders.

That would be my recommendation specifically for the council out of this. I think we can do a better job of that western boundary and of those boundaries. I think that is all I have; so if anybody has got any questions I would be happy to take them.

DR. VAN DOLAH: The Coast Guard regulations for the AIS, you said it was initiated in 2008 and it is now going into 2012; what is the status and why is this process so slow?

DR. BROOKE: The wheels of federal government grind slow, I guess; that is the only thing that I can say. Right now that legislation is tagged onto another – I think it is a transport bill that is going through Congress.

They tried to get it passed a couple of years ago and for some reason it failed. I don't recall why, but it is close. It just has to go through Congress, and we know what that means right now, so they are hoping next year it will come through.

DR. VAN DOLAH: And the second question is the snapper grouper fishery evidently, as you said, is willing to implement the VMS. Where is that discussion in the council agenda?

DR. BROOKE: This was something that came up at the workshop. I have to defer to Myra to that. She knows more about it than I do, but I assume she has more information than I, and she is not here.

MR. WAUGH: Myra is not here but I can answer that. The council was willing to go forward with requiring VMS on snapper grouper vessels. The agency at that time wasn't able to handle that number of vessels, so maybe this has changed now; hopefully it has. But also the council, when we first started down the road of our ecosystem plan and management, the council was willing to entertain a discussion and interested in proposing that at some future date any vessel operating in the EEZ be required to have VMS.

The thought process there was if you put out this requirement, then the recreational population of vessels is so large, then it would be started to be put into electronic equipment, the average cost would go down. That was a little large for people's minds to wrap around at that time. You look at national security, all it is going to take is some terrorist act to occur on a vessel, and then we will be requiring some of this. The council is willing to go for it; it is a matter of whether the agency has the resources to handle the monitoring.

DR. BROOKE: And that is the good point, and Pat O'Shaughnessy seemed to think that they do now have the capacity to do that and the presentation he gave, which I can provide to people if you are interested, it was quite impressive. It was a lot more sophisticated than I had thought. Interestingly enough, the Mumbai terrorist act was performed through a fishing vessel.

They killed the crew and brought the bomb into Mumbai. That is the thing; it is not that fishermen are criminals; it is that fishing vessels are not treated with the same security rigor as other vessels are and so it leaves them open to abuse. We are trying to sell this as a national security issue and a food security issue rather than just chasing fishermen around.

DR. BANKS: Similar to that, large ships are required – I guess it is called the AIS system, but large commercial vessels have monitors aboard that Coast Guard can see. We have anchorages. You saw a talk yesterday – I think Jocelyn brought it up – that we created this anchorage and all those ships are monitored by Coast Guard., but the Coast Guard admittedly said they don't have the people to sit around watching.

I mean, it is on a big wall, it is kind of neat, but they don't have people to sit there watching ships to see if they are in the anchorage, so we end up having to call the Coast Guard when we see a ship. But it is something, if you have the system in place you have to also have the resources for somebody to sit there and watch it, and that is overlooked.

The other point, law enforcement has been complaining for years about their ability to identify anything other than a rectangle for enforcement. That boundary you showed is very complicated and should be made clearer, but at the same time chart plotters now, all that can easily be put on a chart plotter that every boat can easily have on board.

It is no longer a good reason not to have more complex and rectangular boundaries for law enforcement. The problem I found in our area is law enforcement doesn't know what technology is available. They don't keep up with it. In addition to cleaning up boundaries, it might be good to educate them a little bit on what they should buy to help enforce that and make it easier for them.

DR. BROOKE: That is true. Going to the AIS issue, that is a data dissemination problem. You have got Coast Guard with their multiple responsibilities and not enough time. If that data was available to the individual state law enforcement or to NOAA OLE, I think NOAA OLE can access it. But a recent innovation, at least in Florida, is that every officer now has a laptop in their vehicle, so they can access charts and VMS data immediately.

Their access to data is a lot better than it used to be. Your point is well made. There is no point in gathering data if it is not getting to the people that need to respond to it. I think that is changing with the advent of cheaper technologies and the recognition that they are useful, but some of these agencies need to be brought out of the dark ages certainly.

DR. ROSS: Just kind of following that a little further, even though law enforcement and fishermen can plot these things, they are not made to have the equipment. I think that is kind of an aside. When we suggested the 400 meter contour, we were asked to come up with one number for the western boundary so we could simplify that.

It really was – there was no expectation on our part that that was very rigid. I think it would be very easy to clean up that boundary and still maintain what the thought was with the Deep Sea Coral CHAPC. Whether it is 380 meters or 420 is really – we haven't mapped any of that area so it really doesn't matter. It is an approximation.

As long as that boundary approximates the 400 meter contour, I think we can accomplish both tasks and simplify things a fair amount. We are not going to know anything about really how to

deal with those boundaries until there is better mapping and some actual groundtruthing, and that is going to be quite some time for a lot of that area.

DR. VAN DOLAH: With regard to AIS, having just downloaded the 2009 data from the Coastal Services Center Site, there are a lot of problems with that still. I don't quite understand why a vessel just magically appears in the ocean and then disappears. There are lines that go along and then it just stops, and clearly something has gotten turned off.

It is not a panacea as near as I can tell for actually tracking a lot of vessels. There is a lot of errors and noise in the system and there are a lot of problems with how the vessels register themselves. It seems to be sort of kind of voluntary what they call themselves and destinations. They have a port that they are leaving from and a port they are coming back to, but if it is the same port it gets really screwy in terms of a cruise track number.

DR. BROOKE: That is true, and there is really no panacea. AIS has been sort of – it has been a loose kind of – there is no requirement to track it except in certain places. It was used up in New England to track vessels going through the right whale protection zones; speeds and so forth. It is not being really used for enforcement purposes.

I think it could be cleaned up. It could be made more useful if there were the right reasons to do so, but right now it is just something some vessels are required to have and they are just dots moving around. They are not tamper proof and neither is VMS. There are stories of vessels with VMS systems on them, they stick a steel bucket over it, they nip inside the protected area, they come back out and they go, oops, lost the technology for awhile. None of this stuff is fool proof.

In the absence of any data about what the vessels are doing, assuming you have the capacity to watch it and respond to it, then it is useful. Now in the south region there are so many recreational fishing vessels, you can mandate that they are required to carry a handheld AIS unit and they will be a blip on the screen, but it is going to be a nightmare trying to track them all. You are right, this isn't a panacea and it might need some modification. This is a concept that this is one way of potentially tracking vessels that right now we are not looking at. So that is where that is.

MR. WAUGH: This issue of the number of waypoints has been interesting over time. It almost takes on a life of its own. It would be a lot easier to enforce speed limits if you didn't have any cars on the road. Law enforcement always wants these large square boxes. When we get down and work with the fishermen and with the researchers to protect, for instance, bottom habitat and coral, the fishermen fish very close to that so they want to have these waypoints, more of them so that they can more accurately pinpoint where they are.

We have looked into this when we were dealing with this in setting these areas, and in every other region of the country there are many, many more waypoints. It only seems to be an issue in the southeast. We negotiated even with law enforcement to reduce the number of waypoints. But as we understand it and have been told by the experts, the fishermen can download these waypoints into their electronics.

They don't need to key them in anymore. The more waypoints allow them to pinpoint where they are more accurately. If you simplify it and have fewer waypoints, then the distance is greater in between those waypoints If they are in the middle in between two distant points, it is harder for them to figure out where they are.

I guess the specific questions I have – one of your comments was it is confusing to stakeholders, and the boundaries are difficult to enforce. We have never received input from the fishermen that there is any problem with the number of waypoints, only law enforcement. In terms of the reference to stakeholders and difficulty, did you get any feedback that this was an issue from anyone besides law enforcement?

DR. BROOKE: The short answer to that is no. I asked Anna about what the golden crab guys thought about the boundaries. Anna can speak to that, but basically they are okay with it but they had other issues to deal with at the time. Right now that area isn't really being used, and I would just like to go back to this one.

I really don't understand why this does this and why it needs to do that. Wouldn't it be easier to square it off somehow down here? Look, all these clusters, these are all piled up on top of each other. Now maybe that doesn't matter, you can bring it into a mapping –

MR. WAUGH: If the vessel is here, it's pretty hard to figure out where they are, whether they're in or out of –

DR. BROOKE: No, you have got that line. It is either that side or that side of the longitude.

MR. WAUGH: A square line, if you are right on it, is difficult to figure out where you are than if you're right here. But what we have heard from all the experts is the more waypoints you have – for instance, having many waypoints, if you are in here where the fishermen are told that they need to fish up close to the grid, if you are in here with these waypoints close together, then you can more accurately tell where you are than if you are here and you have got waypoints very far apart.

DR. BROOKE: That is not true.

MR. WAUGH: We can look into why this is showing up like this, whether it is plotted correctly, whether the fishermen wanted to fish in this area, depending on what the habitat is in this area, but there is a huge negotiation process that goes through with the industry to figure out where they fish, where they have historically fished, such as if there ever was habitat in there they have already destroyed.

DR. BROOKE: Right, the point you made about these waypoints being far apart, you don't need waypoints between a straight line. You are either one side or the other of a longitude line. That is why law enforcement likes them. It requires no interpolation whatsoever between the waypoint, so you can get away with waypoints.

But I understand, you know, square boxes are not necessarily the best way to protect things. When they can be square, then it is a better option. As far as this wiggly bit, we recommended this, and so it is actually including more habitat that is cut off to fishermen than the line that we recommended, as well as having this strange little thing up here.

That doesn't explain why you have got a whole cluster here and then further south in Miami, where a lot of fishing activity is, you have got a long line between them. I know that there is a lot of work that goes into creating these boundaries, and I don't want to upend this for no good reason, but some of these dots just don't seem to make a whole lot of sense to me.

MR. BLAIR: I just want to kind of go back being at the meeting where we actually created probably three or four hundred of those dots. It was an intent my understanding is to have it bordered by the 400 meter contour. However, there were numerous areas that had habitat outside of those areas that we deviated the line in order to include those areas.

We would have to go back to those maps to determine which areas those are, and I would suspect but I am not positive that is an area that we modified to include habitat. As I said, we need to go back to those maps to determine it. Now, why it doesn't follow the 400 meter contour may be based on what map he is projecting those points on versus the map that was used to get the 400 meter contour when we were scribing that area.

Something maybe to the council is, is there a means or ways things can be done? To me for law enforcement, if the statement in the regulation is that the deeper than 400 meter contour and then when you are out in the water and you look at your fathometer to get your depth, you know whether you are east or west of that point; the same way you have the latitude and longitude that can be plotted to be able to show if you are inside or outside a box. Although I understand the need for making it as clear as possible, it does seem that some of this is – I am not sure I understand the intensity that seems to come out sometimes on how law enforcement may or may not be able to determine its location.

DR. ROSS: I have a couple of comments on this. Looking at this map at this scale makes it appear that these dots are really close together. If you zoom in to real time, as you really are on the ocean, those dots are far apart and it doesn't make any difference whether they are a mile apart or 50 miles apart, and you can draw a line on your chart the same way you can put dots into the plotter.

I don't see simplifying that as – you know, I am not seeing it necessarily from the fishermen's perspective, but it seems like from either view it could be simplified. What I am a little concerned about in the process is that at some point those of us that were involved in making the recommendation for a bathymetry line in relation to deep sea corals maybe should have been consulted about the deviation from that line and been part of the process with law enforcement and maybe a bigger community.

Unless somebody can tell me why there is a really important habitat in there, that doesn't really make any sense. If it doesn't make sense to us it is not going to make sense to the people we are trying to push it to. It could be that does follow the 400 meter contour, but does it really have to?

From my point of view, it doesn't. That is a general recommendation, as I said, plus or minus 20 or 30 meters is not a big deal probably, unless we know something about the habitat.

MR. SHEPARD: Just as a general thought; there is no way that the Coral Advisory Panel should be basing our decisions on where these things should be based on the notion of geometry and the boxes. Our role is to establish the best places for the ecosystem and the users, the combination of the two.

From what I have heard, it sounds like for the users it is a lot less of an issue than it is for law enforcement. I don't know if that is because law enforcement has got to get their act together and get digital or something, and that is one point. The second point is much easier, I think. We should make a recommendation as the Coral AP that the South Atlantic Fishery Management Council Website should be the one-stop shop.

It should be improved if it needs to be improved. That is an easy thing to do, get all those shapefiles and borders and phone apps, whatever. I really like the idea of the phone app and I think that the South Atlantic Council should consider that as well for all its boundaries and regulations.

DR. BROOKE: Just respond to that just quickly; I wasn't suggesting that we protect based on geometry; not in the slightest. This is why if we decide to adjust these boundaries, which we may not, it has to be a discussion between the coral people and the law enforcement people and probably the fishermen. They should be involved in this, too.

Just because somebody can live with a situation doesn't mean that it is optimal either, and we haven't asked the fishermen directly if they are okay with this. Maybe it needs to be revisited as an issue amongst different user groups. Law enforcement does indeed need to get their act together; you are absolutely right. But for now they are mandated with the job; and if it doesn't compromise either the fishermen's interests or the conservation interests, then we should work with them to optimize their life if we want them to enforce these regulations. It is so easy to chuck out a case. General Counsel is so overloaded, and one of the things that is not accepted just pro rata is the use of technologies.

GPS is becoming more accepted as an evidence tool, but they question it. There is a burden of proof on law enforcement to show that the GPS is working, that part of the paperwork for a federal case study is to write down how many satellites were operating, seriously, number of satellites that were active when they read the number off their GPS unit.

DR. ROSS: Yes, but nobody records that.

AP MEMBER: No, but if you knew you had to, you could.

DR. BROOKE: Yes, you would, but it is – so what if there was only one satellite active? It is a lousy position, exactly. Then the case can get thrown out. Anyway, I am getting into the weeds a little bit. I guess my comment is if we can make this simpler without a lot of heartache and if we can make it easier for law enforcement, then we probably should.

MR. CRAMER: I can tell you as a commercial fisherman the more dots the better, because when you zoom down on your plotter it is a lot easier to tell between these two close dots than it is from these long dots. A lot of the plotters, these guys out in deeper water probably have a lot fancier plotters than the shallow water guys, but we went through this with the Sanctuary and with the coral people just a couple months ago in plotting out these coral areas.

I remember Billy Causey saying that, you know if you turn in this information to the chart companies, that they will put it all in their system. He said it was a pretty simple deal. But for us, a lot of the plotters that we use it is not so easy to put in a straight line between the dots. It is easy to put waypoints in.

But when you look at a map that big, even the law enforcement, if you have a Coast Guard cutter going out of Miami, he is going to patrol a certain area. He is not going to be patrolling probably all the way up to North Carolina. They might have to put in a couple hundred waypoints for their area.

I have thousands of waypoints on my machine. I just don't see it's a big deal; and especially in our little Keys area, there are little areas that we fish that aren't near coral, that are real productive and for us fishermen it is definitely better to have more waypoints because we can zoom down and we can tell on the chart if we are in that line.

MS. PUGLISE: My mind vaguely recalls that we have actually covered some of this ground; it has just been a couple years since we discussed it. I do remember us getting into a discussion about law enforcement saying we had too many waypoints. I think rather than to continue this, we have already been doing this for an hour, I think it would be better for us to revisit it the next meeting and pull up those minutes where we have already kind of discussed some of these issues and revisit it that way with all the information in front of us.

MR. BLAIR: I agree that we kind of need a review in the genesis of these points, because as I said, I know there were some areas that we deviated explicitly to include habitat. Just from that overall deviation from it, I would imagine that we would probably – with a compilation of those maps, that is something I can try to work with council to get distributed to people and maybe we can continue this through e-mail process for a while to see how we can develop this or where this development may go. Gregg, did you have other comments?

MR. WAUGH: Yes, similar to what you just said, I was going to offer that at the next AP meeting we will work with Roger and have a presentation to show why we ended up with these points working with the industry. As Mr. Cramer said, that is what we have heard from all our fishermen. The fishermen don't have a problem with these waypoints.

We will get a presentation for you to show why we deviated. My other suggestion was going to be rather than the AP going backwards and dealing with these that have been set and that are already in place, deal with this in the new areas you are recommending. If you think the benefits to law enforcement are greater with fewer points, a more square box, then develop your future recommendations along that line. Then let's work with that and see how that shakes out.

MR. BLAIR: I think it has been stated and there is recognition that again if the intent is to follow a line, it should follow the line, but by the same token we already know we were talking about potentially consideration of areas where we may define the line based on the permanence of an 8 degree centigrade thermocline.

That these obviously are not going to be, unfortunately, geometric shapes that are going to always be what is desired; and understanding the aspect that it is easier and you want to make it as easy as possible for law enforcement to encourage them to do the enforcement as opposed to making it difficult and they are just going to say, to hell with it.

DR. BANKS: What Jeff said is right, that manufacturers can easily put these things in the chart plotters, and they don't have to use point files, they can use polygon files, which just give you lines and not points. It might be worth having a manufacturing representative come and talk to us about how easy or difficult that is to do, just so we will know and be accommodating to law enforcement.

DR. ROSS: Yes, I want to wrap this up, too, and I was just going to comment kind of in the same way that going beyond the manufacturers; if the NOAA charting entities could actually get these on the charts, just like Oculina is on the chart, then the way points become superfluous, use the lines on the chart, you know where your boat is.

The only problem I see with that is whether we are at the point where we are fairly certain of not changing things, I think I would like to add a recommendation that when we have that presentation, somebody investigate the process for getting these to the NOAA charting facilities, which then will go to the manufacturers automatically. They will be on the official NOAA charts. I think that would be helpful in addition to the waypoints, perhaps.

MR. BLAIR: I don't know that that is – I mean, we work directly with sending information relative to our artificial reef areas and so forth that are plotted on the NOAA charts, so I don't believe, and we, I say we, our workgroup and so forth provides NOAA that information anytime there is a boundary change.

I think the process is there or may be some of it that we would have to investigate – and I agree with you I think it is a great idea – is whether there are explicit types or information needs that either are included or restricted from plotting. But it seems as though regulated areas, that is part of the intent of those things, so it would make sense.

DR. ROSS: Yes, Oculina is in there, so that would help.

MR. BLAIR: Okay, we are going to move ahead. I thank Gregg for the offer; definitely we will work on both gathering this information and compiling it and look for the opportunity to review this at the next meeting as well as look into the potential of both the NOAA aspect of it and industry's ability to be able to simplify the process.

We are going to go into the discussion of Spiny Lobster Amendment 11. I know there is one other panel member that wanted to be here but couldn't, had a conflict, and as we are going to

pull him in by phone so that he can hear the presentation, I would like to suggest maybe while we get that set up, a very, very short five-minute break.

MR. BLAIR: We will reconvene. I want to welcome Ken Nedimyer, who joins us on the phone.

MS. MARTIN: Can you hear all right, Ken?

MR. NEDIMYER: I can hear him.

MR. BLAIR: That is good, we can hear you, too. I'm glad you are able to join us for this conversation, Ken. Kari MacLauchlin will be providing an overview of the proposed closure areas for the spiny lobster fishery for the protection of elkhorn and staghorn coral.

DR. MacLAUCHLIN: Good morning. My name is Kari MacLauchlin; I am the Fisheries Social Scientist for the South Atlantic Council, and I am the council lead for spiny lobster. That is why I am here to talk to you about Amendment 11. This is Attachment 4 in your briefing book materials, and I am just going to use the summary document to go through.

I will start out with a little background to refresh your memory and catch everyone up with these actions in Amendment 11. In 2009 NOAA Fisheries published a biological opinion for the spiny lobster fishery. This examined interactions with sea turtles and smalltooth sawfish and elkhorn and staghorn coral. The biological opinion has some requirements to help protect these protected species.

One was to require additional closed areas or expand the existing closed areas to help protect elkhorn and staghorn coral, and then also to require gear markings on the rope that is used in trap lines for the spiny lobster trap fishery; so that when there is an interaction with an endangered or threatened species, that can be accounted for as being an interaction with the spiny lobster trap fishery, and so this would be like a color or a marking or something on the line.

These two actions went into Amendment 10 for the Spiny Lobster FMP, and this is jointly managed with the Gulf Council. We had public hearings in April and at the public hearings the fishermen that came out with the closed areas expressed concern because there had been communication with the protective resources staff to help develop the closed areas – I'm sorry, to designate and get the fishermen's input about what areas would be good to close off to the trap fishing, but then hadn't really heard much from protective resources, and this was actually the first time that they had seen the maps that showed these different areas.

In general the concern was this is fine and we understand why we need to do this and protect the coral, but we are not so happy about the process and we feel like we could give some more suggestions and be involved a little more and actually make these designated closed areas more effective in protecting the elkhorn and staghorn coral.

Then also we heard with the trap line marking was a lot of concern about the economic impact on the fishermen, having to replace the lines. There had been in the biological opinion written in

a five-year phase in, but that was in 2009. This would require the fishermen to replace their trap lines with whatever color-coded or marked line that came through by 2014.

So that would have been in two years, because Amendment 10 is just now coming through and it is going to be implemented soon. It shortened their time and so that was what the fishermen brought to the table, and they spoke about it at the public hearings that we have in April, and then we had a joint meeting with the Gulf Council in Key West in June.

We also had public testimony to the councils about the economic impact of the trap line marking and then about the closed areas, how they felt like there was actually a better way to go about this. At the June meeting the councils decided to take no action – select the preferred alternative to take no action for these and address this at a later date.

Then in July protective resources staff met with – conducted some workshops down in the Keys – and Jeff can talk about this – to get some more feedback from the fishermen to help improve the maps and to develop some new closed areas. Those were incorporated into the different alternatives that are in this document and the maps that came with it.

Then also the biological opinion was revised that changed that implementation date for the trap line marking to 2017, so to move it up so there could be a five-year phase in. At the September meeting for the South Atlantic Council, Andy Herndon from Protective Resources came and talked about the workshops and everything, because that was the council's concern was the process and the involvement with the stakeholders.

He talked about how that information was incorporated into the new maps. Then he also just talked about the actions and alternatives, but this Amendment 11 wasn't ready to be presented yet. At this time the South Atlantic Council has not seen the new actions and alternatives, but the Gulf Council is meeting this week, and actually today.

This morning they are having their Spiny Lobster Committee meeting and this will be the first time that they will review this document and discuss the alternatives, maybe select a preferred alternative and discuss public hearings. Then the South Atlantic Council will review this again and review what the Gulf Council – what kind of recommendations they made and if they select a preferred alternative.

Then we are planning to take this to public hearing at the end of January and February if the councils approve that. These two actions have been moved to Amendment 11, and this is in the EEZ only and not in state waters. This is Action 1 and there are four alternatives with a couple options. This is also in Attachment 4 if you want to see it.

This is for the closed areas. Alternative 1 is no action. Alternative 2 closes all the hard bottom and that would be about 73 square miles. Then underneath this alternative there are two options, which Option A is to close it to spiny lobster trapping only and Option B is to close it to all spiny lobster fishing.

Alternative 3 creates these new closed areas that have straight line boundaries, so they have identified these different areas to protect and then just made boxes around some of them. The law enforcement's preference is to work with the straight line boundaries. Then again the same options, Option A is just to close it off to spiny lobster trap fishing and Option B is to close it off to all spiny lobster fishing. This would close about 6.7 square miles.

Alternative 4 uses these identified areas and then puts a 500-foot buffer around them, so it is more like these circle areas, and that is about 6.7 square miles as well, and Option A is the same, spiny lobster trap fishing would be prohibited. Option B is that all spiny lobster would be prohibited. There are several maps that show the detailed areas that are in this document.

I am not going to review them, but they are in the document and you can review them or we can talk about some of them specifically. This is an example – this box would be Alternative 3, but then the dots would be Alternative 4, which is the buffer. Action 2 is to require the gear marking, and the color they have chosen is white.

This is so they can identify an interaction as being from a spiny lobster trap or not. Alternative 2 would be to either have a white marking such as an all white rope or a tracer through there. Then Alternative 3 would be to just have like a permanently affixed white mark on their four inch wide at least every 15 feet. This could be some spray paint or tape or something like that.

There is a photo of an example from New England where they have implemented these for all the different pot fisheries in areas. The issue with this one more than anything is the economic impact on the fishery. Chuck Adams, who is a Sea Grant extension agent with the University of Florida, and he is a fisheries economist, he did an economic analysis on it with a 15-year horizon.

That has been incorporated, and he talked about how using a white rope or another color rope wouldn't last as long so the fishermen would have to replace them more often because of the sun exposure and everything. He came up with over a million dollars and then the 15-year horizon was $8 million impact on the fishery.

But the economic analysis for the document by the economists at NMFS had calculated it to be about $265,000 economic impact because the fishermen would have to replace the line anyway, so they would be paying for new line, anyway, and also that Chuck had done the analysis with all the traps and only about half the traps are in the EEZ, and the rest of them are in the state waters. It wouldn't be required for traps in state waters.

With regards to Florida taking any action or adopting these as well, I think that is the intent of NOAA Fisheries and the biological opinion is to also get Florida involved and put these regulations in state waters, but at this time Florida is not discussing that. These requirements won't apply to state waters. That is an overview of it, if anyone has any questions or discussion.

DR. VAN DOLAH: As you look at the alternatives and these maps, some of them have the buffered circles inside the box and others don't have a box but just a buffered circle. How would the corals outside that are not in a buffered box be protected under the box scenario?

DR. MacLAUCHLIN: From my understanding, if the councils choose Alternative 3, which is the straight line boundaries, anything that is not in a box would not be in a closed area.

DR. VAN DOLAH: Okay, so they would then be susceptible to damage?

MS. MacLAUCHLIN: Yes.

MR. BLAIR: Also in that alternative, either the box or the buffer, these are identified. The areas that may have new-found colonies of acropora, are they automatically protected with additional drawing or are they excluded because they are not in the boxes that the amendment presently has?

DR. MacLAUCHLIN: From my understanding, this is for the present day identified areas. There were five criteria which is all elkhorn, co-occurrence of elkhorn and staghorn, co-occurrence with other species, highly reproductive colonies and then a distribution does not be disproportionate. I think that it is present day; and future colonies that identify that, I don't think there is anything in there. Does that answer your question like what happens when later on there are colonies identified? That would take additional action.

MR. BLAIR: Right, for an example, over the last five or seven years there has been a rather substantial increase in the coverage of acropora cervicornis off Miami-Dade. The areas that are there now are in no way representative of what may be there in five years. Let alone there is other initiatives ongoing that may be talking about various out-planting of corals into regions, although that is still very in the discussion phase. But it would seem that the document – it would seem as though there should be the means of being able to protect all the species and not simply those that are identified at a given point in time.

MR. CRAMER: I have a lot to say on this one. I just want to say the boxes we drew up – Ken was at the meeting. We had a meeting with – Billy Causey was there; Bruce Popham, Chair of the AP; Andy Herndon from Protective Species; we had James Byrne from the Nature Conservancy; John Hunt from FWC, and three or four commercial fishermen, and I am sure I left a couple other people off.

There were some pretty knowledgeable people about the fisheries in the Keys and fisheries management in the Keys and the reefs. We came up with these boxes which actually ended up being a lot better than what the National Marine Fisheries Service proposed originally. Ken's Coral Nursery's weren't in there. A lot of areas that we came and said, hey, there are some really nice corals here, and Ken and Billy, all them, hey, there are not corals here but there are corals over here.

We kind of made more boxes, I believe and redrew the boundaries because the boundaries didn't make sense. It was something similar to what we were talking about earlier; well, let's run these lines on latitude/longitude but they were protecting 30 percent reef and 70 percent sand, which is where the trap fishermen like to fish.

The one thing people don't realize about the trap fisheries is we don't want to fish on the reef. That is the least productive area to put your trap and the most damaging place to put your trap. We are far more productive fishing in that sand offside of the reef. The problem with the 500-foot buffer is these patch reefs, you start putting in 500-foot buffers and then you take out all that sand in between the reefs.

Actually, when there are storms and stuff with movement, there are some areas, which Ken can attest to with his coral nurseries, is sometimes in these sand troughs in between the reefs it is deeper than the higher structure on the reef, and it actually protects those traps from moving in the surge, so it actually protects it. That is pretty much all I have got to say about the boxes.

On the trap line, this report was like a negative-biased report against the commercial spiny lobster fishery. I mean, when they say that 50 percent of the lobster trap ropes are in the EEZ, unless I misspoke that, but there are far less traps in the EEZ on spiny lobster. I would say there is probably only maybe 20 percent. Most are fished in state waters or in the Gulf of Mexico. Very few are fished in the EEZ.

If you require only the traps in the EEZ – because from what I understand the state may not be too gung ho on changing the rope requirements in the state waters – and our stone crab traps, there are three times more stone crab traps than there are lobster traps. There are 1.2 or 1.4 million stone crab traps that all have black ropes.

The lobster fishery is 460,000 lobster traps in the spiny lobster fishery, which we have reduced in half over the last 15 or 20 years through our limited entry program, and they are still being reduced right now. Every time there is a sale, they are reduced so we are reducing our impact every year.

But the rope, biologically it is not going to do a single thing. Having a white rope is not going to prevent a turtle from being entangled in a white rope over a black rope. The amount of turtles that are killed, I don't even know what it is, but it is so minimal. Over the last five years we have saved over 200 turtles that the commercial fishermen have brought in from red tides, the cold, this and that.

I think there were 2 deaths last year from turtles from supposed lobster trap lines, which could have been stone crab lines, which could have been, you know, whatever. The problem is you go with the rope that is distinguishable only to our fishery; I mean, you are talking 435,000 traps. The cost is going to be a lot more to make that rope just for our specific.

You know, we get the black rope now which is what the entire Caribbean uses. In subtropical conditions that rope holds up the best. Black is the best color, polypropylene works good. Our lines are all marked with buoys, and in the EEZ in particular, not so much in the Gulf, but in the EEZ we use line lids on all our ropes, on your main line going down.

Because there is so much boat traffic in South Florida, you don't want any rope floating on the surface. If you have a boat coming through and it cuts off your rope, your buoy, if it is floating it

is because it has got a buoy attached with the sea number, you know, the crawfish number. That distinguishes that rope.

The rest of the rope goes down to the bottom because it has got leads on it. If it is on the bottom around the coral, we will admit it is lobster rope. We are not going to deny that it is not. Any of that rope out there on the reef that is black trap line, 99 percent of it is probably from the spiny lobster fishery. We have no problem admitting to that.

Why make us make a rope that is going to make us change our whole thing. It is not going to be as strong of a rope. We are going to have to go to a probably bigger size because even if we put a tracer in it, usually the tracer is a third of the rope, at least three coils of rope together stranded, so you are going to have a rope that a third weaker than our normal rope that we use because of this colored rope that is probably going to degrade more and not going to be as strong.

We are going to probably go from 5/16 rope to 3/8, which is going to increase our cost. The colored rope that is made just for our fishery, but another thing – sorry I ramble on a lot, but another thing is there are only a few suppliers of this rope to most of the Caribbean countries. One of them is Atlantic and Gulf Fishing Supply in Miami.

They supply probably the majority of the rope to the Caribbean. When they buy rope, they buy it in bulk to get a better deal. If they can get this rope made with our distinguishable tracer, they are going to order a bunch of it at once and is there any regulation that they can't sell it to these Caribbean countries?

We are going to get all this rope coming in that is the same color as ours because that is what they want to sell and that is what they can sell for the cheapest price. I don't think it is going to be a distinguishable – even if you make it with a white tracer in it, if they are selling it all over the Caribbean, how are you going to know it is from our fishery?

It could be from somewhere, it could be from Honduras, it could be from anywhere in the Caribbean. It just makes no sense. Like I said, if there is a floating rope, 20 percent, 30 percent is all the gear on the lobster fishery that would probably have to have this rope requirement if the state doesn't adopt the same plan.

If the rope is cut off and floating, it has probably got a buoy on it, especially out in the EEZ trap. The other rest of the rope is on the bottom. Now the chances of a rope floating in from Honduras and deciding to sink right there in the reef and not go up with the Gulf Stream current or go up on the beach, it is a very small percentage, I would imagine. Whatever is out there on the bottom on the reef, it is us.

That is pretty much all I have to say about that. I mean the spray paint doesn't work. I have a friend; I go up every year and fish with him up in Maine. They do everything different. What they do – what they use up there we have tried down here, because I thought, wow, that is a really good idea, but the colored stuff, it just doesn't work. The rope degrades, we have tried it. We use it on – I have never seen it – we use polypropylene rope because it is strong, it holds up the best, black polypropylene. I have never seen white polypropylene rope.

I am sure they can make it but I have never seen it. When we run stringers of traps in the deep water so we don't lose them, if you lose the buoys you can still grapple and get your trawl line, that is always colored rope because it is sink rope. I have never seen a black sink rope. Sure, they can make it, too, but, you know, if we have different color ropes going on, it would just be a really big burden for absolutely no biological advantage. I just think it is totally unnecessary and I don't know why they are doing that, but that is what I have got to say.

DR. VAN DOLAH: With regard to the buffer areas, I would think as per our earlier conversation, that all these small 500-foot buffer areas would be a law enforcement nightmare to deal with and would think the boxes to be far more preferable from an enforcement strategy. I think the points just made on the rope should be listened to by the council. I think he makes a very convincing argument that an alternative rope is probably not going to add or add protection.

MR. SHEPARD: Thanks for the perspective, Jeff. I have some question; I just wasn't clear which alternative, if any of them, you were asking or saying that should be done.

MR. CRAMER: On the closed areas?

MR. SHEPARD: Yes.

MR. CRAMER: I support, I think it was the third Alternative B, which would prohibit all lobster fishing in there; trapping or recreational, because if there are corals down there, what is the use of just prohibiting trapping when a lobster diver is going to go down, throw an anchor on the reef possibly, go down there, be foraging, possibly damaging the corals collecting lobsters. I think it should be both.

MR. WAUGH: The council is going to be asked to approve this for public hearings at our December meeting, and you guys are the Coral AP. I would like your perspective on the information that is in here, because I looked at it. From my non-coral biological perspective, I can't find sufficient information on the distribution of these corals.

The charts are useless in terms of determining where coral is. I couldn't find any waypoints or latitude or longitude for the fishermen to take these areas and plug them into to their electronics to verify the areas. These are all requirements that were we proposing this amendment we would have to meet. I was just wondering in your look at this, did I overlook this information? What is your perspective on the amount of information in this document?

MR. CRAMER: Actually Bill Kelly, our director of one of the organizations that I am a director on, he actually called up the Protective Species Division and asked them – he had got the charts and asked them for the GPS coordinates and they said we don't have them. He was like what do you mean you don't have them because he wanted to check and make sure everything was right and they couldn't provide them to us. This was just a week or two ago. That is all I know about the GPS coordinates. They didn't have them available.

MS. KARAZSIA: I don't work for Protective Resources Division; I work for Habitat Conservation Division, and I know they maintain a data base of acropora, and probably Kate or

Dave, you access the data base or provide input into it, you guys can probably better address. I know I have heard from others that there are accessibility issues in that data base but I don't know if you guys can maybe talk about that.

MS. SEMON-LUNZ: Yes, FWC is currently working on that database and getting that into a useable framework, but that was something that Dave Palandro was working on. I think as you know he is leaving, so I think his staff is remaining to continue to work on that data base. I am just Googling it right now and trying to see if I can find it. We do host an acropora waypoint data base.

MS. KARAZSIA: Just for clarification, there is one acropora data base that the NMFS regional office uses and FWRI; they are somehow synced?

MS. SEMON-LUNZ: That is the goal, yes, that they are redundant essentially. They sync.

DR. GILLIAM: We are just now really moving forward in terms of working with FWC and creating some of these distribution type maps. One comment I had was similar to what Steve had. Most of these areas are going to be – although it includes both species, there is certainly a lot more acropora cervicornis than there is palmata.

When you draw lines on the map in terms of colony locations with acropora cervicornis, there needs to be a process that allows for those lines to be moved, because acropora cervicornis is a strange beast. It fragments and moves; it is how it distributes itself. An area that may have – I don't know if this is based on some minimum density.

I had a hard time understanding how these locations were chosen because it is tough for me, for someone who studies acropora cervicornis, to draw a line around a acropora cervicornis colony because that doesn't make sense. A year from now that colony is probably not there which means that line has no meaning. The colony is going to be over there. I am not sure how these lines were drawn. Was it based on some type of density or was it truly just known locations of acropora cervicornis colonies?

MR. NEDIMYER: For most of the Upper and Middle Keys I am very familiar with where those lines have been drawn. I am familiar with the corals that are there. They have picked – they have tried to pick areas where there is a lot dots and draw a box around that, and a lot of times that is a distinct patch reef or a series of patch reefs.

And Dave is right, they do kind of move in storms, but what tends to happen here in the Keys is once they move off a patch reef they fall into the grass or the sand and they die. They don't necessarily move to another patch reef very easily. Those numbers kind of catch most of the hotspots, the good spots. I have groundtruthed a lot of them.

I think they are the right areas; maybe not the right shaped boxes but I think they have captured the most important areas that we should be looking at. There are certainly stray cervicornis colonies all over the place, but I don't think the intent is to try to protect every single cervicornis; it is to try to protect some of the better areas.

I support where the boxes are. I think certainly I don't support having square rectangular boxes but then again that is just the way NMFS wants to do it and there is going to be no marking on the surface to indicate where those boxes are. There are not going to be corner marks on them or anything like that. It is going to be really hard to enforce anything they do.

DR. GILLIAM: That is good information, Ken, thank you. Although it wasn't clear in this document that I reviewed, it was based on some – perhaps actual density wasn't used, but some local knowledge and experience in terms of areas that had some greater abundance of colonies versus areas where those colonies were more sparse. So it wasn't really individual identified colonies as it is stated there, but it is more consisting of areas that had some abundance of colonies with some assumed likelihood that those colonies would be somewhat persistent so that that area needs to be protected versus –

MR. NEDIMYER: If that is what you are asking, then the answer is, yes, they have identified areas where colonies are persistent and they are attached. You might get breakage but this is still a prime area to protect. I have looked at a lot of them. I know the area really well and I think they nailed it pretty well for federal waters. There is nothing in state waters, but that is not up to the council to decide.

MS. KARAZSIA: Ken, this is Jocelyn Karazsia; is there any type of like report – is this the outcome of some monitoring effort in the Sanctuary? Where can you find more information on these areas that characterizes each of them in particular from the acropora perspective or is this just local knowledge?

MR. BLAIR: Ken, did you hear that question?

MR. NEDIMYER: No, could she repeat it, please.

MS. KARAZSIA: I was asking is there a report that characterizes each of these sites or do you know is this based on local knowledge, is this based on a Sanctuary resource, a compilation of existing sets of information? I mean, where are all of these sites kind of characterized and where did the information come from, and was it developed in a standardized way and do we have that information that you know of, or anybody? I guess the question doesn't have to be Ken.

MR. NEDIMYER: I didn't draw the boxes. They are pretty much going by the FWRI and the available data sets, and I think when they drew the boxes they were looking at clusters of cervicornis, and I don't think they really talked to anybody about it. I mean, it seems like a lot of it is in the dark, and yet we did have several meetings down here with Andy Herndon and I pointed out some areas that were good.

I think there was a lot of concern. It is like, hey, who drew these boxes and what are they basing them on? Actually they did a pretty good job considering it seemed to be somewhat in the dark and without any of the information that you ask about. I don't know that it was that readily available. There is not that many people that know all of those sites.

MR. CRAMER: Yes, Ken, the first meeting Andy Herndon came down to the Keys, he met with a bunch of the commercial fishermen and we asked him where the information came from. I believe it was like for the palmata. It was like a triangle on the map and a circle was the cervicornis. I don't remember exactly where he said that information came, but they might be the one to come where – Protected Species might be the ones to ask where that information came from. I know at one time during the last couple years he was also getting some additional information I believe from some Coast Guard surveys or something.

They were continuing to adding, but some of the data was from the 1990s. That is one of the reasons why we kind of got together and said, hey, Ken in particular, some of these areas are completely dead now, there is nothing there alive, but there is an area over here that is really nice that we need to do something about. Actually some of the fishermen came forward and said the same thing; hey, this area over here, there is a lot of nice stuff, why don't you do something about that? But Protected Species is the one to ask about where they came up with the spots.

MR. WAUGH: It sounds like we have a process, a process was used. There is information, there is expert knowledge. The problem is none of that is in the amendment and it should be, as should the waypoints. Again, looking at this document now, to me it is not ready to go out to public hearing because it doesn't have sufficient information. I mean what I am hearing from you guys is you can't evaluate to what extent this is protecting coral based on the information that is in the document.

MR. BLAIR: At least we have concerns on it.

DR. MacLAUCHLIN: I was going to answer the question about where the data came from. At least the first time around it came from this data base from FWRI, and it was a kind of public could submit GPS points for places, and then I think FWC folks would go out and groundtruth some of them.

Then they also would incorporate some of their own information into this data base. But that is why there were closed areas on land and stuff, because some of that came from public submission and wasn't checked. That was the basis of the base map of here are the areas that we can talk about.

Then I think the workshop in July in the Keys was supposed to kind of go in and refine those and sort out where what was a good spot and what maybe wasn't a good spot and other places to move the areas to. It is kind of a combination of data collected by FWC, of public and then of local knowledge from the fishermen.

MR. McFALL: A lot of this data has come from probably the most comprehensive long-term data set, and I had to write this down so I could get it right. They call it the Screen Team. It is Dr. Steven Miller. It is called the "Sanctuary Coral Reef Ecological Assessment and Monitoring Team", and they have been doing this monitoring for probably the better part of 15 years now.

I am sure that a lot of that data might have been fed into this. I kind of agree with Gregg Waugh that there is not sufficient information in this amendment to be able to point to where the boxes

are and waypoints and all that stuff, but conceptually I think it is a good idea. I think the boxes would probably be the best option with no lobster fishing at all.

DR. GILLIAM: As Gregg said, conceptually I think this is great as well. I actually appreciate what Jeff said, that the lobster fishermen really don't want to put their traps on the reef. Some comments or suggestions on this – I know this creates work but I think one way that might be easier to understand the process is to not necessarily lump these two species together when writing up this amendment, because I think they are both protected species, but palmata does behave a little bit differently than cervicornis.

I think the locations for palmata can be drawn out perhaps with ink where the locations with cervicornis are drawn with pencil. I think that needs to be differentiated in terms of how the process went through in defining these sites. These are known sites with acropora palmata. Whether all palmata is now protected through this process in terms of where the lobster fishing can occur or certain sites, that could be clearly defined, this is how we chose the sites for palmata.

Then separately go through the process of determining how or describing how the sites were chosen for acropora cervicornis, because they are different in their behavior and how likely they are going to be in the same area over a long period of time. My second comment or recommendation in that same sense is that I think there needs to be a mechanism in this amendment that allows for these areas to be evaluated on some type of periodic basis to determine whether there are still these resources in the boxes or there are now better places because there are more resources than what was originally placed.

As I said, there needs to be a process that allows these boundaries to change and these boxes to be moved. Perhaps that needs to be – I don't know if that mechanism needs to be included in this amendment in some way. Then my final comment is obviously this was done to protect the resource. I know that our panel and the council is federal waters, but if the intent is to protect the resource and so much of the resource is actually in state waters versus federal, I would think that would still be in our panel and the council's best interest to put some pressure on the state to move this into state waters as well, because it doesn't make sense to just protect these resources in federal waters when the same is happening in state waters as well.

DR. FEDDERN: If these areas are prohibited, I think it will be a nightmare for law enforcement to enforce these especially in the beginning of the lobster season. With the general public not knowing where they are and not even having any GPS or anything on board, it would be I think an impossible situation.

MR. BLAIR: Do you know if there has been any coordination or discussion with law enforcement regarding considerations for enforcement on this?

DR. MacLAUCHLIN: At the council level not much. Well, our enforcement representatives, really the only thing I think that they have commented on has been straight line boundaries, but this has been brought up to Protected Resources is the enforceability of these regulations. As of now, there really hasn't been a good answer.

MR. NEDIMYER: I could weigh in on that. We did have law enforcement in on our meetings and they basically kind of rolled their eyes and said we are not going to do anything. I mean, on paper, yes, we are supposed to enforce it, but if there is no boundary lines, no markers, they said it is unlikely that something is going to be enforced.

MR. BLAIR: Essentially then, unless each of these boxes have surface buoys or some aspect to allow law enforcement to visually identify them, then they don't see it as an enforceable process; is that correct, Ken?

MR. NEDIMYER: That was my take on it; there are going to be a lot of boxes and you are going to have people fishing inside them, and I just don't think that is going to be a priority at all, and they pretty much said that. It is great to come up with all these rules and regulations, and I think we ought to be looking at how we should protect it but unless we have enough law enforcement out there to do it, then, whatever.

DR. BROOKE: Yes, question for Ken. There are a lot of protected areas that don't have surface markers. Is the problem that the Keys is so sort of cluttered with regulations that unless there are surface markers, law enforcement don't address it?

MR. NEDIMYER: Are you asking is that the problem? Yes, there are a lot of different zones down here and I think they are just overworked. There are not enough of them and it is like we are not going to try to enforce something that is not marked. That is their words, not mine.

MR. BLAIR: I was just asking Kari, and I don't know if either Ken or Jeff may know; do you know how many boxes are created in this?

MR. CRAMER: That I don't know.

MR. BLAIR: We can count real fast, but I was just hoping somebody had it off the top of their head.

MR. CRAMER: I just wanted to say that as far as the trap fishermen go, there are a lot of boxes already, spas in Key Largo, and they don't fish in any of them. More boxes isn't going to – commercial fishermen are going to keep their gear out of there. They are going to know where they are at.

The problem is with enforcement and just educating the public, because there is a lot of public, there are a lot of Griswalds that come from all over the world, from up north, you know. We talked about this at the meeting, and Shawn and Billy Causey said it is no problem giving the information to the chart companies, and they will put those boxes on there.

But a lot of these small boats don't have plotters on them or they don't carry around paper charts, they just go out of the marina straight out, and that is it. That is the problem. Trap fishery won't be a problem; they won't put their traps there. The problem is everyone else.

MS. KARAZSIA: The other thing I wanted to point out – and maybe some of these issues are addressed in the National Marine Fisheries Service Biological Opinion, but I don't know to what minimum mapping unit these reef maps were created. Off Southeast Florida our reef maps are to a one acre minimum mapping unit.

If you draw a box around these areas and say you want a 500 buffer around them; unless these areas are groundtruthed, the maps were not created to a spatial scale and resolution that is needed for this purpose and this type of management. We don't have a copy of the biological opinion in front of us, but maybe this is addressed. There should be some groundtruthing at these sites as well, and some more information on how these maps were created and to what scale and resolution.

MR. BLAIR: Kari, do you know – I mean obviously right on the front it says summary – is there a more detailed report that might have much of that information available at this time or anticipated to be produced?

DR. MacLAUCHLIN: No, and this is part of the problem. In general, the process from council staff side – and I feel like I can speak on behalf of Gulf Council staff also – is that most of the time we didn't know what was going on, and then we would get the maps. Then we would be like, well, what is the area and they would be like, well, we don't know. Then it would be this whole thing.

Then we would say, well, what are they waypoints? Well, we don't know. In general it is felt like a very rushed process, and for council staff it is difficult for us to convey that information to you and to the stakeholders and to the council members to discuss this action when where we are getting out information, it has just been very, very blurry. No, not a lot of it has been explained about where this came from. I don't know if there has been any groundtruthing, I don't think so. If there has, it hasn't been conveyed to us or to the council.

MR. BLAIR: I guess this may sound simplistic, but was this developed by an AP or presented to the council for implementation?

DR. MacLAUCHLIN: The way this works at the council process is that the biological opinion comes through Protected Resources – and they have the authority through the Endangered Species Act to do this – and then they put conditions in that are required to be met. There are many conditions actually that are going to have to be met in order for the fishery to be in compliance and minimize impact on protected resources.

That there is just a couple that – in the biological opinion it says that NMFS has to work with the South Atlantic and Gulf Council to implement these closed areas. Just so everybody understands, this was not a council action. It is a requirement from the biological opinion. Even though they should have some discretion, and they do kind of, they can pick all hard bottom or straight line or buffers and all fishing traps, all the options, but they don't have a choice of not putting in some kind of closed areas. This is where it is kind of weird because they don't – they supposedly have discretion in the color of the trap line markings and what kind of closed areas they want to do; however, this is something that is mandated in some way.

MR. BLAIR: I guess I am just getting – there is a Spiny Lobster Advisory Panel; is there not? Have they seen this? Have they produced any or commented on this document yet?

DR. MacLAUCHLIN: They have not commented on Amendment 11, but they commented on these actions when they were in Amendment 10. The thing about the South Atlantic, which we have remedied recently with that, it had the kind of distribution that turned into almost all recreational lobster fishing representatives and one commercial guy.

A lot of the AP recommendations that were voted on as motions came through without kind of that commercial input really. The Gulf council, it is a little different in their AP, but in general our AP recommended I think some of the straight line boundaries because they are mostly recreational and this is not going to affect recreational.

DR. VAN DOLAH: From the discussions that have transpired so far, it seems clear that this is not really ready for primetime. While some discussion could be initiated at the December meeting regarding general approach or preferences, until some better information is available on the distribution of these resources, I don't think anything specific can be initiated nor should it.

MR. McFALL: Maybe this is for Ken and the folks that are familiar with that area; a couple questions I have got are how deep a water are you talking about in the EEZ, the average depth outside of state waters?

DR. FEDDERN: The inner edge is probably around 20 feet; that is within the Hawk Channel. The outer, of course, is 600 feet or so. But the areas where the acropora are is in the shallow water on the reef crest and to a slight extent in Hawk Channel, but most of the acropora has historically been on the reef line.

MR. McFALL: You can find that reef crest as much as three miles offshore?

DR. FEDDERN: Yes, in the Lower Keys – mostly the reef crest is mostly beyond three miles, in the Upper Keys especially.

MR. BLAIR: Greg, if you see the maps and so forth, it has the state line on there. Each of them will show you that in certain areas of the Keys there is an extensive portion of the reef crest that is outside of that area. Those areas that they are showing the boxes and so forth are a part of the relatively shallow reef area that supports acropora.

MR. McFALL: The other question I had is – maybe Jeff can answer this – what percentage of the recreational lobster fishing would you say is conducted inside state waters?

MR. CRAMER: I would say probably 80 percent, maybe more. Most of the recreational is shallow water, the bay, close to shore. I would say probably at least 80 percent. I mean, when you see mini-season open up, there are very few boats out in the reef. Most of them are all inshore, in the bay side. That is usually where the lobsters are at the beginning, anyways, is in close.

DR. FEDDERN: I agree.

MR. NEDIMYER: I would have agreed with both of those numbers for the depth and for the distribution of fishing effort.

DR. FEDDERN: But there are a lot of the charterboats, the dive boats that go out from the dive operation out here. They go out to the reef, and that is where they go.

MR. BLAIR: Okay, I think from discussions that we have, I think that we would agree that there is more information that needs to come about before we would support this going out for review. I will ask for some guidance. I think it would be appropriate for us to recommend or at least state our areas of concern that we could do as a recommendation to either Spiny Lobster AP or that the council through its processes consider these points. To that end, I would like to get the bullets that we think are appropriate for that.

Some that I have already is a process or consider a process or means of being able to modify the boxes or protect acroporids that are identified in future surveys that is not existing in a present aspect; or with new information on distribution; need for more complete information regarding how the boxes were drawn as well as specific information relating to the actual coordinates of all boxes; further coordination with law enforcement relative to enforceability of the plan. I will take any other comments of concerns that we may wish to express.

DR. VAN DOLAH: I am not sure how best to word it, but I think some effort to address the rope issue as probably not being as essential as the boundary area protection. I come back to the point that Jeff made some very good points about why that probably isn't worth the dollar cost to the fishery to implement.

MR. BLAIR: Do we know by any chance if that is a requirement of the biological opinion or is that – it is a requirement of the biological opinion?

DR. MacLAUCHLIN: It specifically says that there be a gear marking to identify spiny lobster traps.

MR. BLAIR: But it doesn't necessarily state a specific rope?

DR. MacLAUCHLIN: No, and this is the first trap or pot fishery in the South Atlantic that would have a gear-marking requirement.

MR. CRAMER: We have no problem with black.

MR. BLAIR: I will throw this to Ken and Jeff, and just in consideration have there been any discussions of the way the fishery can meet that intent by means other than a unique rope?

MR. CRAMER: Well, black is a unique color and the only reason they didn't want to use it is because some fishery up the coast had it, but our rope isn't going to interact with that rope, so why can't we just have a distinct black rope?

MR. NEDIMYER: I can't comment on the color of the rope. I do want to comment – I mean once you finish this discussion, but I also want to weigh in on the intentions of the Sanctuary and the Sanctuary Advisory Council over the next couple over the next couple of years. We are going to be looking at completely redoing the zoning plan for the Florida Keys.

So all these proposed lobster exclusion or protection, these zones that we are talking about right now are all going to be dealt with in that plan and there is going to be suggested changes, and we are going to take a really hard look at it, so just be aware that is being started as of yesterday's SAC meeting.

DR. BROOKE: Two comments. If the wording in that legislation says trap and not specifically rope, then why can't you just mark traps? It seems like it is a lot easier.

DR. MacLAUCHLIN: It is specifically the rope.

DR. BROOKE: The other thing is that I feel pretty strongly that if you are going to do this, you should find a way to include recreational fishermen. It is easy to penalize the commercial guys, it is easy to restrict them, but the recreational guys in the South Atlantic for a lot of different fisheries, they create cumulatively as much impact and those lobster guys – the recreational people are nuts and they don't know the reefs necessarily. They don't respect the resources. I think if you are going to do this at all, you should find a way of including recreational.

MR. BLAIR: I would just point out that I believe the ability to do that is in there through selection of Option B, which would restrict all spiny lobster fishers. At least it is recognized as being an option in there.

DR. FEDDERN: I was just wondering what other trap fishery is out there that could be confused with the spiny lobster fishery.

MR. BLAIR: I guess in some of this maybe there needs to be some other additional coordination with NOAA Protected Species. I don't know the flexibility, per se. Since it is in the biological opinion and they have to meet the requirements of the biological opinion, some of these things are based on that process.

If there is a way to either in some way reassess or open the conversation with them to see if there can be some adjustment in the biological opinion or modification of the specific requirement, that would be the – otherwise, I think it becomes a mandate that has to be met. Jocelyn, can you address that to any extent?

MS. KARAZSIA: From what I understand is that the federal action is the Snapper Grouper Fishery Management Plan, so stone crab we can't – NMFS isn't reviewing anything related to the stone crab fisheries because that is managed by the state, and this state's action doesn't create that federal nexus to trigger the consultation requirements.

Anything within the biological opinion that is a term and condition is what they have to implement through these alternatives. Anything that is a reasonable and prudent measure is

something that NMFS strongly encourages but isn't necessarily legally binding. I think these are all the terms and conditions that have been morphed into alternatives on how to implement those terms and conditions probably with also consideration of some of the reasonable and prudent measures.

MR. BLAIR: At this point I still have the three points regarding addressing a process to address essentially new areas of acropora that may be found after the establishment of this; a more complete description on the information on how the boxes were drawn, as well as groundtruthing of those areas; and further coordination with law enforcement. Any additional points so we can move on, please.

DR. VAN DOLAH: Yes, I think the most important one and probably should be the first one, if there is a consensus of this group – I am hearing a consensus – and that is that the committee would recommend Alternative 3, Option B as the preferred approach, with a better refinement of the boxes, and maybe you should take a poll here to see. I am hearing boxes are better than buffer areas, and I am hearing the 90 foot thing is not all that great, and I am hearing we have got to include the recreational fishermen as well as the commercial guys. That is pointing towards Alternative 3.

MR. BLAIR: Just with a kind of modification of that; I would rather explicitly state those points than state we propose a specific alternative, because I think there is other information that they need to address that may modify how those alternatives are written. We could definitely state that we feel that the issues should address both commercial and recreational fisheries; and that relative to law enforcement, the utilization of the box description, more rectangular or geometric definition of those areas to be protected would be a preferred process. Is that acceptable?

DR. FEDDERN: I think for the most compliance these areas need to be marked with buoys. Otherwise, they are useless.

MR. BLAIR: That is kind of in the law enforcement aspects, but we can add into that consideration of marking aspects.

MR. CRAMER: The problem with the marking, we went through that, is that someone has got to maintain the buoys and no one has got the money to do it. The Sanctuary doesn't want to maintain the buoys they've got.

MR. BLAIR: All right, that is understood. Okay, I will attempt to kind of draft this up a little bit. We are going to give Anna the list of recommendations we have got so far when I am running through this one, and we will see if we can go through and push those. I would like to get through that process first.

As time allows, we do have a couple other presentations that we did want to go over; but as it is eleven o'clock, I want to make sure we get that done and then we will use the available time to finalize the other presentation. Kari, do you have any other comments?

DR. MacLAUCHLIN: No, that's it.

MR. BLAIR: Thank you, I really appreciate your bringing this to us. Ken, do you have any other comments on this before we move to the next item?

MR. NEDIMYER: Yes, just two comments. One comment is again about the Sanctuary and the Sanctuary Advisory Council is going to be reviewing a lot of these, so keep in mind that there will be some modifications recommended to the Coral AP and to the South Atlantic Council boxes. Also, there is also a bunch of other species that are being proposed to be added to the list, which is going to add a whole new set of boxes. It is going to get really confusing.

I think whatever we do right now; I think we have to do something. Something has to be done by the National Marine Fisheries Service to come into compliance with the Endangered Species Act, but it is going to be very fluid and change and it is probably not going to look like this in two years.

MR. BLAIR: Right, I appreciate that. Do we know is there a time certain for when this action has to be done; does the biological opinion state a time certain?

DR. MacLAUCHLIN: Yes, just for the trap line color requirement is August 6, 2017, the opening of the lobster season. Then for the closed areas, there is not a timeline on that one, is there? It may be a 2014 then, because the biological opinion was published in 2009, and I think the five-year plan was what was going on. But this is expected to be I think reviewed at least March or June and submitted for final approval.

MR. BLAIR: Public review?

DR. MacLAUCHLIN: Submitted for final approval.

MR. WAUGH: If the council approves it for public hearing.

MR. BLAIR: You could possibly – if everything fell into place appropriately, they may review it at the March meeting for –

MR. WAUGH: For final approval.

MR. BLAIR: Okay. All right, let me get the file to Anna so we can start going through and finalizing wording on our recommendations and discussions from the meeting.

MS. MARTIN: Ken, do you want to stay on the line?

MR. NEDIMYER: What is the next item on the agenda?

MR. BLAIR: What we are going to do, Ken, is review the list of recommendations the panel would like to present to the council based on the information we received during the meeting. Hopefully, it will not be too long. We have talked about them a little bit, but it would kind of give you a flavor of some of the information that was presented over the meeting if you have got time.

MR. NEDIMYER: Yes, I will listen in; that is no problem. If I have to leave, I will leave.

MR. BLAIR: Okay, as a result of information that we heard yesterday on some of the mapping efforts and ROV excursions and so forth in the areas, we decided we wanted to make a recommendation that the boundaries be modified in light of that information. The first recommendation is recommend that the boundaries of the present CHAPCs – and I state the specific areas off Cape Lookout, the Oculina Daytona Area and Jacksonville Area; is that the Charlie-Charlie? Charlie-Charlie is up in the Cape Lookout area?

DR. ROSS: No, that is Jacksonville.

MR. WAUGH: Delete that Charlie-Charlie.

MR. BLAIR: I think it is going to be confusing, I agree. Recommend that the boundaries of the present CHAPC, Cape Lookout, Oculina-Daytona, Jacksonville Area be modified based on information and research that is identified, new areas of Deep Water Coral Resources, specifically the areas of HAPC Boundaries; modifications are to occur at the Oculina Line off of Daytona, Lophelia areas off Jacksonville.

I did have an aspect about the fact that we will add in the latitude and longitude, and get them from Steve, and a statement of the area to be bounded approximately by the 200 meter contour between latitude X to the north and latitude Y to the south.

DR. ROSS: C should read Cape Lookout off of North Carolina, not those boxes. Those are off Jacksonville.

MR. BLAIR: The third area would be the Cape Lookout areas, which is an area where we are extending the northern boundaries associated with information on new resources in that area, and then additionally to allow more information to be incorporated. Item D is other areas where multi-beam mapping and ROV surveys have indicated the presence of deepwater coral resources.

The intent of that is just to allow us to be able to – as we anticipate this will take a period of time to occur, that we be able to use any further information that may come forward and incorporate that in our consideration of the boundary modifications. The second is to recommend reconvening of the Oculina Evaluation Team to determine the status and accomplishments of the deepwater coral project and review membership as needed in preparation for the 2014 Assessment Report.

MS. KARAZSIA: Do we need to specify that, because I suspect we will need some council support for some logistics and meeting coordination and stuff. Do we need to specify that in the recommendation or is that sort of assumed?

MS. MARTIN: I think that is assumed. It was assumed with the previous reporting. Council staff will certainly be involved and instrumental in getting the ball rolling.

MR. BLAIR: I could say recommend the council reconvene if that is the will – or if it is okay as it is; it is okay as it is.

MS. MARTIN: I think it is just fine as is.

MR. BLAIR: Recommendation number three is to recommend to the Snapper Grouper and Habitat AP to consider and assess vulnerability of the blackbelly rosefish, commercial/recreational exploitation, inclusive of potential regulatory and protective measures; correlate people to work with the Habitat and Snapper Grouper APs to provide some specific background and support information relating to the concern.

Number 4 is; recommend that the council seek and provide support for continued investigation at the Snowy Wreck MPA to allow for specific targeted ROV/ HOV investigation for mapping. Do we need to have a reference to the archaeological importance or just say mapping?

DR. ROSS: It is important; but whether the council sees it as an issue or not, it would be useful.

DR. FEDDERN: I would just like to know if there is anything hazardous in that cargo.

MR. BLAIR: From what we heard yesterday, we have no idea, because we have no idea what the ship was or where it came from.

DR. FEDDERN: That is why we need to find out what the ship was and can determine that. It could be something that could be leaking out in the future that would affect the fisheries.

MR. BLAIR: We have environmental monitoring down there as well.

DR. LANEY: Gregg and I were just talking, and it is not inappropriate to leave the archaeological in there, because that is something that the council and NMFS have to address,. Anyway. In the process of going through the NEPA process, it is not inappropriate to leave it in there.

DR. ROSS: Good, I think it would be useful. It strengthens the need to find out what it is. The mapping is not so bad on that wreck from one point of view, but it is really better biological documentation, too, so mapping, archaeological and biological surveys. What we had a lack of data there is on the invertebrates and the fish.

MR. BLAIR: Environmental monitoring at this point unless you want to be more specific. The same thing with acoustical monitoring, leave it as such and potential for – this is a question that we want to resolve. Do we want to include this last potential for strategic and appropriate habitat enhancement activities in the non-reef regions of the MPA?

DR. ROSS: You could say assessment of potential, maybe. I think the issue there is that sort of implies the whole MPA, and what we were really referring to was the deeper end of it, the depth and the outer edge, so that would be the deep parts of that MPA.

MS. PUGLISE: I thought that we decided to not put that forward; that as the Advisory Panel for Coral, that it really wasn't our place to suggest enhancement of the fishery.

MR. BLAIR: Part of that was also the fact that it would also provide habitat has been shown in the Oculina areas and so forth, with appropriate material placement, that it could also enhance the deep sea corals, but obviously a lot of our discussion was the artificial reef issue, per se.

DR. VAN DOLAH: On another point, I think we should be a bit more specific on the environmental monitoring. All I heard Steve say was temperature and currents maybe.

(Remarks made off the record.)

DR. VAN DOLAH: Full package that does what?

(Remarks made off the record.)

DR. VAN DOLAH: Well, I got the impression that the whole reason for that is to improve some understanding on the snowies with regard to the acoustical monitoring.

DR. GILLIAM: Just a comment; I think the way that reads I am comfortable because it is investigating the potential habitat enhancement activities. We are not recommending, as I made clear yesterday in my feelings, but we are not recommending that they actually do something. At this point it is just investigating whether it might be something useful. That is how I read it, anyway.

MR. BLAIR: I think that is the point is to have it as an assessment and not as a mandate. Okay, moving on to recommendation Number 5: recommend the council seek and provide support for investigations to define the location and variation of the 8 degree thermocline, thermal limit for growth of Lophelia, along the western boundary of CHAPC. I know we need to define that area more explicitly and the investigation should include multi-beam assessment of the areas not yet assessed.

AP MEMBER: Not yet mapped.

MR. BLAIR: Not yet mapped.

MR. McFALL: Steve, wouldn't a better term or technically correct term be isotherm instead of thermocline?

MR. BLAIR: Yes, you are right, thank you.

DR. BROOKE: Being picky, but 8 degrees isn't the thermal limit for growth.

MR. BLAIR: We were discussing it relative to the fact that it was a consideration of a defining factor for its normal presence, so any wording you would like to have for that is fine. That is the intent.

DR. BROOKE: I know what you are getting at; I am just being picky here. I would prefer if we didn't put a temperature on it; just be more general, cold water isotherm or something, because they can live at 10; they might be in 10 degrees. We have seen them living at 9.5, so putting that delineation on them, we are not looking for 8 degrees necessarily, and we are looking for an anomalous cold water feature.

MR. BLAIR: The only aspect on that – and again to try to provide some understanding of it is we are going to have a definition of what cold water is.

DR. BROOKE: Okay, we will stick with 8 then, that is fine.

DR. ROSS: May I cut in on that; I think that is a good point. What we saw there that we didn't really mention yesterday was within the space of a couple of kilometers temperature jumped 20 degrees. It is that area of rapid increase, whether it is from 10 to 20 or 8 to 20 or whatever it is is what we would be looking for. Do you have a problem with that, too?

DR. BROOKE: Yes, because a rapid change is not the thing; it is the temperature itself. Lophelia has been seen growing; you know, the arm-waving upper limit for Lophelia growth is around 12 degrees. If we wanted to put a hard and fast number on it, we could go with the published field data of 12 degrees.

DR. ROSS: Well, I guess then, Steve, we would change that to 10 to 12 or just 12, Sandra? I mean, we used the 8 degree thing as a marker in the talk. Yes, but Sandra is right, they –

(Remark off the record.)

DR. ROSS: And instead of growth you just say thermal limit for Lophelia, leave out growth, because it is mortality and growth. And going back up, I was wondering – you know, following Bob's comment about environmental monitoring, I wasn't sure how much detail we needed to put in these but acoustical monitoring is equally vague. If we are looking for detail there, I think what we were talking about is acoustical monitoring for fish activity, passive acoustic monitoring for fish activity, biological activity.

MR. BLAIR: I would imagine that the council would appreciate as much specificity – I am sure that when they come to want to try to support this, vague things don't help them in trying to say, yes –

DR. ROSS: That still bears some explanation.

DR. BROOKE: I don't know if you want to include this, but we also discussed that acoustic monitoring in terms of vessel activity. I don't know if you want to include that since this is biological.

MR. BLAIR: Would it be the same system that could be utilized to both and not a separate system.

DR. BROOKE: Yes, same system.

DR. VAN DOLAH: Not to throw a ringer in this, but –

MR. BLAIR: We are going along so well, Bob.

DR. VAN DOLAH: I know, but both the environmental and the acoustical is really related to the fish and not the coral. Is it the point of the Coral AP to make those recommendations?

DR. ROSS: The environmental is not; maybe it could be both.

MR. BLAIR: Also, part of the Deepwater Coral Project and program with the research and monitoring program as well as to elucidate the biological interactions and so forth with the deepwater coral. Recommendation 6, and I didn't really get much on the wording in this, but the intent of this one is to recommend that the council coordinate with NOAA to ensure that various reporting products, such as those from SEADESC and Deep Sea Research Technology Program, be provided to the council for inclusion in their IMS as appropriate.

That can be more specific, more broadly spaced. The intent there is to make sure that the council is seeking and receiving these information resources that are being generated by NOAA, whether cooperatively or independently. Any input or comment or is that as is? We had some that we kind of threw up as potentials.

This is one that would be relative to Sandra's. This is the recommendation that she had listed at that talk. We kind of came out with a modification of that as a matter of fact, if I remember correctly, that the council would be collating the information associated with the original delineation of the Stetson-Miami Terrace HAPC for review at the next council meeting to assess the ability or the need in areas where any modification of those lines could occur. That is not really a recommendation, it is an action item back, so I think that this at this point in time would not be the – this may be the recommendation that comes after that meeting or similar meeting.

DR. ROSS: I was just trying to skip ahead and see what kind of recommendations were coming up, because back under 6, I guess where SEADESC is mentioned, I had a number of recommendations for SEADESC preceding in my talk. I don't want to go through all those again, but Andy Shepard has been a big supporter of that activity.

I don't know whether there might be some generic recommendation that the council consider to the extent possible continuing that project or various aspects of that project. Maybe we can leave it that generally and just interact with whoever is involved with it to see what is possible, what is affordable and what is most useful in that activity. Andy, do you have a thought on that?

MR. SHEPARD: We drafted also a letter from the council to NOAA to try to continue support for the continued analysis and creation of products from the South Atlantic cruises, so the Deep Sea Coral Program doesn't leave and we don't get to finish the things that need to be finished. That is a separate action. I don't know if it precludes or enables you to cover what Steve is talking about.

DR. ROSS: It is related, but the deep coral program has a much more limited focus on data from those cruises whereas SEADESC originally was looking at all kinds of potential data that related to deep sea corals or hard bottom habitat in deep water. It is a little more expansive from the council's possible support, but they ought to coordinate those activities and make sure they are not overlapping.

MR. BLAIR: I would suggest just adding a portion to the end of it which states and to the extent possible continue support and cooperation with those projects.

MS. MARTIN: I think that would be helpful. I know SEADESC is currently ongoing through the end of March 2012 under the 2009 Council Coral Grant, and so it has already gone through a second extension. I think the council's hands are tied as to how much longer they can extend that specific project under that grant. This could be timely to emphasize the importance that this needs to continue.

MR. BLAIR: As well as to develop a potential new agreement or method for that support.

MS. MARTIN: Right, correct.

MR. BLAIR: We also talked about – I think one of Sandra's recommendations was to have the council become, if you will, or serve as a single location and suggest obviously through its website for a one-stop shop, if you will, for the various regulatory components within the SAFMC Region, which would be availability of various regulatory area GPS files, as well as regulations. Again, I will take recommendations and suggestions for wording and smoothing that.

DR. ROSS: I don't think I was going to smooth the wording, but I wanted to add to that. We don't have time to discuss that here, but I know Sandra and I in looking through the website had a difficult time finding certain things or finding some things that might have been outdated. Websites, as we all know, are real difficult to maintain and keep current. Maybe added to that recommendation would be that with whoever else is appropriate, to take another look at parts of that website. For our committee it would be the deep coral or any of the coral parts to see how up to date or smooth they are. But often that goes along with making it a one-stop place to get the information you need, how to clearly note it.

MS. MARTIN: I would just add on to that. I agree, there are some issues with the website. It is a bit of a process right now. We are dealing with migrating to a new server and it has been an ongoing project for the past year that hasn't exactly gotten up and running yet. In the meantime we are left with a website that has a lot of problems from the back end of things.

What seemingly seems like a quick and easy update is much more difficult. Council staff, we don't have an IT person updating our website. It is kind of up to staff ourselves. We are very well aware of this issue. It is something we are working on. In fact, our Information and Education Advisory Panel are convening in the adjacent room over here and that is an item on their agenda.

They are discussing the progress and the development of this website migration to the new server that is apparently going to make everything much more efficient and a lot simpler for us and user friendly as well. It is worth noting, but it is something that council is well aware of and something staff is certainly frustrated with as well and well aware of, too.

MR. BLAIR: I think part of the intent here is that we know that the council's website is a significant resource of information; and if we want to optimize that process and have it even more so become known for the resources for the regulated areas and protection of the area. Another one that I am not sure that we had discussed yet, but this came on the result of Jocelyn's presentation relative to some of the potential activities within the HAPC that may be associated with approvals that are issued by other agencies, and explicitly that this one if I've got the acronym right.

DR. ROSS: It is actually BOEM now; they have changed their name again.

MR. BLAIR: Again, the intent here was to have the council attempt to coordinate with BOEM and any other agencies really; so that if there are leases or activities that are going on within a designated CHAPC, that those activities be reviewed for sufficiency of appropriate habitat mapping and resource characterization, monitoring and assessment plans and installation. I said operation, but really installation and removal plans for the points of specific concern.

MR. SHEPARD: Yes, I agree with you that I thought this was a wider thing, including Corps of Engineers. What we should probably do is generalize a little bit with federal agencies or add the navy, or add the Corps of Engineers and add BOEM, add these other things that are going to affect the CHAPC for their activities.

MS. KARAZSIA: Well, initially we were talking about making a revision to the Energy Policy Statement to be more specific, but I think the scope of activities that we have talked about at this meeting has been beyond just renewable alternative energy. They have included military activities; they have included civil work, Army Corps of Engineer activities.

Then I also wanted to point out that at our workshop in Wilmington that we had in 2009, our Deep Sea Coral Prioritization of Mapping and Exploration Needs, one of the needs that was identified was the development of protocols to help guide industry and agencies for what type of – how to do the mapping and biological resource surveys, and that is something that hasn't been done yet. We have done some work with John Reed and we kind of have a starting point that is in paragraph form, but that would be something that would be helpful as well.

MR. BLAIR: To add on to this?

MS. KARAZSIA: If it is not too late to add on to it.

MR. BLAIR: That's why we are here.

MS. KARAZSIA: I mean, the way it is worded in the plan from the Wilmington 2009 workshop, we can maybe just copy and paste that language just to move that further along.

MR. BLAIR: I think associated with that, there was at least a statement that there may be a need for consideration for review of the council's energy policy in critical management areas that we didn't really make that recommendation, it was a note that I had. Was that something we feel is a timely comment now or if there really is more information or activities that we need to assess? Is that a recommendation we feel we want to make or do we just hold that until other issues may come forward?

MS. KARAZSIA: I know there has been talk about the council staff coordinating some revisions to that policy, so it seems ripe for discussion given the discussion we had yesterday. If we can encourage that to move forward, that would be helpful.

MR. BLAIR: What is the energy policy? We don't have to say in the management areas; it is going to be your policy regardless of where it is, right?

MS. KARAZSIA: Yes, in one of the council's policy statements, energy policy statement.

MR. BLAIR: Should it be kind of preferenced with based on recent interests and alternative energy-based activities in – this will be specific since it is the Coral Panel. That will be recommend that the council review and revise as necessary the council's energy policy statement based on recent increased interest in alternative energy-based activities within the Coral Habitat Areas of Particular Concern.

Then just regarding the orange cup coral, we had a discussion as to, one, if wanted to do any action whatsoever. A couple of the other suggested potential alternatives for action was to remove the orange cup coral explicitly from the FMP. There was another suggestion for exemption of the zero allowable catch, but this would also require management of it and therefore establishment of the various fisheries metric such as allowable catch limits, maximum sustained yield and so forth.

Recommend support of investigations and research of tubastrea and its potential threat to the coral ecosystem, restoration activities, and economic impact of its presence. Then finally another that was put forward was to basically in an amendment that goes forward is to have a statement that the Coral FMP is not intended to nor does it include management of exotic species. Those are things that we talked about as potentials for recommendations or actions that we could. Does the panel have a preference for moving any of those or any suggested recommendation to the council at this time relative to exotic species, exotic corals and specifically the tubastrea?

DR. ROSS: Considering everything that was said about that and the fact that the comments were all over the board, I would almost think that bears additional discussion later at another meeting. It seemed like there wasn't enough information on the implications of making one choice versus another. At least that is what it seemed like to me, and we didn't have a whole lot of discussion on it.

MS. MARTIN: I would echo that as well. I think there would be some hesitancy from the council perspective to make any changes here unless more rationale is provided. What they have

so far includes Florida FWC's stance on the enforcement issues of allowing harvest, and also the limited information that Tonya Shearer from Georgia Tech provided.

That in a nutshell sums up what we have on the orange cup coral at this point. Again, perhaps future changes could be considered, but I think the first step would be to provide an avenue, maybe at the next AP meeting for having some more information on the table for consideration of any changes.

DR. GILLIAM: I guess my point is kind of the way Anna even described or went with her comment using specifically orange cup coral in her comments. The last bullet I think is true; we are not intending to include exotic or invasive species in a management plan, but I think my feeling yesterday and comments yesterday were that it is a lot of work but we need to address it as these come up.

I don't know if we want a blanket statement that as something is identified like the orange cup coral, and the next one is the blue cup coral, I don't know, but that we have to address them in that manner was my comment from yesterday.

DR. BROOKE: I agree with Dave; I think they should be certainly taken on a case-by-case basis, because if you make a blanket statement the next thing you know there is going to be an exemption that causes problems. Tubastrea is easy to recognize for enforcement purposes. I think I agree with the general consensus it seems that no action is the best alternative at this point since we don't know.

Henry made some good points yesterday about potential problems of allowing harvest. We just simply don't know what the impact may be. My preferred option would be no action pending further recommendation. I feel that exempting zero allowable catch, I just don't see using our resources to manage this fishery, and I think that is where that last statement comes from. In this case I don't think that the third option is a good one. I think no action pending further research would be my preference.

MR. BLAIR. From here then we are either no action. Is there any consideration for recommending that the council support investigations in the research of tubastrea?

DR. FEDDERN: I would definitely support finding out more about the coral and why it has established on natural bottom in the Bahamas and in other areas and why it isn't here. Maybe there is some biological reason for it, but then again I have a feeling it could be just that the artificial habitat was easier initially. I understand that the attachment of coral larvae, the substrate has to go through a biological procedure before it is suitable. That may be the case in this one as well.

DR. BROOKE: My comment was that looks like the council – does that imply funding research? That may not be necessary. It may be just a literature search or it may be at the form of funding, but the council should certainly recommend supporting further information before making a decision. If you have got funding for it that is great, but I would hesitate to lock the

council in to providing – into wording that provides funding for this pending any decision. I think it can be gotten in another way.

MR. BLAIR: I think that the intent of that would be to provide the council the ability to, if it had funds and availability to do that. If it is really something as a matter of fact that we as an advisory panel, amongst our expertise feel that we can come up with a white paper associated with it, that might be a good start. Maybe that is our action item is to develop a white paper and in consideration of that I can send out an e-mail requesting individuals interested in participation in the development of that.

MR. NEDIMYER: I think we should not sleep on this thing forever, because it is going to find its way onto the reef, and we still don't really know what it is going to do on the reef. I was just down in Bonaire a couple weeks ago and it is all over the reef there, and it is competing with native corals. It is becoming a pervasive coral. Do we want that here; I don't know. The longer we wait the more difficult it will be to do anything about it, if we want to do anything. We should be looking into it.

DR. GILLIAM: Ken, this is Dave Gilliam, when you were down there, was there any discussion about how they are dealing – do they have any information that we should get in terms of how they are dealing with the species?

MR. NEDIMYER: You know, I didn't ask. I didn't really talk to them about that because we were down there talking about acropora. I will be talking to them again and I will find out and see what they are doing. It didn't seem like they were doing anything about it. They are out nailing lionfish, but it is almost like they have given up on the cup coral because it is everywhere.

MR. BLAIR: Unfortunately kind of like we are doing with the lionfish. I agree with you, Ken, and I do think it needs action. Seeing that we are coming into the home stretch here, that is the list of items and recommendations that I had. Is there any that I missed or that others wish to propose?

DR. VAN DOLAH: Just two; one would you go up to number one, please? In the edit, the c.c., the Navy sites got deleted, is that intentional?

MR. BLAIR: Just the reference to the literal navy jargon. It is meant to be explicit that those are the areas of concern.

DR. VAN DOLAH: And second, just to put a placemarker under whatever would be the last one to make sure we capture the discussions this morning related to spiny lobster areas. We haven't crafted any of that text, per se. You have it kind of in rough format.

MR. BLAIR: I am just going to actually put that as part of the – I was going to have that as kind of a narrative stating the specific aspects that we agree that the utilization of the geometric box descriptions and inclusion, or should we say exclusion of all spiny, so that can get actually taken

up in a narrative aspect, just stating that that is our feeling and sense that those are appropriate actions.

DR. GILLIAM: I think also I would recommend that there needs to be a thought or an inclusion of a mechanism that these boxes be evaluated in terms of removing if there is no longer resource or moving because of the nature of these – especially acropora cervicornis, the nature of that species that a box today may not be a good box tomorrow.

MR. CRAMER: That is a nightmare for enforcement.

DR. GILLIAM: Yes, but still why enforce something that no longer—

MR. CRAMER: I agree with you, that is an issue, but that is getting infeasible for fishermen to deal with.

MS. KARAZSIA: Is that addressed in A, kind of, and also the groundtruthing and habitat mapping concerns? I mean, A could be expanded maybe to address that concern?

MR. BLAIR: Yes, definitely that is the intent there. Otherwise, all they are going to be doing is spatially protecting specific areas in the hopes that Acropora A, will stay there, and once they have gone from there, there is no additional protection for the acropora, which I don't know is what the intent of the biological opinion is or the intent of the Endangered Species Act.

(Remark made off the record.)

MR. BLAIR: We know that some were but not all. We are not sure if all of them were groundtruthed? I know that Ken said that he is familiar and he has been into a number of these areas, but the areas, obviously if you are going to draw a box, you have got to make sure that the organism is there for protection.

DR. GILLIAM: Again that might be captured in A.

MS. KARAZSIA: Yes, I am okay with that being captured in A. But also in A –

MR. BLAIR: Well, initially they are going to come up with a set of boxes. We want to make sure that the resources are there that need protecting in those initial boxes. I think that is a separate – that is a point forward aspect, as things change how are you going to address those changes?

MS. KARAZSIA: Then you are talking about changes, and I don't know if there is any sort of just baseline assessment of what is there, so that is needed before you evaluate changes.

MR. BLAIR: Okay, how is that; is that about where we would like to be? Relative to the Spiny Lobster Amendment 11, recommend that the Spiny Lobster AP review the draft of the Amendment 11 to the Spiny Lobster Fishery Plan to develop or define a process to address/protect acroporids based on new changes or based on changes in distribution.

MS. KARAZSIA: We are just recommending that it go back to the Spiny Lobster AP?

MR. BLAIR: Anna, isn't that the most appropriate?

MS. MARTIN: I think from the Coral Advisory Panel, that is an appropriate recommendation to make to the Spiny Lobster AP.

MR. BLAIR: It is kind of what Bob said, should we be explicit at the front to say that as presently written we feel there is insufficient detail for this to go forward at this time?

MS. MARTIN: I think you could state that based upon the resource; not necessarily the spiny lobster fishery but information contained in the document from the discussion seemed to be inadequate.

DR. VAN DOLAH: I think you should recommend the Spiny Lobster AP work with the Coral AP and review the draft of the amendment.

MS. KARAZSIA: I think they need some of the coral expertise and we need some of the Spiny Lobster Fishery AP intel.

DR. BANKS: How much time do we have on this? I am coming to believe that we are going about this all wrong. It is twelve o'clock, but do we have time to think about this some more and talk about it? This whole approach to me is wrong.

MR. BLAIR: From what I am hearing, this whole approach to the development of this amendment is wrong. Let me correct that. It has not seemed to follow the normal process that has been involved in council development for amendments. I think that what we are seeing is the affects of that lack of following the process.

DR. BANKS: Well, I'm not thinking about process; I am thinking about philosophically I think there is a better way without regulation to do this.

DR. GILLIAM: NOAA, their biological opinion has –

MS. MARTIN: Right, that is the issue here, the biological opinion requires the National Marine Fisheries Service and ultimately the council to do something to address whatever they call those requirements – I can't remember the language, but to implement reasonable and prudent measures to address the biological opinion requirements. It is not an option that they can't – no action is not an option.

DR. BANKS: I am not suggesting no action, but I think there is a better way to protect the acroporids from at least the commercial fishermen based on what Jeff is saying, it is almost without regulation, but with activity, action. I mean, if these guys know where the hard bottom is, they should be protecting hard bottom from damage, not just acropora. I know the law is different.

If you guys could look at your chart plotter and see where hard bottom was, just simply have it mapped out – it is already mapped out; all we have got to do is work with the manufacturers to have charts, applications available on a chart plotter. It is not expensive. You said you don't want to lay traps on hard bottom, and I believe that.

If you know where it was, you are not going to lay them there. If these guys know where it is, they are going to generally choose not to lay traps on it, they are going to lay it on sand if they know definitively where sand is. We can give them that and it can be done with the manufacturer's cooperation.

You know the problem with acropora as David said it and everybody has said it, it moves around. It is like when you monitor it; fixed point monitoring doesn't work well; you have got to use a landscape approach. We can't keep changing this regulation every year to accommodate acropora moving all over the place.

Let's assume that all hard bottom is habitat and let's provide the information of where habitat is to the lobstermen. They will choose, based on what Jeff said, not to lay traps on it, by de facto protecting it from all the corals and not just acropora. I don't know how that fits in anything or if anybody even agrees with me; but I figured if we start doing a moving target on where you can and can't fish, it is never going to work. Nobody is going to maintain it.

MR. BLAIR: Part of this that comes in consideration I think is trying to get more information on what their process was, what is their rationale? As I have added into the first aspect that the Coral Advisory Panel – I say offer; I will use any other word you want me to use to work with the Spiny Lobster to revise the draft, and we think that it should be a joint – I agree that it should be a joint document based on input from both the Coral Advisory Panel working with the Spiny Lobster Panel.

DR. VAN DOLAH: Ken, just a comment to your thing, I don't think that is enforceable. Think about the outline that you would have to draw to protect all hard bottom; it is bad enough getting boxes that protect most of it.

DR. BANKS: No, I am not talking about enforcement; I am talking about like a BMP almost. It is not going to prevent –

DR. VAN DOLAH: They are looking at this amendment to be an enforcement approach.

DR. BANKS: I know, but they are doing something, even if it is wrong. I mean it is like in the context of let's do something. Even if it is not going to work, we have got to do something. How are you going to enforce protecting acropora with fixed points and fixed boxes? It is like Dave said; it doesn't even fit in with the life history of acropora. Maybe it works for Oculina, but even that moves around.

DR. GILLIAM: Maybe our recommendation is just simply at this point the amendment needs so much work, that the recommendation is simply that all parties need to continue to work together

to advance this amendment. I don't know, maybe more general is appropriate at this point rather than trying to come up with specifics.

MR. CRAMER: To me it was like, all right, we need to do something. What can we say we did? Well, let's tell the commercial guys they can't put traps there. There, we did something. You know what I mean? There is so much other stuff going on that is a stressor to the acropora corals and they kind of pick us like we are the minor, minor, way down the ladder but, you know, they can take care of us pretty easy. That is what the fishermen feel like.

MR. BLAIR: Right, but at least in this one we are doing it with everybody and not just you guys. Our recommendation would be with all fishing within the protected areas and not just commercial fishermen.

DR. ROSS: Steve, I think what you wrote in A. there is really the rationale for the recommendations of B through D, instead of the recognition itself. I would just take it and put it up right after 10; right before all of that, and then start with the recommendation, or either way it doesn't matter.

MR. BLAIR: And probably at this point, as long as we have the bullets in here, this is something that we could still take the next day or two to revise, send out to the Coral AP and get everybody to sign off that it is okay; any final tweaking and then we can have it ready to go forward to the council at the next meeting.

MR. CRAMER: Can we add in anything about the trap rope thing, like it is not going to have any biological positive or negative effects to the corals, and possibly black would be a great color?

MR. BLAIR: The only thing, Jeff, that I think I would need guidance for – and I said before I am not sure the effect – if it is specifically stated in the biological opinion, my understanding is that the biological opinion would have to be modified for that to be allowed. That is why it is not so much a – I don't know that we can make that type of a recommendation. I am trying to figure out – I don't disagree with you.

(Remark made off the record.).

MR. CRAMER: Is it appropriate to ask that Action Item 2 be reevaluated? Does NOAA have that – does that process exist that based upon continued information, that an action item is reevaluated?

MR. BLAIR: Gregg, do you know if it would be appropriate – we are speaking about the line marking and trap marking for the spiny lobster – would it be appropriate for the panel to recommend to the council it seek – I don't know, it is re-consultation, but essentially that is what it may be, alternative measures for the trap marking as specified in the biological opinion?

MR. WAUGH: Yes, as I said before, the APs can make any recommendation they think is appropriate and then it will be up to the council to deal with it as best they can. Yes, if you think

it needs to be changed, then make that recommendation. They modified the biological opinion dealing with the timing requirement for the rope, so they did go back and make that change. We are trying to understand how this process for developing these biological opinions works as well. We are trying to get a presentation at our December council meeting, because the process is not clear in our minds, either.

MR. GILLIAM: Jeff, I guess we kind of addressed your concerns, maybe a first step in this process.

MR. BLAIR: Essentially what that would be is we recommend the council seek to review and assess the need and appropriateness of the trap marking as defined in NOAA. The intent there would be just that, is to have them consider to bring that back into discussion. We did not necessarily get to give a couple reports.

One is on the U.S. Coral Reef Task Force Meeting and the other is on MARES. We will put that on the agenda for next. You may well get a little bit of information as well from that. Perhaps we can put up a quick synopsis. We know that the U.S. Coral Reef Task Force Report was going to be extremely short.

But the other aspects that we can do, we will try to send out an e-mail with some background information on that, especially for those that have had to leave and are not able to be here. Is there any other additional business that we need to conduct at this time? Now one of the issues – and we will follow up with this on an e-mail since a number of people have already left, regarding some future changes that may occur. Any other business?

MS. MARTIN: We have run out of time and lots of folks have departed but Brandon Fisher with the Coast Guard is here and wanted to brief you real quickly on enforcement interactions with.

LT. FISHER: Yes, I know the peril of holding you all up further from lunch, but I thought you would want to hear this. I am over at the Education Outreach AP, so I am not on your AP, but I just wanted to let you know of some stuff we are doing at the Southeast Regional Fisheries Training Center regarding corals.

We spent the last year doing a bottom-up revisiting of our entire enforcement training curriculum for our officers that are going out there. Early on, one of the biggest deficiencies that we found was in our coral training program. Going forward with our re-launch in April, that module on the Coral FMP is going to expand from fifteen minutes, which is what they get now, to a full hour.

We have also, working with Erich Bartels at Moat Marine Lab, Joanne Delaney down at Florida Keys Sanctuary, and the entire staff over at Fort Johnson – they have been great in hooking us up with a live officer reef tank identification tank that is in our classrooms. We right now have got our first species of acroporids in there.

We have got some gorgonians coming in next week. We have noapara and everyone is doing great in the tank. It is for most of our officers that come in. A lot of them, when we start off that

module, we ask them coral, plant, animal or rock, most of them can't answer that, and you have got 15 minutes to take them from there to being able to identify coral and all the regulations that go with it.

Part of that I say it is like when we have the dead coral skeletons. When you show it to them, I tell them it is like showing somebody who has never seen a dog before a skeleton of a dog and then telling them to go from that and go identify a real Great Dane from a Collie. We are trying to get real coral in there and real live rock that is set up in scenarios and situations that is going to be like what they would see in the field.

We have finished our draft of completely redeveloping the job aide. I understand that there may be some – you guys are trying to get some enforcement guidance down for state people. We would be happy to share what we have done so far. For your benefit, hopefully you will see a much better product as far as the knowledge and tools that are available for boarding officers going forward. I am happy to entertain any questions. I know you guys are hungry though, so I won't take it personally if you don't have any.

MR. BLAIR: Thank you very much. With that, we are adjourned.

(Whereupon, the meeting was adjourned at 12:20 o'clock p.m., October 26, 2011.)

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PLEASE SIGN IN

So that we will have a record of your attendance at each meeting and so that your name may be included in the minutes, we ask that you sign this sheet for the meeting shown below.

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October 25, 2011
N. Charleston, SC 29418

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