SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

CORAL ADVISORY PANEL MEETING

Hilton Garden Inn
North Charleston, South Carolina

May 9-10, 2012

Summary Minutes

Coral AP:

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Kimberly Puglise
Dr. Steve Ross
Margot Stiles
Dr. David Gilliam, Vice-Chair
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David Cupka
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Kim Iverson
Dr. Kari MacLauchlin
Roger Pugliese
Anna Martin
Myra Brouwer
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TABLE OF CONTENTS

Call to Order, Chairman Steve Blair…… 3

Approval of Agenda…… 4

Approval of September 2011 Coral AP Minutes…… 4

Overview of SAFMC Process and Role of Advisory Panels…….. 4

Update on Spiny Lobster Amendment 11…….. 11

Consideration of Lobster Trap Limitations Areas in Florida Waters……. 18

Overview of Department of Energy Report…… 19

Update from NOAA Fisheries Habitat Division……. 31

International Symposium on Deep Sea Corals Presentations:
Known and Probable Areas of Deepwater Coral/Sponge Habitat…… 44
Shallow Jacksonville Lophelia Site…….. 50

Update on Navy Activities..... 57

Research in South Atlantic and Gulf Over the Last Ten Years…….. 66

Overview of MARES Program……... 88

Overview of SE Florida Coral Reef Initiative…… 99

Discussion of Comprehensive Ecosystem-Based Amendment 3…… 106

Nominations of Chair…….. 138

Other Business……. 141

Adjournment……. 141

The Coral Advisory Panel of the South Atlantic Fishery Management Council convened in the Hilton Garden Inn, Charleston Airport, North Charleston, South Carolina, Wednesday morning, May 9, 2012, and was called to order at 9:00 o'clock a.m. by Chairman Stephen Blair.

DR. ROSS: (Recording started here) Professor at UNC-Wilmington, working on deep sea corals for the last ten years or so.

MS. PUGLISE: Kimberly Puglise; NOAA Center for Sponsored Coastal Ocean Research. I manage the Mesophotic Coral Ecosystem Programs as well as the South Florida Program.

MS. STILES: Margot Stiles from Oceana. I am a scientist there working on reef and fisheries conservation. I'm filling in for my boss while he's on sabbatical on the beach.

DR. GILLIAM: Dave Gilliam; faculty, Nova Southeastern University, Coral Reef Assessment Monitoring and Restoration Studies.

MR. BLAIR: Steve Blair, presently the Chair of the Advisory Panel and with Miami-Dade County's Permitting, Environment and Regulatory Affairs Department. I work with impact assessment and reef assessment in shallow water reef systems off of South Florida.

MS. MARTIN: I am Anna Martin, council staff. I am staff lead of the Comprehensive Ecosystem Amendments for our council, and I also work with you, the Coral Advisory Panel. I've recently assumed our Shrimp Amendment so I work on those as well with input from our Shrimp and Deepwater Shrimp Advisory Panel. I wanted to thank you all for being here.

MS. IVERSON: I'm Kim Iverson. I'm the Public Information Officer with the council.

MR. REED: My name is John Reed. I'm a research professor at Florida Atlantic University and worked on deepwater reefs and mesophotic reefs for about 35 years.

MS. KARAZSIA: Jocelyn Karazsia; NOAA Fisheries Southeast Region. I work on Essential Fish Habitat Consultations on the east coast of Florida and the U.S. Caribbean.

MS. SEMON-LUNZ: I'm Kate Semon-Lunz; I'm with Florida Fish and Wildlife Research Institute. I am the associate research scientist for the coral program. I've been doing a lot of work lately with federal and state listed species.

MR. CRAMER: My name is Jeff Cramer; I'm a commercial fisherman from the Florida Keys. I'm on the board of directors Organized Fishermen of Florida and Florida Keys Commercial Fishermen's Association as well as a member of the Florida Keys National Marine Sanctuary Advisory Council.

DR. ALEXANDER: I'm Clark Alexander; I'm a professor at Skidaway Institute of Oceanography and the director of Georgia Southern University's Applied Coastal Research Lab. I'm a marine geologist by training and got involved with this group initially as part of the bottom

mapping working group. I've been involved in this group particularly because of an interest in Deepwater Coral Habitat and its adjacent environments next to Georgia and the southeast.

MR. BLAIR: Okay, thank you. I'd also like to recognize a few individuals from the council that are with us today; our Chairman of the Council, David Cupka; and Gregg Waugh, the Deputy Executive Director; as well as Duane Harris, Chair of the Ecosystem Committee and council member. I appreciate both your presence and support for the panel. Thank you.

I'd like to start with review of the agenda and ask if there are any changes or additions or modifications of the agenda that are desired at this time. Hearing none, we'll approve the agenda as it is. Likewise with the briefing materials, the minutes of the September 2011 Coral AP meeting was distributed for review. Are there any comments or changes to the minutes to the September 2011 meeting? Hearing none, we will accept those as approved.

One of the things that we're planning to do through the course of today is kind of give – in the 2011 meeting we had comments and considerations of asking for the council to kind of provide us a review of some of the information that has brought about the recommendations and changes that have occurred to date as well as some of the roles of the panel.

Additionally, we have information that we'll be discussing probably tomorrow relative to potential recommendations for actions or modifications of Coral Habitat Areas of Particular Concern. Much of today is really presenting information that will serve as background, kind of reminding us that getting us all back to the same page and same level of information as we move into tomorrow's meeting.

Much of today is going to be background and informational aspects of it. We'll also have reviews of some information for activities that are ongoing particularly in South Florida relative to a couple management processes that are being undertaken or have been ongoing for the benefit of coral reef systems. With that, what I'd like to do is we'll start with Kim, if you would want to go ahead. Kim will be speaking to us on an overview of the council process and the role of the advisory panels.

MS. IVERSON: Okay most everyone has been on the advisory panel long enough that they're fairly familiar with the process, but I thought it would be good to go back and maybe just kind of provide you with an overview of how the advisory panel process works, how it's integrated into the council process and ultimately into management decisions.

For those of you have been with us for long, long time, please bear with me as I go through this, but hopefully you'll find this review helpful. As you know, the councils were formed in 1976 going back to the Magnuson-Stevens Fishery Conservation and Management Act. There are eight regional councils in the United States and they are charged to conserve and manage federal species within their jurisdictional boundaries.

The councils develop fishery management plans and subsequent amendments. This is the map outlining the eight regional management councils starting with the yellow in the northeast; the New England Council, the Mid-Atlantic Council, of course, the South Atlantic Council coming

around in to the Gulf, feeds into the Gulf Council and shares some fishery management plans as you're aware of.

On the west coast, the Western Pacific Council covers the California western U.S. Coast. The North Pacific Council is primarily Alaskan federal waters off of the state of Alaska, and then the Western Pacific which includes several of the Western Pacific island jurisdictional boundaries; Guam, Marianas, American Samoa and the Hawaiian Islands, to name a few.

As you can see, there is quite a large area that is controlled through the eight regional management councils. Back here in the South Atlantic the jurisdictional boundary begins with the North Carolina/Virginia Border and extends southwards to the Tortugas. There is a range in the EEZ off the South Atlantic from 3 to 200 miles.

If you get off South Florida, of course, you're familiar with Bahamian jurisdictional boundaries that move off the southeast coast of Florida. The management plans; just a quick overview of the plans that the South Atlantic Council is responsible for: the coastal migratory pelagics that includes king and Spanish mackerel, coral, which everyone is familiar with here at the table; Dolphin Wahoo FMP, golden crab, habitat.

We actually have a Sargassum FMP, and some of you were here when that fishery management plan was developed. There was a limited harvest of sargassum off the coast of North Carolina, and the council developed an FMP for that management with very, very strict harvest requirements.

We have the shrimp fishery management plan and that includes both penaeid and deepwater shrimp; snapper grouper, which is our largest fishery management plan; and then spiny lobster, which is shared with the Gulf and a fishery ecosystem plan. Who are these people; who sits on the council? Congress set up the regional management councils to have representation at the regional level.

That includes both recreational and commercial fishermen. Each of the state marine resource agencies have representatives, and then we have federal partners which include the Coast Guard, the U.S. Fish and Wildlife Service, NOAA Fisheries, the Atlantic States Marine Fisheries Commission and the Department of State. NOAA Fisheries is the only partner that has a vote on the council. There are 13 voting members.

Our council members include obligatory and at-large members and the appointments from the commercial, recreational, and environmental sectors are nominated by the governors. The governor submits three names for appointments and the appointments are ultimately made by the Secretary of Commerce. The members serve three-year terms and they can serve a maximum of three consecutive terms.

We're fortunate today that we have our Chairman here with us, David Cupka; and our Vice-Chair is Ben Hartig, he is a commercial fisherman from Hobe Sound, Florida. The council committees, those are where the work is basically done during our council meeting. If you've

had an opportunity to come and sit through a council meeting week, the council committees meet at the beginning of that meeting week and those are a list of the committees.

There are species-specific committees as well as committees dealing with administrative issues. Also we have an Outreach, an Information and Education Committee and Advisory Panel Selection Committees that have taken care of appointments to the advisory panels or make recommendations.

There again these committees are made up of council members and the committees take the input from the advisory panels and in turn, similar to the motions that you will make here at this meeting today, provide recommendations to the full council. The full council is responsible for making the ultimate decisions and those are done through votes and council motions.

The council operates, of course, under policy mandates, the Magnuson-Stevens Act being the primary driving force behind the actions of the council. There are ten national standards that the council must abide by. In 2007 the Magnuson-Stevens Act was reauthorized creating a system of accountability measures and annual catch limits that have to be followed by each of the regional management councils.

There is also the National Environmental Policy Act and that mandates that any management decision, there has to be a series of alternatives. You can't simply say this is what we want to do and this is how we want to do it. NEPA says, no, you have to have options. You have to have alternatives, everything ranging from the original no action, that we're not going to do anything, to having in some cases 2, 3, and in some cases up to 12 different management alternatives.

Then there is the Marine Mammal Protection Act, the Endangered Species Act and other policies that you are all familiar with. In developing the management plans on the amendments, there are considerations that have to be taken into account when developing the policies. There are biological needs, the economic impacts and the social impacts.

The council staff has a technical staff that has biological experience in developing these amendments and amendment alternatives. The economic impacts are assessed through a partnership, of course, with the National Marine Fisheries Services Office. There is a staff economist, Brian Cheuvront that serves on our staff, and we have Kari MacLauchlin here who will be talking with you a little bit later this morning, who is our relatively new social scientist.

We have staff on board to help develop and guide the council as they go through this amendment process. The biological data includes both fishery-dependent and fishery-independent data. The fishery-dependent data comes from the fishermen themselves and it includes logbook data collected from the commercial, for-hire, charter sectors and port agents that go from dock to dock and collect information from the fishermen. Then the Marine Recreational Information Program or MRIP that was formally known as the Marine Recreational Fisheries Survey and Statistical Survey, MRFSS – we love acronyms. We try not to throw those out very often, but you'll hear reference to MRIP and MRFSS as one in the same. It is the revised and updated version of the old program.

Fishery-independent surveys such as the MARMAP cruises that collect information on finfish off the southeastern coast and other research into habitat and coral issues that you're all familiar with – I just wanted to touch on these very quickly. The economic and social impacts must be included in any amendment. There are analysis that are done, what are the economic impacts on each of the options that are developed and how would those management measures affect the communities from a social standpoint.

Each of those impacts and analysis has to be included in every time there is an amendment to any of the fishery management plans done. Each council in the country also has a Scientific and Statistical Committee. These are the folks that review the FMPs and amendments and make recommendations to the council on acceptable biological catch and overfishing levels.

A lot of times their decisions and recommendations are based on the stock assessment process known as SEDAR, the Southeast Data Assessment and Review Program. Again, lots of acronyms that we put out there, but the SSC plays a vital role in making the recommendations and setting the standards from which the council can make the management decisions, including those ABC levels.

Public participation is key. Back in 1976 when Congress created the councils, that was the intent is to allow each of the regions to have public participation and recommendations into the council process. It is mandated. It is not an option, it is mandated under the Magnuson-Stevens Act and under NEPA.

It is essential to the council process in the development of these management plans and amendments. There are 11 advisory panels; you are one of 11. There is also Dolphin Wahoo; our Information and Education I mentioned earlier that helps guide me in making decisions in our committee on Outreach and Education; mackerel that includes the king and Spanish mackerel and coastal migratory pelagics.

Occasionally with these joint plans they will meet jointly with the Gulf of Mexico's Advisory Panels. It makes for a very interesting meeting. And then on down to our Deepwater Shrimp, Snapper Grouper; and Spiny Lobster Advisory Panel, again that is shared and a management plan that is shared with the Gulf of Mexico Fishery Management Council.

Who are these advisory panel members? Well, look around the table. I think we saw a good diverse group of folks that introduced themselves this morning just for the Coral Advisory Panel. We have recreational and commercial fishermen that serve, for-hire fishermen, business owners, people that have an interest in the fishing business, representatives from environmental organizations, scientists such as yourselves as you sit around the table, and fishermen, too, and others that are simply interested in fisheries issues.

The duties and objectives are outlined in the council's SOPPs and the duties are very specifically outlined in continuing to advise the council in the assessments and specifications contained in the fishery management plan amendments in regards to the capacity and extent in which fishing vessels will harvest the resources; the effect of the measures on the local economies and social structures; potential conflicts between user groups, and sometimes that is a guiding force behind

the development of some amendments that the council has to deal with are these user conflicts and user groups and enforcement problems particular to each fishery.

The council does have a Law Enforcement Advisory Panel with representatives from each of the state agencies. There again the advisory panels provide recommendations through a formal report to the appropriate council committees. You would report to the Ecosystem Committee. There is not a formal Coral Committee; it is the Ecosystem-Based Management Committee.

These AP recommendations are considered by the committee in development of the FMPs and amendments. One of the things that you do that you probably don't realize is that you act as an information source for me. If I get a call from a reporter, if I get a call from someone that is doing an article on corals or deepwater corals, I can send them to you as the experts.

They have sometimes called folks at this table and had interviews and worked closely. We've had an opportunity to work with some of you on projects in the past and raising public awareness of deepwater corals, shallow water corals and coral management through the council. There is additional input that the council receives, not just from the advisory panels but also from public scoping meetings.

Before the council makes a decision to move forward with a fishery management plan amendment, they hold scoping meetings to kind of put options out there on the table and say what do you think about this? As you go through that process, they will take recommendations that are received from the scoping process, move forward with developing a public hearing document and formalize those management alternatives and have some further analysis.

The council also takes written comments. Our council takes written comments in the form of hard copies, as well as any time there is an amendment there are e-mail addresses where you can submit e-mail comments. In the broad picture the fishery management plan and subsequent regulations is a process.

It sometimes can be very lengthy and sometimes frustrating process to some that are involved in it, because it is very deliberative and it can take a long time. You have identification of a management issue. In some cases, as with the recent Reauthorization of the Magnuson-Stevens Act, the councils had to develop annual catch limits and accountability measures for all of the species that it managed.

That has been the driving force behind the focus of the council over the past few years in developing those annual catch limits and accountability measures. Generally the council holds public scoping. It gets input from the advisory panels, and I put a little asterisk there because that input can come periodically. As you know, you met back in October of last year, you're meeting again today. It's a continuous process.

It's not like we give advice and then we back off and we never address these issues again. You continue to give advice throughout that process. The council develops a public hearing document based on the information it receives from its advisory panels and its scoping meetings. The council generally holds scoping and public hearings. We've tried to go to where – we have

our annual meetings in early January, beginning of February. We call them a road show, and most of the council staff goes from place to place starting usually in South Florida and working our way up the coast where we hold these open meetings and take public scoping and talk to fishermen, talk to the public that are interested in the issues, and then also have public hearings as part of that process.

It doesn't always hold to that schedule and throughout the year sometimes we have to go back out and have public hearings, but we're trying to develop an annual process where people are aware that in early January/February – which is kind of a downtime for most fishermen – that the council may be in their area and they can come and talk with the council staff and the council members themselves.

There is a fishery management plan. Our amendment is approved by the council and then it is submitted to the Secretary of Commerce for the review process. That review process includes NOAA Fisheries Service. It is reviewed at the regional office in St. Petersburg and also goes up to headquarters.

Then it has to go through a lot of review by attorneys, making sure that everything is covered, all the policy mandates are included in any amendment. Then it is submitted to the Secretary of Commerce for final review. The secretary can either approve, disapprove it, or partially approve an amendment.

Some of the management measures that you may see could get approved and some of them may not be approved. It's not an automatic stamp, and the secretary does have the right to refuse to approve any of the amendments. Then ultimately NOAA Fisheries Service or NMFS is the agency responsible for implementation of the regulations.

Some of you have received the Fishery Bulletin from the National Marine Fisheries Service Southeast Regional Office. If you're not on the mailing list, I would recommend that you contact them to get them. The fishermen refer to them sometimes as the blue sheets. When they send out printed copies they are on blue paper.

If you talk to someone and they refer to I got a copy of it in a blue sheet, it is likely a Fishery Bulletin. The open public comment period right now is open from the council and the MPA workshop that you'll be discussing later today. We will have a workshop coming up, an MPA expert workgroup/workshop coming up on May 16 in Pooler, Georgia, and then a public workshop that evening.

The council will be taking comments from the public on the use of MPAs for additional protection for speckled hind and Warsaw grouper until May 21. I apologize that the amendments that are listed there on the bottom; I gave this presentation last week and the public comment periods have ended.

But as you can see, once it goes through the review process of the National Marine Fisheries Service, it takes additional public comment on any of the amendments before it goes to the secretary. There is ample process in which the public can be involved. It's enough to make a

hogfish croak. It can be very confusing sometimes especially if you're not in the system. One of the jobs that I have is to try to simplify it.

I appreciate the opportunity this morning to address you as advisory panel members. As I said, some of you have been here a long time and know this process in and out and have been actively involved in it. Someone once told me if you don't step away from the basics, you don't have to go back. I thought it may be helpful to get a little refresher. I'll be glad to answer any questions.

I think I've talked with most of you on a fairly regular basis. I appreciate the fact that you as the experts sitting at this table dealing with coral issues are always there, and I can always send people to talk with you if they have specific questions, especially at a regional level or at the state level. I thank you for being that resource.

MR. BLAIR: Thank you very much, Kim. It's always good, as you say, to kind of get a review and reset the minds and make sure that we're in the right mindset and have a good understanding of our bases for going forward. Are there any questions for Kim on this, comments?

MS. MARTIN: I just wanted to I guess ask Kim if she could elaborate a little bit. One thing that this group discussed during the last meeting was information accessibility from our website. That is something that is still under development. I thought Kim might be able to update you on the progress and let you know that we do have a new website coming – have a little faith in us if you will.

MS. IVERSON: Yes, it's kind of like the fishery management process. It can be lengthy and drawn out and sometimes very frustrating, but we are working with a contractor to consolidate our servers so that we don't have pieces and parts that are being hosted in different areas. It is a challenge.

I think when we get to the end of it, it will be a much more simplified and easier to access website where I will have more control over what is currently going into what we call the ecosystem section of our site, which is hosted by a different host. It makes it cumbersome and a little burdensome to make changes right now.

With the help of Anna and with the help of Myra, we've gone through and kind of cleaned out the back end of the house, kind of like cleaning out your closet. That part has been done. We just need to bring it up to the front end so you can see the progress that we're making, so please be patient, and I appreciate it.

If you have recommendations, this is the time to let me know. Then we can make those changes at the back end so that when the programmer begins the programming for the site we can make it more easily accessible. The mapping server will continue to stay at FWRI. The mapping section will be separate. I don't map; I purposely never took a GIS lesson.

MR. BLAIR: Okay, thank you, Kim. Hopefully, everybody utilizes the website and gets into it and looks around and so forth. There are a lot of resources available through it. Do you have a

timeline at this point when you think you might have the – this is a long and cumbersome process, that we are looking forward to it when it comes online.

MS. IVERSON: To that point, I had hoped that we would have the new site up and running now. We've had some issues with our contractor but we're trying to work through those.

MR. BLAIR: Thank you very much. Next we are going to get an update on the Spiny Lobster Amendment Number 11. Kari MacLauchlin will give us a briefing on it. I am not sure if you were able to get it, Anna sent out a copy of the updated final report from the minutes of the Spiny Lobster AP meeting in April. We may take a minute to review those since I'm not sure everybody – I picked them out last night when I saw them. We'll review those a little bit after this presentation and go from there.

MS. MARTIN: That's actually the report from the Shrimp and Deepwater Shrimp Advisory Panel, not our Spiny Lobster AP. We can certainly review those. I had planned to kind of preface our talk tomorrow, the Comprehensive Ecosystem-Based Amendment, and provide input from the Shrimp and Deepwater Shrimp Advisory Panel so you can have some understanding of their recommendation.

MR. BLAIR: Yes, I apologize that's absolutely correct, and the timing is absolutely correct. If you haven't picked it off your e-mail, you may want to go grab it and review it this evening so you'll be in a better position tomorrow when we discuss that. Thank you.

DR. MacLAUCHLIN: I'm Kari MacLauchlin; I'm council staff and I'm the lead for spiny lobster. I'm just going to review and give you guys an update on Amendment 11. This amendment had two actions in it that were in Amendment 10, which also included some other measures, an ACL and things like that for the spiny lobster fishery.

This is a joint amendment with the Gulf of Mexico Council, so the councils had decided that they would select no action on two of the actions and then move it into Amendment 11 to allow more development and are working with industry to select these closed areas. There are two actions in it. One is to close some areas to spiny lobster trap fishing to protect elkhorn and staghorn coral. The second action was to require a line marking for spiny lobster traps.

These came from the biological opinion for spiny lobster. They were requirements in the biological opinion. The purpose was to close these areas of elkhorn and staghorn coral to protect them, these kind of hotspot areas; and then also to require line markings so that when there was an interaction with some trap debris and ropes they would be able to identify if it was a spiny lobster line or from another fishery.

At the March council meeting the South Atlantic Council approved for final submission. This one has gone to NMFS and is waiting for final approval. The Supplementary Environmental Impact Statement, which is what we did for Amendment 11, was published on April 27 and comments are due by June 26.

They expect to have the closed areas implemented before August 6, which is when the spiny lobster season opens. This is Attachment 2 and this is what was submitted to NMFS. Action 1 is to limit spiny lobster fishing in certain areas and so implement some closed areas. The councils selected Preferred Alternative 3, which creates the new closed areas with straight line boundaries. That's the only difference really.

Alternative 2, they were more kind of like buffer areas around the identified colonies. For enforcement purposes, enforcement had supported having straight line boundaries. There were two options and the council selected Preferred Option A, which would be to prohibit just spiny trapping. They also could have prohibited all spiny lobster harvest in the closed areas, but at this time they decided to just limit spiny lobster trapping. At the March meeting I also presented them the comments from when we went on public hearings at the end of January.

We had some comments and the Gulf Council did also. There were three closed areas that the fishermen had requested be split into two areas. At the March meeting the council were considering 56 proposed closed areas; but with the comments from the fishermen and then the Gulf Council had also approved splitting up a couple areas, and that made it into 60 areas and before it had been 56. Then the total closed area would be 5.9 square miles.

The South Atlantic Council also approved these changes. One of them was – 2 and 3 were actually one kind of long area. They split that into two smaller areas so that in here would still be available. Then 15 was modified – I'm sorry, I thought it was split as well. All of these are in this; all the correct waypoints and everything are in the document.

Then there was one up here that was also split – it was actually probably this one – split into just two smaller areas so that it just was those colonies that they had identified. There were also at the public comment – at the public hearings some other areas that fishermen suggested, but these were the three that they had worked with industry and had agreed on splitting up. The council just went with those three.

Action 2 was to require gear marking for the spiny lobster trap lines in the EEZ only. The councils have selected no action on this one again. First of all, the biological opinion was revised so that the phase-in period now is 2017. The councils felt like they had some time to explore some other options. At this time Florida Fish and Wildlife is working with industry and has provided some funds.

This year they're trying to figure out some other ways to mark the line. They talked about a tracer or requiring a whole color of a line and there were some issues with differentiating that from the other trap fisheries. If you can't require blue crab and stone crab to have a certain color, then they may just all be the same anyway and you won't achieve your purpose.

They are trying to come up with a way that they can do this and minimize the economic in the time that would be required to mark all the lines. They have tried kind of marking them with tape and everything, but the way that when the rope comes through the – when they pull it up off the boat – and John could probably talk about this more than me – it goes through something that cleans the line, and so anything like tape or something can't fit through there necessarily.

MR. CRAMER: A lot of times when the traps are in the water for a little while they get growth on the ropes and we use rope cleaners. They go through a pinch wheel that brings them up. Yes, it's pretty tough to keep something actually on the rope.

DR. REED: What is the purpose of marking the line and just not the buoy? I don't understand why.

DR. MacLAUCHLIN: Well, for lots of different reasons. The ropes get disconnected from their buoys and their traps. When they do and then it gets into the coral, it can wrap around it and everything. The purpose is that when there was debris found in the coral, that it could be identified as spiny lobster or not. This is a program that is similar to a program they use in New England or actually down the Atlantic Coast for the right whale. All the vertical lines, every fishery has a different color line they have to use in the different areas; so that when there is an entanglement with the right whale, if they get the line, then they can say, okay, that was this trap fishery in this area so we know we have problems. They can better, I guess if there needs to be management measures direct them specifically to a specific fishery.

DR. FEDDERN: The line marking isn't really for finding a fisherman, if a creature tangles his line, that's not his fault. The problem is I can see that say after a hurricane, a trap that's outside these areas; it's going to get blown at least to the area, possibly. After that, is the fisherman going to be fined for having his line tangled in any corals?

DR. MacLAUCHLIN: Well, I don't think the purpose of this was individual accountability. It was more of if they can pinpoint that as spiny lobster trap lines that are having a problem, then maybe there would be some management measure in place versus stone crab, blue crab and other rope that's used.

DR. FEDDERN: That's basically the only trap fishery we have out there in federal waters. Stone crabs are inshore.

DR. MacLAUCHLIN: It was a requirement in the biological opinion, I think. I think the councils are concerned with the effectiveness of being able to identify; you know, imposing this additional economic cost and it's also time-consuming. Their concern is that they would do this with the fishermen and then maybe it wouldn't be as helpful, and you still wouldn't be able to identify the rope as a spiny lobster trap line.

That's why they selected no action and now the fishermen are working with FWC to try some other ways to put tags in, I don't know, just other ways to make the line different from other lines. Even though those are the traps that are in the EEZ, it moves around. Just because there is debris in the EEZ, it doesn't mean that it didn't come from state waters. I think that's another issue.

DR. FEDDERN: I don't really see that is a very cost-effective method of doing this especially since it's the only fishery out there. Now, are all these areas going to be groundtruthed for corals?

MR. BLAIR: Henry, I've spoken to Billy Causey of the Florida Keys National Marine Sanctuary, and he has stated that in concern with the Sanctuary and other individuals that these are areas that have been identified as containing acropora.

DR. FEDDERN: Okay, one other question is are they all going to be marked with buoys so the fishermen without a GPS will know where they are or where they aren't?

DR. MacLAUCHLIN: No, they will not be marked, which is one of the reasons why the council did not – when they discussed it, they have concerns that if the closed areas weren't marked, then for the recreational divers that it would be difficult to enforce. That was another reason why they selected trap only.

DR. FEDDERN: I see, because I heard that Ken Nedimyer would tell more about that, but he had input from the enforcement people and they rolled their eyes and said "no buoys"?

DR. MacLAUCHLIN: A specific question that the council asked and the answer is at this time, no, there will be no markings.

DR. GILLIAM: Acropora is a difficult beast to get a handle on, especially cervicornis, the staghorn coral. Reading the executive summary, it talks about currently that these closed areas are in areas where it's currently located and areas of high density. I was just curious is there anything in the amendment that allows for reevaluation of these closed areas? What is the definition of high density and how did that go into defining where these areas are specifically located?

DR. MacLAUCHLIN: Well, first of all, no, there is no review process specified, and this is something that last time you met the AP had made that recommendation. I think that monitoring and evaluating any kind of positive impacts that the closed areas have will actually be something that NMFS does, and Protected Resources I guess would set up their monitoring program.

We had asked about that and I don't really know – there is definitely not something that is going to be required coming from this amendment. The way that they selected the areas at the beginning – it's in here – the used six criteria that – I'm sorry, I can't think of them off the top of my head, but I'll find them in the document somewhere.

They started out and they selected all the known areas and then areas that I guess that there should be some, and then they worked to kind of narrow it down to these areas where there was a high density, both species existed, there were also other coral species that were species of concern that were there; kind of high density, very reproductive, super reproductive, I don't know.

They did have these criteria and there was a system to how they selected them. Then they went out and met with industry over the summer and had the maps. Then everybody said, well, okay, like I know where there are some here and there is not some here. Actually, after working with the industry and having that workshop, there were more areas because the fishermen were able to

provide information about where they knew there were colonies and where they thought there was a good spot.

MR. CRAMER: I could probably give you the fisherman's view of how it all started, because I was involved with it when it first got started. NOAA came up with the maps and it was basically – most of it was dive sightings over the years of confirmed – it may not be high density but there was actually a staghorn small colony here or a large colony.

It's not necessarily all high-density areas. Because in the original SPAs right now in the Sanctuary, I think there is like 85 percent were initially of the elkhorn and staghorn were in these protected areas already. What they did was because of the reauthorization and the corals being listed on the endangered species list, they had to come up and say, look, we're trying to protect it more. They came up with these maps. We worked with them and basically what happened are these divers' sightings over the years or the research people out there; we went over them and the fishermen and Ken Nedimyer and we said, hey, some of these sites there is no coral anymore. There used to be a lot; and because of a cold weather event or whatever, bleaching, the site is gone but there is actually some over here. Fishermen actually came out – and they had really huge boundaries that covered a lot of sand. There never ever will be any staghorn or elkhorn growing there.

We just kind of – for us it wasn't a big deal because we don't fish that type of bottom. We don't place our traps on that bottom. If there is a storm or something, yes, they can impact that bottom. We kind of stay away from those areas. We actually came out and said here's more of them, because we don't fish there, anyway.

I just wanted to make one more comment on the ropes. The rope thing, for us it doesn't make much sense, because we are pretty much the only fishery out there where the elkhorn and staghorn colonies are. The rope interaction is a small stressor compared to environmental factors.

We were willing to just accept responsibility for any rope found out there, because it's not a big issue. Why make us change all this rope, a lot of rope? It's a cost to us. Really for the environment, do we need to replace all of our rope? It's a lot of rope to replace. We are willing to accept responsibility for all of it.

Marking, we can put a tracer in the rope, we can change out our ropes, phase them out. I have 5,000 traps, so it's a lot of rope, just me. It's a lot of work. It costs a lot of money, a lot of time. It doesn't make sense, because to us if you're not – I know it opens a whole can of worms when you try and say no lobster fishing at all; the recreational guys can't go there.

But there is a lot of damage from the anchors and stuff like that. It just seems if you're going to protect an area, then you need to protect it not only from the traps but from the anchors, from the divers rummaging through the coral to get the lobsters out. That's pretty much what I've got to say about that.

DR. VAN DOLAH: I recall this being a fairly extensive discussion last meeting. What I see is the preferred alternative is no action. Is there really a need to – is it likely that it would go away from the preferred action here? Otherwise, we're going to spin our wheels talking about something that we all agree is kind of silly to post.

DR. MacLAUCHLIN: Actually, this amendment has been submitted for final approval. As far as the actual actions and alternatives that are in here, you can comment on the amendment as it's posted by NMFS and everything and comment on the proposed rule. But this is more just an update and, of course, if the advisory panel wants to give further recommendations to help protect coral or whatnot, they can, but this is really just an update.

DR. GILLIAM: Your comment is correct, but I think as a Coral Panel my earlier comment I think is appropriate, and that is that knowing what we know about acropora cervicornis, this particular species, to put boundaries on a map based upon its current presence in those locations without having some mechanism in the future to reevaluate whether that species is still there or actually is in greater abundance and requires further protection elsewhere, I think is something that is appropriate to note as a Coral Panel.

As I mentioned, that particular species is unique in the sense that it grows fast. Our data working with Kate and FWC and others along the entire Florida Reef Track shows that it doesn't take very long for a few colonies to become almost a patch and high density in some areas and a higher dense area become very few colonies. It works both ways and it happens very quickly. I guess that's just my comment that I think it's worth noting that evaluating these boundaries I think is important, especially for that particular species.

DR. FEDDERN: Has any thought been given to selecting a few of these colonies' locations and for monitoring from year to year to see how they're doing as sort of a guide to see overall – a sampling how overall this species are doing?

MR. BLAIR: I would say, and probably independent of this, that monitoring is being done relative to that. Obviously, this is only one of many potential impacting aspects to elkhorn and staghorn corals. I would think that it would be relatively difficult to isolate out explicit benefits and so forth from this one particular action against all the various stressors that are ongoing in the Keys at this point.

I think that they're – and I'm speaking a little bit out of turn here – but through the normal processes like Sea Crimp activities that are ongoing to monitor the status and cover and so forth, that the coral populations will be able to give us an understanding of their overall status. But whether it is going to be able to be explicit enough to show what the impact or lack thereof from this action is, I don't think that is going to have that resolution in it.

DR. ALEXANDER: I noted that on some of your maps there were research-only areas. Maybe you can tell us a little bit about what's going to go on in there and maybe that satisfies some of these questions.

DR. MacLAUCHLIN: On the charts that are included in here, they also put some of the Sanctuary areas and those are actually Sanctuary areas to just kind of show, in addition to the proposed closed areas in this amendment, that there were other areas that were protected as well.

DR. ALEXANDER: I would guess since they're in very close proximity to your proposed areas, that by following them over time you'd be able to get some sense for how closures and the general populations are doing, getting at this gentleman's comments.

MR. BLAIR: Also regarding the aspect of review and update, this is an amendment. Other amendments may come; and if it's felt appropriate we may wish to reiterate to the Spiny Lobster AP that they consider inclusion or periodic review of this as an additional amendment to take into account the known variation of potential populations.

In looking over some of the criteria though for this and also from discussions with Billy Causey at the Sanctuary, they were targeting palmata explicitly and areas of cohabitation. Although they still are flashy to a certain extent, but they are the ones that are probably a little bit more lifelong. They're not so much of trying to incorporate moderate stands of cervicornis just because they are a lot more flashy in appearance and duration.

DR. GILLIAM: Yes, that's correct; palmata generally is a little more stable in terms of their longevity in particular locations. It kind of answered Henry's question as well. There is actually quite a bit of work currently being done along the Florida Reef Track with the acropora as to both palmata and cervicornis. In addition to the monitoring programs that Steve just mentioned, there is also a nice effort that the FWC is leading that actually looks at the distribution of these two species along the Florida Reef Track.

Then we have specific monitoring sites; quite a few off southeast Florida and then Middle Keys, Upper Keys and the Dry Tortugas. In addition to all the monitoring that's being conducted with all the acropora cervicornis nurseries under the TNC ARRA efforts, there is quite a bit of acropora monitoring with these efforts being done. I think there is going to be quite a bit of data generated in the next couple of years that can help address some of these issues.

MR. BLAIR: Any other comments at this time? I'll make a note that we can visit again if we wish to develop a recommendation to the Spiny Lobster AP relative to the periodic review of these areas. Just one thing, Kari, has Law Enforcement given an opinion on their sense or feeling to these closed areas?

DR. MacLAUCHLIN: They did submit comments or recommendations to the council at the December meeting when they were selecting preferred alternatives and everything. Specifically, they were supportive of the straight line boundary versus the buffer. They also commented on the trap line. There were a lots of enforcement concerns with that as far as would you have to pull the whole line up to see and all that stuff. That's basically what they commented on.

MR. BLAIR: Did they express any significant heartburn, for lack of a better word, regarding the numerous irregular size unmarked areas?

DR. MacLAUCHLIN: No, I don't think so.

MR. BLAIR: I know we've talked about that in the past just relative to a number these areas just like there are no buoys marking the HAPCs; that these are areas that are available in charts and can be placed in GPS aspects and so forth and various equipments that are normally used by commercial fishers.

I think that's going to be much more the way that it is rather than physical marking of a lot of the areas that they're going to be areas that are known and marked on charts and through their various position-finding aspects that's going to become, although to the extent it is now will probably be the way that enforcement looks at it as well. Okay, thank you very much, Kari, I appreciate that.

The next presentation is going to be an overview of the Department of Energy Report for Protocols for Surveying Methodology for Offshore – I'm sorry, I'm jumping ahead here. I'm trying to get through the agenda very quickly. Kate, would you like to give considerations on lobster trap limitation areas in Florida state waters.

MS. SEMON- LUNZ: I think this issue has been brought before the commission previously. I believe the commission really only had I guess a negative view of the trap line markings, but I would like to request a letter of support from the Coral Advisory Panel today that I can bring back to FWC and approach the commission again that we adopt similar protocols in state waters, essentially. I know that we have pretty comparable acropora cervicornis density occurring in state waters as occurs in federal waters. I would like to investigate bringing this to the state as well.

MR. BLAIR: I agree strongly. I apologize; for this letter of support explicitly for the alternatives as passed in the amendment?

MS. SEMON-LUNZ: Or just that the state explore proposing a similar amendment for exclusions. The commission generally doesn't like to hear or see the word closure.

MR. BLAIR: Yes, I think we've gotten that sense.

AP MEMBER: What kind of timing are you looking at?

MS. SEMON-LUNZ: This is something I would like to get going this summer. I'd like to have this letter soon rather than later.

MR. BLAIR: Would you be willing to draft something?

MS. SEMON-LUNZ: Yes.

MR. BLAIR: You can bring it to us. If you draft quickly, we can review and comment on it either, tomorrow, hopefully.

MS. SEMON-LUNZ: Yes, I can do that.

MR. BLAIR: Otherwise, we can take care of it through an e-mail process. Are there any other comments or questions at this time on the Spiny Lobster Amendment? Now we'll hear an overview of the Department of Energy Report on Protocols for Surveying Methodology in the Offshore Marine Hydrokinetic Energy Projects from John Reed.

MR. REED: My name is John Reed, FAU Harbor Branch. This is a report that just came out. This is a two-year study that I was involved with along with Nova University. The primary researchers were Chuck Messing, Brian Walker, myself and it was also in collaboration with the Ecology and Environment, which is a consulting firm in Florida Atlantic University.

Basically this is a grant from Department of Energy. The main purpose or objective was to look at sites offshore the Southeastern United States. It wasn't to do a site study, per se, but there was interest by commercial interests of looking to harness the Gulf Stream for renewable energy for hydrokinetic energy projects.

There was a lot of interest by various companies looking to do this, basically putting in underwater – it could be anything, but underwater turbines or some way to harness a portion of the Gulf Stream for renewable energy. This grant came out and it was to develop a protocol of how to select a site and what type of survey was needed to kind of clear a site in part to avoid hard bottom, habitat, which as we try to do, and especially if they're going to put something on the bottom like a turbine or anchors or anything of that means. During the same time Florida Atlantic University had started up this project called the Southeast National Marine Renewable Energy Center.

It's not really to put out a whole array of underwater turbines, but it's to develop this site that this new industry and projects could be tested offshore of the Southeastern United States, offshore Florida, primarily. It is a testing zone, essentially, and what they want to do is have a small area where they'll test their own projects, which is an underwater turbine, as well as allow other commercial industry to come in and test their different prototypes; with the idea of in the future of getting energy from the Gulf Stream; and in other cases possibly from thermal energy of the temperature difference from the bottom of thee Straits of Florida for that type of energy.

But this is solely for the hydrokinetic type energy. Our project was to basically go out and look at different sites offshore. This first part actually was presented at the 26th U.S. Coral Reef Task Force Meeting presented by Brian Walker, who is part of this project. The first part is just kind of our basic objectives.

What we tried to do was based on the needs of BOEMRE, the old Mineral Management Service and Department of Energy, and all these different agencies that have input for putting anything on the Outer Continental Shelf, whether you're drilling for oil, placing pipelines, or for something like this, and they are looking at all these different alternatives for developing cheaper and avoiding oil sources for energy.

And, of course, the very obvious Florida current and the Gulf Stream is a huge energy source. Our goals were specifically to develop acceptable benthic habitat survey protocols; then to test these protocols or to apply them in a test case that we did and try to reduce the uncertainty of survey requirements and regulatory review.

The first task for this whole region off the Southeastern Florida Region from West Palm Beach to Miami, primarily, was to compile the existing benthic data sets and bring this into an ARCGIS format. We collected all the known data for the Outer Continental Shelf Region here, which a lot of it was my data that we've collected over years and so forth, as long as existing pipelines and cable routes and closed areas by the Navy and so forth and put this in an ARCGIS format.

The second task was to develop a field survey methodology. We held a workshop that brought together industry regulators, utilities, NGOs, government, looking at what is industry planning to do? Do they want to put in fields and fields of turbines or have other types of means of harnessing the energy without turbine blades and so forth?

They had this workshop and all the industry, BOEMRE, NOAA, Fish and Wildlife, South Atlantic Council were all involved. Then we actually went out and did our field work, so we developed a draft plan methodology and so forth submitted to all the agencies. We developed this plan and then we went out.

First was to implement this with using available data and existing data. We looked at these three sites off of West Palm Beach, down to Broward County, off of Fort Lauderdale, and those yellow boxes are the MMS lease boxes are now the BOEMRE lease boxes. These are the three areas first selected in an area where there was high energy, so the Gulf Stream was going right through there or the Florida current.

It was in a region of interest for industry and what we wanted to try to select were three areas where we had no definite data such as off the northern box off of West Palm Beach. All we had was this background, NOAA/DEM chart of the bottom. It was very low resolution. But from that, it is my best guess that is going to be low relief, certainly sandy, muddy bottom and very unlikely to have hard bottom. We wanted to have one area where there is likely low relief soft bottom.

The middle box was kind of intermediate. There could be, just based on available bathymetry, some possible hard bottom, but certainly low relief. That's really hard to pick up on these either the available NOAA charts like this DEM, the digital chart that's shown here. Even in multibeam, even with new multibeam sonar for the low relief, it's really hard to tell if you have hard bottom there or certainly what's growing on the hard bottom, if anything.

The third layer down at the bottom of Fort Lauderdale was obvious from this NOAA/DEM chart high-relief hard bottom. That's what's called the Miami Terrace area. After we collected these data – I'm just going to jump through this part – and selected these three zones for the survey, we went out and did multibeam sonar, high-resolution multibeam with back scatter, which gives you three dimension topography of the bottom.

You can kind of tell hard bottom, soft bottom, but again in low relief areas you cannot always tell whether it is a live bottom habitat or not. Certainly, the high-relief hard bottom in this region is – well, high-relief topography in this region is always hard bottom and always live bottom. Every case that we've dove on where we've seen high relief in this region off of Florida, you're going to have hard bottom habitat, which would provide habitat for coral sponges and so forth.

We mapped these three areas and again brought those into ArcGIS. Then following that we did ROV transects to groundtruth those multibeam maps. We did ROV, photo, video transects to groundtruth those maps and to show, okay, when you have this type of multibeam, this is what the probable habitat is going to look like, so it is groundtruthing the new maps as well as the older maps and the older available data.

Anyway, just to jump ahead, that was from before our survey was finalized. This is from our report which just came out about a month ago, about 80 pages, a very detailed report. Again looking at these three sites, the first site or the northern area – we looked both at deepwater as well as shallow water because if they want to put turbines or energy projects out there or even oil pipelines or LNG pipelines, they have to bring it to shore.

Part of the project was look at the inner shelf in the – as we know, all along shore of this region there is a fairly extensive coral reef system or hard bottom habitat. Up there, the Lake Worth off of West Palm, you have the largest gap in that hard bottom nearshore, so it would be easier to bring something to shore, either pipelines or cable or whatever.

South Lake Worth had a smaller gap; and then the area down off of Fort Lauderdale, which is on the Miami Terrace, has very extensive nearshore hard bottom habitat and would be much more difficult to bring something through the available gaps in the hard bottom in that region. Okay, this is the northern region off kind of southern West Palm Beach.

The top is kind of the region where we did the multibeam, and then the blue lines are where we did the ROV transects. We found a little bit of hard bottom in the very outer portion, which is really outside of the area of interest. That appeared to be to me probable lophelia mounds. You can see that in the dim sonar below there, but the rest of it was all soft bottom, 100 percent muddy bottom.

This other region off West Palm; again the multibeam map verified that it was relatively flat, no ledges, ridges, no hard bottom; and the ROV transects also verified there is no hard bottom except for this shipwreck here that we came across. The species we found in those two sites, again all soft bottom were primarily penachylids, anemones, crustaceans, mollice echinoderms and various benthic fish.

The third site off of Fort Lauderdale is the region where FAU has submitted a permit application, which BOEMRE MMS has completed I believe an environmental assessment on their application or they're in the process of doing this environmental assessment for Florida Atlantic University to place out their test site. Now I don't know exactly where they plan to do it. They've kind of changed over the last four years.

MS. KARAZSIA: I'll clarify; those two 7053 and 7054 are two of the three potential lease blocks; 7055 is not in their proposal. My presentation following this will clarify more what they're proposing to do, and then the third lease block is the one north of 7053.

MR. REED: Okay; and when we did the survey it was not for FAU and it was not for a specific site survey, but it turned out our survey was in the region of their interest. Basically what we found on the eastern most block where you have that blue zone and the brown zone, that's the steep drop-off of the Miami-Terrace escarpment; very high relief, very rugged topography, and certainly coral sponge habitat.

You come in up on top of the terrace where the terrace flattens out, and here you're in about 300 meters, 3 to 400 meters water; the drop-off goes from about 300 to 600 meters; so up in the green where it looks relatively flat, basically on that habitat map or over there in the left, all of the green is what we call the outer terrace platform, and it's either high slope hard bottom or low slope hard bottom.

Basically, the majority of this is hard bottom, all of it. Some areas you have thin veneer sediment. Wherever you have these ridges such as that pink triangle, that's 80 meters relief there; it is a big feature, high-relief feature. Especially on those edges, you do have significant hard bottom habitat. Then over on the western side in MMS Block 7053, which is kind of that brownish color, we call that the inner terrace platform.

Again, it has high-relief and high-slope hard bottom as well as low slope hard bottom. That was all again mapped in the ArcGIS from the multibeam and then overlaid with the groundtruthing of the ROV transect, which is the long line. Where you have these ridges or those darker lines within that brown zone is where you have a ridge going up, like these platforms, so maybe 10, 20 meter relief and then flat areas, but by and large most of this is hard bottom habitat.

AP MEMBER: John, what are the general depths of those areas?

MR. REED: Okay, on the left most part we're looking at about 250 meters. The eastern side is dropping down to the Straits of Florida; you drop down to about 5 or 600 meters. The majority of the upper platform is on the order of 250 to 300 meters.

DR. FEDDERN: This survey is just looking at the bottom?

MR. REED: Right.

DR. FEDDERN: Have they thought about how they're going to harvest this energy that they're testing for?

MR. REED: Well, that's the whole thing. It's up to commercial projects to see what ideas they come up with. Right now currently Florida Atlantic University has built a small turbine. It's like a windmill. It's a two or three blade that's about 5 meters. They plan to put an anchor out and have a float, and the turbine blade will be about 20 meters deep below the surface of the water.

Obviously, once this develops and proceeds, BOEMRE and the other agencies are going to have to look at all kinds of possibilities; what's the impact on fish, turtles, mammals; and the big question, if you put hundreds of things to harness energy, what is the potential impact of reducing the energy of the Gulf Stream and potential effects elsewhere?

I mean, that is the big picture down the road, but for this specific one we were just looking at the benthic impacts of any outer continental shelf energy project. Whether they want to put a pipeline, drill for oil or gas, or for the renewable, this type of study needs to be done, the surveys, the multibeam, visual surveys and so forth.

DR. FEDDERN: That wasn't quite what – I was more interested assume they can generate the electricity; how are they going to get the electricity from the turbine to the grid?

MR. REED: They would have to run a cable.

DR. FEDDERN: Cable, so there are going to be lots of cables on the floor.

MR. REED: Yes, right, and that is one reason that part of our study was to look at the inner shelf, the nearshore hard bottom, looking at gaps. Where would be the easiest place to bring a cable in? Again, all of this would have to be looked at once somebody applied to do that. The FAU is not applying to put a cable in. They are just going to put test turbines out over a period of five years. They will have the anchor impact and whatever impact the turbine could have on turtles and mammals and so forth. That will have to be, I would thing, addressed by BOEMRE and the other agencies.

DR. FEDDERN: How often do these turbines need to be serviced in order to get the fouling organisms off of them?

MR. REED: That's the big question; nobody's done it yet. People put turbines in I think more in shallow water like in estuaries and stuff like that that has been done. Nobody has done deepwater offshore. Some of the companies realize that will be a big factor, fouling of sargassum as well as fouling of barnacles. Some are looking at non-blade turbines, without a blade or different ways of doing that.

DR. ALEXANDER: Well, actually since we're on this question I would like to ask my question. I noticed you were just talking about bringing in cables or pipelines or whatever through these gaps; but when you were showing your image of the gaps, Figure 4- or something, there is an intimate association between the gaps and where they're doing all their dredging to renourish the beaches; did you address that at all in your report?

MR. REED: Well, we didn't do a survey, per se, of the inshore reef. We took the available data.

DR. ALEXANDER: I mean you were pointing out where –

MR. BLAIR: If I could, I think it is really kind of some of the confines of what this report is meant to do, which is looking at and evaluating the deepwater resources that may be impacted

through these projects. Some of the other information that John is presenting, such as some of these gap aspects, I think would be considered more of a side aspect of it than necessarily the aspect of it.

MR. REED: The first task or objective of our study was to collect available data. We collected primarily NOVA's data and probably your data for those shallow water sites to put in the ArcGIS, but we didn't physically do any surveys looking for gaps. Obviously, from this it shows the northern area has certainly larger gaps or the area of south of West Palm would be easier to get through than areas off further south.

MR. BLAIR: We have in the past through various communication, cable deployments and so forth done essentially the same process in looking at those areas. It does take into consideration those areas of potential dredge areas that have been identified by the Corps as potential sand resources in looking at what a feasible minimal impact area would be as they come across. The thing that is always the case, if you'll take a look in that bottom panel that light blue on the left, that's off of Broward, is that your first reef terrace?

DR. GILLIAM: The light blue is actually what we call our nearshore ridge complex, so its nearshore colonized pavement and nearshore ridge complex. Actually off southeast Florida is generally our highest stony coral cover, our greatest density of protected acropora species and some of our largest stony coral colonies.

Then as you move east, we have our three linear reef terraces that generally run along most of the coast of southeast Florida parallel to shore separated by those sand deposits that are generally gray in the bottom image. We have our inner reef, which is the brown, or middle reef, which is the yellow gold; and then the outer reef, which is the red and purple.

DR. ALEXANDER: Okay, the only reason I was asking the question is I thought this report was how do you go out and assess an area if you are going to put out a turbine or something and bringing the power to shore is part of putting out a turbine, so I was asking how they covered this issue of incompatible uses of those gaps. That's the only reason I asked.

MR. REED: No, the survey was specifically for the OCS. It was for deepwater Outer Continental Shelf protocol; not nearshore protocol.

MR. BLAIR: But, Clark, it is a common aspect in things that have been done in the past to both look at those potential conflicts and identify working with them to try to identify least impacted areas, utilization of gaps, directional drilling and so forth to minimize those conflicts and impacts as well.

DR. VAN DOLAH: It just relates to the cable. I noticed in one of your graphics, I think it was on Page 25 of the report, but I think you also showed it up here as one of your first figures. There were a lot of existing cables.

MR. REED: There are tons of cables out there.

DR. VAN DOLAH: What are they for and where are they going to?

MR. REED: Some of those cables, like in this – well, it's really hard to see there, but right in the middle the red lines are existing cables of communication, telecommunication cables going all over, primarily coming out of the West Palm, Fort Lauderdale, Miami region. A lot of those are really old and nobody has ever surveyed them.

Off of Fort Lauderdale, right where those blocks are, the yellow blocks off Fort Lauderdale, is in a region that the navy – the navy has a surface warfare station at Fort Lauderdale, and they have a large area where they do testing offshore. They've run dozens, maybe hundreds of cables out there. We just did a survey actually for them; this test is running along one cable to look at impact. They have hundreds of them coming into shore there that haven't been surveyed.

DR. VAN DOLAH: To my knowledge this is only occurring in Florida. There are no cables coming in from offshore on South Carolina; are there any in Georgia?

DR. ALEXANDER: I'm not aware of any, but I'd be surprised if there were none given the Port of Savannah.

MR. REED: I would think you'd have telecommunication somewhere going to Bahamas or England or something.

DR. ALEXANDER: Someone just mentioned, as an aside here, I'm sure that Kings Bay must have some sort of listening stations and communications, things extending across the shelf, but that is almost at the Florida/Georgia border, of course.

MR. REED: I know the Navy has a bunch of stuff out there; it is a big testing area – or Air Force.

DR. ALEXANDER: There is a lot more proposed with the new training range that they are talking about now.

MR. REED: I just want to mention in this picture here you see this big kind of tan block here and then there is a line that goes to the right, that extends to the right, that was from a survey that we also did, and this was for a proposed LNG pipeline. That line to the right goes to the Bahamas. Calypso had planned to put an LNG port in the Bahamas, Freeport, and run the pipeline to shore so they'd offload the big LNG tankers in Bahamas, run the LNG gas to Fort Lauderdale and then distribute it from there. We did the survey within the U.S. EEZ, so from halfway to the Bahamas to shore, so they decided against that. Actually the Bahamas decided they didn't want a big LNG port onshore there.

Then Calypso, I believe, decided to try to make an offshore floating LNG port, which is the big tan area. We surveyed that for impact to the bottom, where they planned to put out huge anchors and anchor up LNG tankers and then pump the gas off the tanker again into shore on a pipeline. Where the red was is where we documented hard bottom, and certainly there would have been a

lot of impact with the anchors. For whatever reasons, they backed out of the whole project and they don't plan to do it at this point.

MR. BLAIR: Jocelyn, either that or in your next presentation if you can maybe touch base on –

MS. KARAZSIA: That project, they've withdrawn their application. The former governor of Florida recommended strongly against it prior to evaluating it. That project is currently no longer being considered but could reappear someday.

MR. REED: I just want to mention a lot of our work over the last ten years; we've done a lot of work on Miami-Terrace. Miami-Terrace is this whole feature that goes from about Boca Raton, about 90 miles south to South Miami, and again it is this ancient Miocene age rock, high relief. Most of our work has been on the eastern drop-off called the Miami Terrace Escarpment, where you do have coral and sponge habitat.

Also, just note that blue line that is coming down where you have this striped blue, but the blue line is the inner boundary of the Deepwater Coral HAPC. The Coral HAPC covers an extensive portion of this Miami Terrace excluding this area up here. We have not really done any work up there, but you can see from this NOAA/DEM chart that is certainly high relief and probable hard bottom.

Let me just run through this and finish this up here and then we can have questions. Some of the species that we are getting on this hard bottom – this is the outer terrace platform, so the outer terrace platform is actually the green, that green zone. We did very quantitative surveys based on the ROV transects. We had continuous video, and during the video every minute or two we documented with audio annotations what we were seeing.

We had experts in benthic biota describing the fish and primarily the sessile benthic invertebrates. Then throughout the dive we were taking quantitative still photographs where we shot a photograph straight down with paired lasers so we could quantify the area of each photograph and then be able to calculate the density of the biota.

We did two things with these data. We first calculated percent cover hard bottom, soft bottom and so forth; and then actual density where we counted each and every individual larger than 3 centimeters in the photograph. We were able to get density measurements and that's all in tables in the paper.

The dominant taxa that we see on the hard bottom primarily are sponges, a variety of demosponges. Most of these we really can't identify to species without a sample. As Steve knows quite well, many of these deepwater sponges and other fauna are impossible to identify to species. I've seen various fan sponges, which are very common species on the bottom, or taxa. From the video they look identical; and once we've collected them, we have species that look identical that there are three different species. We have a paper coming out now. Two of them are new species; one is the new family and so forth.

A lot of this is just unidentified, but the dominant organism, sessile or demosponges, hexactinellid, glass sponges, including this Aphrocallistes beatrix, which is the sponge that is being looked at in our biomedical group that has very potent anti-pancreatic cancer compounds. Of the Cnidarians, there are quite a few octocoral, so gorgonians, soft coral, and anemones.

As far as hard coral, we have lophelia pertusa and solitary corals, a variety of black coral, hydrocoral, Stylaster, and then a variety of mobile or motile invertebrates such as crabs and echinoderms and so forth, and fish and various fish including some – well, just various fish. On the inner platform, this is a species list of the inner platform where the FAU permit is currently planned for, I believe. It is very similar.

On top of the platform are sponges, gorgonians, anemones; some coral, hard coral, quite a bit of black coral, various species and a variety of mollusk crustaceans and fish. In the paper we have various pie diagrams and graphs. Overall the end of the paper or the report was about five or six pages describing the protocol of what we suggest should be done for future offshore energy projects, whether you're drilling for oil or gas or whatever, and the potential for gas drilling is there.

The government and the state of Florida have opened up the potential for drilling offshore Florida and even nearshore Florida. Basically we're proposing exactly what we did, which is first evaluating existing data, geophysical, biological, and archaeological; having early input from the agencies and stakeholders who will be impacted, fishermen, and the people who want to put these projects out there.

Regardless, in this region there really is not that much good high-resolution multibeam. The available data, available sonar data is pretty low resolution. In most cases high-resolution multibeam with back-scatter needs to be done. Then that needs to be groundtruthed with ROV. You cannot tell from multibeam in this region what the bottom is going to be when it is low relief.

When it is high relief, yes, it is going to be hard bottom. It will be sponge coral habitat. When it's low relief, you do need the visual verification of what is there. As far as specific transect spacing, if you are just doing a site survey, that's going to be up to the agencies, but that has not been determined how big of an area; if they're putting an anchor down, how big of an area around the area needs to be surveyed.

We suggested a square mile. I'm not sure what the agencies will decide upon. Then just our basic protocol for doing the video and photo surveys and how to quantify the bottom with point count and density analysis and providing all that data in the ArcGIS format for maps and for the agencies as well as the user groups to use. Are there any further questions?

DR. VAN DOLAH: In South Carolina we had worked with a group where we basically had trained the side-scan sonar data using a neural network to recognize hard bottom versus non-hard bottom based on the unique signature. We haven't tried that with multibeam, but based on what you've seen from your multibeam signatures; after looking at the visual groundtruthing; do you

think there is any potential for actually segregating out using a similar approach what is truly a hard bottom with growth versus not hard bottom in that multibeam?

MR. REED: In this area where I've done the multibeam and side-scan, both for this project and those other pipeline surveys, we certainly could distinguish what was soft bottom. We could distinguish what was high-relief hard bottom. But again, this low relief hard bottom, because as you know, especially off of Georgia, South Carolina, and even Florida area where you have the low-relief hard bottom, like the rock pavement where you have a thin veneer sediment that comes and goes, you really don't know what's there.

If its 10 centimeters thick of sediment there may be nothing there; but if it's a few centimeters you may have quite a bit of black coral and gorgonians and other sessile species. You know how variable – how that sediment can move around. Certainly in shallow water it moves around a lot. That type of habitat, we could not differentiate whether it had live bottom, living stuff on it.

Sometimes for the high-relief coral where we have lophelia, Steve knows, sometimes on the multibeam you can see it looks kind of fuzzy on top of the mound, so you can see where you have high-relief standing coral. But differentiating live coral from dead you cannot do. Differentiating coral rubble from low-relief standing coral, I don't think you can do. You are limited. You really need that eyeball or some way to verify it.

DR. ALEXANDER: Yes, Bob, my experience looking at back-scatter from multibeam is it's a pretty coarse tool. It doesn't give you the kind of resolution you get from a side-scan.

MS. STILES: I was wondering if you have a sense for the project overall, how likely it is that they're really going to build these test turbines and when that would be.

MR. REED: Well, I think it is too early to – I'm not involved whatsoever with the FAU Renewable Energy Project. Just from the workshop they had a year ago, it is my understanding from the various commercial people that they just want to test different pilot studies; you know, I want to test this type of turbine versus this one.

Right now the permit that FAU wants to put out is strictly for this test area. Where they want to put a single mooring buoy for this test turbine, which would be five or ten meters, that's over five years. Now, if and when it would ever go to something profitable where you'd have to have literally hundreds and hundreds, like a wind farm to make it feasible, I mean that's a whole 'nother – there are a lot of questions for something like that for a lot of agencies.

MR. BLAIR: I think it would be fair to say though that over time there has been a fair amount of discussion for this style, not just off of Florida, but obviously because of that. I think we're thinking of it more as a – to some degree becoming an eventuality, not necessarily to any massive densities or anything of that sort, but we know there is interest to investigate it for the potential commercial applications.

MS. MARTIN: I just wanted to make a point, and I think Jocelyn in her presentation next may get into some more of the specifics, Margot, with FAU's proposed project. Sitting here listening

to the extensive work that has gone into this grant project here and developing the sighting study, it is surprising to learn that this was not referenced or included in BOEMRE's Environmental Assessment.

I don't know if you have any suggestions on better coordination or if in your work with this project if you I guess experienced any gaps in communication. I mean, how can we as a panel and council staff and perhaps council ensure better coordination between these agencies. It just is surprising to find out that this report wasn't even included in the environmental assessment for the project.

MR. REED: Well, this report just came out in February. I just found out about the BOEMRE Environmental Assessment just a few weeks ago actually. I didn't even know they were in the process of doing the environmental assessment. I'm not sure how they collected their data for the assessment. They did not do field work that I'm aware of.

I believe they just collected available data. I'm not sure who or how they collected the data. I'm most surprised that DOE, who funded this survey specifically for renewable energy projects, didn't have communication with BOEMRE. That's my biggest surprise. Where did that disconnect come from? I really don't have an answer for that other than the question why – I believe they started the environmental assessment before this came out, I'm sure, so I don't know.

MS. KARAZSIA: We provided NEPA scoping comments in June of 2011 on the development of the EA, and the EA came out April 24. Yes, there is definitely a communication breakdown there between BOEMRE and DOE.

MR. REED: At this point will BOEMRE be able to use this data as part of their EA or is too late, or what?

MS. KARAZSIA: Well, that's going to be our recommendation. We're still completing our review. It's considered a final EA and so they would either go final EA to finding of no significant impact and issuance of a lease; or final EA and preparation of environmental impact statement. Those are their two options based on the comments they received in response to this EA.

MS. STILES: Just to that, I just wanted to comment that even though the hydrokinetic energy project may not be imminent, this kind of information is so really valuable and there is another part of Oceana that we have this huge campaign against offshore drilling. These proposals come up and political winds change and all of a sudden they want to build some facilities somewhere random. It's really hard to find actual research.

We'll compile literature, which is great, but to any new field research on specific coral areas is really valuable. I would say regardless of what happens with the alternative energy proposals, there will be proposals to do industrial things in this area at some point, and this is going to be used I'm sure in one way or another.

Obviously you all know there is some struggle between DOE and BOEMRE. It shouldn't be too surprising that they don't share information as they should. But hopefully as the community around them, the rest of us can kind of bring this to their attention and be like, hey, guys there is this whole study that was just done in 2012 that you should be looking at. Thank you, John.

MR. REED: I'd just like to mention that I believe this is on the DOE Website, so it is out there to some degree available.

MR. BLAIR: Just a couple quick kind of points of order here as we continue; I do want to take up or see if there would be consideration of a recommendation for review and potential recommendation for either development of a guidance or summary document, policy statement, or other recommendations relative to the twelve points of that report for utilization of methodologies and protocols for assessment in deepwater areas relative to potential protection and so forth for the deepwater habitats.

I'm going to get copies of the last recommendation sheet kind of made up so we can address it. We'll take it up a bit later in the day, but please be thinking about that. We are going to return to that and see if it's appropriate, which are appropriate, or if there is anything that we feel that we could utilize to develop a recommendation for methodologies to be used in areas of deepwater habitat.

Additionally, Jocelyn has a presentation that is a follow on to this, but I know I've had too many cups of coffee and need to take a break. I'd like to take a quick five-minute break and if everybody – we'll see how we go – we definitely want to get through Jocelyn's presentation and discussion. Thank you.

MR. BLAIR: Let's come back together, please. Just a couple of updates, first we didn't really mention the fact that since we've opened the meeting we've been joined by Bob Van Dolah from South Carolina's Department of Natural Resources and Ken Nedimyer from Florida Keys. I'm glad you guys were able to make it.

I know Bob has already been chiming in, which is great, but I just wanted to make for the record the notification that they joined us. What we're going to do is Jocelyn Karazsia is going to be giving us kind of an update on the FAU – I guess it's probably really more the National Marine Fisheries review of the project.

MS. KARAZSIA: Right and I am going to talk a little bit more about what FAU is proposing to do in the sites that John just described.

MR. BLAIR: Okay, so this is more project-specific information relative to it. John's is more the habitat assessment process and protocol. Jocelyn was also going to present another project that the National Marine Fisheries Service is reviewing, but it is something that ties in very well with one of the areas that are going to be discussed later on in the shallow water Jacksonville lophelia site by Steve Ross.

I would like to ask that we hold that portion of Jocelyn's talk relative to a proposed navy warfare range project in that area until after Steve's talk; because it will give I think a more direct perspective for that purpose.

MS. KARAZSIA: On April 24 BOEMRE made available their Environment Assessment or EA for hydrokinetic testing facility in three lease blocks offshore Florida. John described two out of the three lease blocks. That easternmost lease block is not a component of this project, which I think is a good thing because that's where probably the most coral is in that easternmost lease block. This is essentially what they're proposing to do, just to clarify that last point.

These are the three lease blocks that FAU is looking at and the three that John had described; there was a third one right here. That's not a lease block in contention, but then this other lease block is one. We don't have multibeam and ROV; we don't have that data for that. This is a schematic from the EA that describes what it is that FAU is proposing to install.

This is what is referred to as one of their mooring sites. They're essentially going to have three of these types of installations occurring concurrently over a five-year period of time. This is a vessel that has a cable to an anchor. This is a 6,000 pound anchor. They describe it as a Danforth Anchor or a drag embedment anchor.

They are going to initially deploy one of these devices and do some initial testing. Then over a five-year period of time they have three other of these I guess entire setups that they will deploy approximately 10 to 13 times over the five-year lease that they've applied for. At each of these locations there will be some technology testing as well that John had described.

These three lease blocks are all within the HAPCs. They are within 262 to 366 meters of water depth and located approximately 9 to 15 nautical miles offshore. This is again just another figure from the environmental assessment that also shows them testing equipment. They expect to test 12 to 24 different hydro-turbine devices within a five-year period of time; and each of those tests will last anywhere from one to five days.

If you do the math, it's 60 to 600 total test days within a five-year period of time. Part of our essential fish habitat review is in reviewing the impacts to deepwater habitat. Unfortunately, as we just discussed, the study that John just presented on that information wasn't incorporated into the environmental assessment. The only information that's in there is related to literature review or other nearby studies.

The bottom impact associated with each of these deployments is actual anchor itself in addition to approximately 82 meters of chain that would scour and sweep the seafloor. They expect that because of the current conditions, that under most conditions that the chain will be taut, but as the current meanders that there will be some scouring of the seafloor.

What they did was they came up with a drop radius. They believe that they can drop the 6,000 pound anchor with 70 meter accuracy. They took 70 meters plus 182 meters and took the area within that sort of large circle. Each of the 10 to 13 installations could impact up to 73,000 square meters or 18 acres of bottom habitat.

The plan is that prior to each of these installations they will develop a project plan. That project plan will be submitted to BOEMRE and then BOEMRE will have 60 days to review it, but that project plan will include site-specific surveys for each of these areas. They've identified some of the requirements that they will require the applicant to include within their survey's protocol. We've already recommended that they supplement that and we used the recommendations and your report. Actually because we were involved in sort of reviewing I guess the methods before you actually went and did the study, we've recommended some additional specifications for their ROV surveys.

Then the schedule that BOEMRE's proposed then is so that they will receive the project plans and then BOEMRE will have 60 days to review them and they will approve each of these sites individually. We would essentially develop a framework with BOEMRE so that we could also review the survey results and reengage for EFH consultation if necessary for each site.

Kim did a nice job talking about NEPA and briefly describing the NEPA analysis that requires the consideration of alternative sites. We've had a few opportunities to comment on this project and each of those opportunities we've said you need to consider alternative lease blocks in areas located north that don't have as much hard bottom habitat.

The EA reviews three alternatives. One is the no action alternative; one is the alternative that I had described. The other one is an alternative that essentially just shaves off a portion of this northern lease block; because this is also a very high vessel traffic area because there is a large commercial port, Port Everglades right here. Those are the only three alternatives.

They didn't consider any alternatives off Boca, the DOE-funded study recommended as potentially being better candidate sites for the development of energy exploration. At this point they're only proposing technology testing, no cabling to shore, and no upgrades to a commercial type facility.

But their earliest plans did include a phased approach that includes cabling to shore and some connecting to the grid and some more detailed energy production. This is essentially where we are at with our review. These are some figures from the report that John just described and these are the two lease blocks that John evaluated and this is the ROV transect.

It's my understanding these two lease blocks are within 262 to 366 meter water depths. I think along this transect you didn't observe any lophelia until about 400 meters, if I remember that correctly. This is a big concern to us that this information wasn't incorporated into the EA and we're going to work with BOEMRE and we'll do our best to make sure that it is in some way or the other. This feature in particular is of concern.

That's within their lease block and John talked about that feature here. Also it seems that based on information provided in their EA, they're looking for level sandy areas. That would be ideal to hold the anchor in place. I'm not sure, it just seems like based on this information that there really isn't a lot of suitable sites that would provide that, especially on that scale of 18 acres times 10 to 13 deployment sites. We need to talk more about this, John, but I guess if these

lighter shaded areas are still – they are considered low slope areas, less than five degrees slope, right?

MR. REED: This is just from the figure from the DOE paper, and this is kind of a hill shaded of the multibeam. Most of that was hard bottom where we had the ROV go through. Where you see the lines, like these wavy lines within a region, those are clear ledges of various heights. But even in the flat areas, much of it was hard bottom, where we had hard bottom organisms. It's hard to say. I mean a site has to be surveyed even from the level of this map, except where the ROV actually went over we can't say, okay, five miles north of that line whether it's going to be hard bottom, live bottom or what it is.

MS. KARAZSIA: Basically what I was wanting to know is should we be directing them to the lighter shaded areas as priority areas for deployment or should we be telling them these aren't good sites at all?

MR. REED: Well, certainly, they should avoid any area where the multibeam shows there's a ledge, which are the wavy lines. The actual XYZ data that we can import into our GIS and zoom in, you can see that even at a better scale; but, certainly, where there is no evidence of ledge, then it's going to be either flat rock, exposed flat rock with very low relief, less than 15, 20, 30 centimeter relief.

The rock could either be covered with sediment and have no fauna or the rock could be exposed and have fauna or partially exposed with some fauna. Yes, the answer would be if I was going to look at that, let's say at the end of the ROV line, the first site that I would go to would be due north of that where it looks like a large plateau area with no obvious high-relief features. That would be where I would go first. The further east you go the more high relief you get, the greater high relief you get.

MR. BLAIR: Jocelyn, you had another graphic that showed the circle; that was the estimated area of potential impact from the multiple?

MS. KARAZSIA: This one, no, this is just that feature that John described with the 80 meters of relief.

MR. BLAIR: At this point they have not necessarily identified an area within their leased regions?

MS. KARAZSIA: No, they've basically just described within the area that are wanting to work in, they want to lease these three entire blocks, but within these blocks they haven't identified – at least that hasn't been coordinated with us the specific sites for the deployment and technology test.

MR. BLAIR: Recommendations can be made relative to either areas of avoidance and/or preferred areas within those plots?

MS. KARAZSIA: Right.

MR. BLAIR: The other aspect that comes in you stated that they have an embedment anchor type in their design which will not work well or will not work as effectively in a hard bottom habitat. It needs to have sufficient sand overburden, I believe, in order for it to maintain its effectiveness.

MS. KARAZSIA: Well, it's in the EA. I haven't used these anchors so I don't really know under which conditions they do work best; but in the EA it states that they're targeting flat, sandy areas with at least a half a meter of sand overburden over the hard bottom.

MR. BLAIR: Is that something that information would be able to have exist in these areas?

MR. REED: We did not do sub-bottom profiling. You'd have to do that to see how thick the sand is, and I don't know if anybody has done that out there. I am not aware of it.

DR. ALEXANDER: I'm sure there is a good bit of data that has been collected over the years, like Al Hind from South Florida would have collected lines out across the shelf. There are high-resolution systems that are easy to deploy and a lot of academic institutions have them if you needed to get that kind of information. They've done it at Grays Reef.

Paul Gay has done that kind of work, looking at thickness of overburden on top of the hard bottom. But I was going to make the same comment you are is that if they want an embedment anchor and you want to decrease whatever impact these anchors are going to have on the bottom, you don't want to have them on uncovered rock, because then the chances of them dragging under the Gulf Stream's energy is going to increase the area of impact and you'd want to steer them towards areas where there is more sediment rather than less.

MR. BLAIR: The area that you had not looked at, which is the third block of their proposed areas, is from the sonar and so forth; is there any indication that you could see that that would be more favorable?

MR. REED: Well, the background gray of this Figure 617, that background gray is what's called the NOAA/DEM map. It's a digital map that NOAA has kind of pulled together all available previous contour data. The DEM map goes throughout the southeastern United States and up in the Gulf of Mexico.

It is very low resolution but you certainly can see where you have high-relief features, and you can certainly see where features are flat. If you took away that color there where you see these like bumps and stuff up in that upper area where we do not have the multibeam; that same type of feature continues down underneath the multibeam, so I would say it is highly likely that there will be hard bottom.

Now what type of relief I can't say and it's very – sometimes it's very patchy where the high relief is. Just up in the upper right is an area where we call the wreckfish site, this site is very interesting. It's just an isolated pinnacle that's broken away from the drop-off. I don't want to show where it is.

Anyway, it's an isolated pinnacle, but it holds about 100 wreckfish that we've seen over an eight- year period. They are spawning and it's a big breeding ground for them. It's very unusual and it's just covered with coral, lophelia and so forth. It is patchy. One area could be totally different than another area as far as what you're going to find.

It is possible if we look at the Calypso Port Survey that was kind of up there to the northwest, I would think that block to the north could overlap with the Calypso data, and we'd have the same type of multibeam and ROV data for that if it does.

MS. KARAZSIA: Okay, thanks. We received the document on April 24 or 25, and our review is still ongoing, and this is really helpful for us in the Essential Fish Habitat Review.

MS. STILES: I was wondering if you know when they deploy the actual anchor; do they go and do a little research on the specific site or do they just drop it and see if it takes?

MS. KARAZSIA: It's my understanding that they use a similar thought process if you're deploying a submersible or an ROV where – and you guys know more about that than I do – where if you identify your target location on the seafloor, then you deploy at a certain location on the surface.

The 70 meters comes from – they did groundtruth a few. They have deployed some ADCPs in the area and they groundtruth the actual location and compare that to the target location. In those cases they were able to land an ADCP within 9 to 155 meters of their target location, but I don't know if that's really comparable in ADCP the railroad – what are they called, railroad tie anchors, with this type of anchor – railroad wheel, okay.

MR. REED: What will the protocol be that BOEMRE requires for them to do each anchor deployment. What are they going to have to – do they have to do any pre-site survey or not? What's involved with that?

MS. KARAZSIA: Yes, before each deployment they have to prepare what's called a project plan. That project plan includes the findings from their survey of the area, the ROV survey. Within the EA they identified some items that they will require as part of the ROV survey, but not all of them that we had recommended in our NEPA scoping.

We'll have to talk to them some more about that. BOEHM has 60 days to raise objections. If they don't raise any objections, then they can deploy. If they raise objections, then they have to resolve those objections before they can install an anchor. It's not clear to us – this isn't really how the EFH consultation process works.

In order for us to do an essential fish habitat assessment we need to have information about what's there. This is the process that BOEMRE has outlined, and so we're trying to figure out, well, what's the framework to make sure that we have opportunity to review the site-specific information before the process moves forward.

MR. REED: The project plan, every time they deploy or when it deploys will have to complete a project plan and at least an ROV dive, no multibeam or anything like that necessarily if it's outside of that.

MS. KARAZSIA: I'll have to verify that.

MR. REED: How big of an area do they have to ROV survey?

MS. KARAZSIA: 70 thousand meters square or 18 acres.

MR. REED: There is no protocol for the spacing of the transect lines or how many photos or anything like that, right?

MS. KARAZSIA: Part of that is part of our recommendations that you've seen before as well. We're also in the process of developing some deepwater habitat survey protocols for development type projects and not for research. When someone like BOEMRE comes to us and says how do we survey this area, we tell them this is the minimum amount of information that we need to see just to get them started. A lot of the detail that is within that protocol, which John has reviewed a draft of it, wasn't in the EA, but we will recommend that be included within.

MR. REED: If there was unavoidable impact – I mean, by and large if they stayed in a really flat area, it is going to be very low density, I would guess, especially in the western area of sessile organisms. If there were hard bottom within that 70,000 square meters that could be impacted, what would be the protocol for mitigating that? Is there anything for that?

MS. KARAZSIA: Yes, our program would encourage them to avoid those areas and minimize impacts to those areas. But, if we do get into a situation where they have impact in an area, then we'll have to have those discussions. Part of the Navy discussions is about a completely different activity that's going on off Jacksonville, and it's an update on our discussions with the Navy on compensatory mitigation, because there are going to be impacts to important deepwater habitats.

DR. VAN DOLAH: I resonate I guess with the concerns here, but I would urge us all to keep some of this in perspective. Just doing a back-of-the-envelope calculation here, one lease block is about 4,000 square acres or 4,000 acres. We're talking a 20 acre, roughly, piece of this for each one of those. This is an experimental kind of thing.

I think it's to their advantage to find areas that have some sort of sediment overburden and one would expect that. In the grand scheme of things, if this was a commercial operation and expanded out to hundreds of these kinds of deployment, that's one thing, but to do 10 or 13 deployments, it just seems like it may or may not be warranted to do too much overkill in terms of what you require for the assessment. These are little specks out there, 18 acres.

MR. BLAIR: It's always good to keep perspective. One of the things that I would think though that we're looking at as well here is usually in experimental aspects and deployments you usually

have much higher requirements to ensure that you're minimizing these things. Usually you don't get a lot of added-on requirements as it goes out.

I think part of it is in a manner of trying to be as conservative as possible to be able to get the good understanding of what is possible; and having some of these in play I think is appropriate. But your point is well taken that there is a limit that should be considered and how far we go down the road for that.

MS. KARAZSIA: Also, this is a commercially viable thing that can be done in an environmentally responsible way. What we don't understand is why are they investing so heavily on studying these sites when we know that there is a better alternative to the north? It's not too far to the north, not just for the deepwater component, but for shallow water and cabling to shore; that that would be a better option, especially knowing that commercial testing was originally part of their application. We don't want them to pigeonhole themselves into studying these sites too exclusively when a commercial build-out may not ever happen here.

MR. REED: I'll just kind of finish up for my perspective. We do have good data there for this region, for those three blocks. We've collected the data. We have good multibeam; and if they are determined to stay in this area for the preliminary projects, I think it would behoove everybody to sit down, look at the multibeam back-scatter data and the ROV data and say, okay, here is our best guess that this region just based on the multibeam is going to give you the greatest likelihood of avoiding hard bottom or certainly avoiding any high-relief hard bottom such as that area up there in the northwest.

I think that would be a good suggestion to take the data we have and sit down and review it with the scientists involved and the oceanographers and then select sites. Then if they are required to do an ROV survey, maybe select two or three sites that have the lowest probable hard bottom, high-relief hard bottom, and just do the transects there to minimize the cost of doing the ROV survey.

Each time you do that it is costly. You are going to have to mobe and demobe and all of that. If they can select maybe two or three sites and do it all within one ROV survey, it might be the least costly way of doing it instead of running an ROV survey each and every time they want to do a new site within an area.

MR. BLAIR: Is there any particular – you know, more to that point, the idea of why not one site; why not have all the deployments – is there a stated reason why they want to have different locations to be able to do their deployments?

MR. REED: I don't' know for a fact. I know they deployed I believe four ADCPs over on top of the – basically from about 200 meters out to about 600 meters looking at the current strength. The big part of it for industry is where you can get the strongest current. There is some minimal current they need to make this work, but where they can get the strongest current and have the shortest distance back to shore.

The 600 meter, which was off of the terrace and totally in the mud, is down the Straits of Florida. A completely muddy site was just far offshore to utilize, plus they'd have to run a cable up and over the escarpment. Up on top of the terrace I think it's a matter of factor of current strength. The further you go west the less current you have. I think they might want to do two or three looking at the current and so forth.

MR. BLAIR: I know that we're going to get copies of the recommendations from the DOE study relative to the methodologies to be considered for evaluation of these, but I think it would be easier if we had copies with us when we do that. It seems as though that may be some of the basis that we can use for these as well as the idea of consideration of as few locations as needed and not independent deployment sites unless there is some justifiable reason for that to occur.

DR. ALEXANDER: It would seem that if our concern here is trying to encourage the preservation of coral habitat and their concern is having anchors that don't drag; why don't we just make a recommendation that they only use areas of thick sediment deposits and have them go out and do a quick geophysical survey that would take no more than a day – well, actually less than that for a lease block.

MR. BLAIR: It does seem as though there should be some direct conflict with areas of hard bottom and high relief with the type of anchor systems that they're using. That may be a good recommendation as well, that it would alleviate the issues of it. I guess the question comes in, can they find appropriate suitable areas within their leased areas that provide them their need?

DR. VAN DOLAH: Just a question; what are our opportunities except through you, Jocelyn, for actually providing comments on this? We're having a suggestion, and I think what Clark just said is an excellent one and probably in my mind better reflects the cost associated with trying to find locations to the impact of these experimental sites. I don't know that there is any formal way to actually get that comment in except through your office.

MS. KARAZSIA: Well, BOEMRE is accepting comments from the public right now through May 24. They only gave a 30-day review period for this EA. I'm sure they would accept comments if they came in after that, too. Our office will be providing comments under our EFH responsibilities under the Magnuson Act. Then I've talked with Anna about potentially coordinating on some comments that would be provided by the council. We've done this before on a few other projects. That is another opportunity and then individually if anybody wanted to comment, and here, too.

DR. VAN DOLAH: Well, I would certainly second then Clark's recommendation that the areas to be more completely explored would avoid any known ridge areas and geophysical surveys to identify sites with sediment overburden sufficient for their needs be the areas targeted. If they can do that, I'm not sure I could recommend that jillions of dollars to go out there and do all sorts of ROVs and everything else for this kind of a thing.

MS. MARTIN: I just wanted to add quickly that I think the appropriate avenue would be a Coral Advisory Panel recommendation could perhaps be folded into the comment letter that the council

would submit before the deadline. Unless the agency is interested in an additional comment letter, I guess there is that opportunity as well.

MS. KARAZSIA: Just to clarify, they've already proposed – it's not something a recommendation is coming from us. It's in the EA that they propose to do detailed ROV surveys within each of these areas. That's something that has come from FAU and BOMRE prior to us commenting.

MS. STILES: Just to clarify; it sounds like it's too late to encourage them to explore the lease blocks further north, or that they've already rejected that. That's sort of the obvious thing that we would potentially like them to do.

MS. KARAZSIA: We've made the recommendation and will continue to make it and it's not –

MS. STILES: And they rejected?

MS. KARAZSIA: It wasn't part of their EA.

MS. STILES: Thanks for doing that

MR. BLAIR: Along those lines, though, I think that is kind of in concert with the recommendation that we could make is to highlight the fact that there is an abundance of high-relief habitat in this area, abundance of hard bottom and lack of areas with sufficient sediment overburden, that towards their methodology that are being planned and utilization of the geophysical surveys in not just this area but other areas available to them, may provide more suitable habitat. It's kind of the aspect of where we would like to go forward.

Agreed, if they can find areas to avoid this, but if they're going to decide – I guess the other part of that would be if they decide that they do need to find areas within these lease areas based on the amount of habitat that's known and identified, much more rigorous methods may be needed in order to verify that they are going to be doing it with minimal impact.

That's where it may get where recommendations for either multibeam or other aspects are going to be employed if they're going to try to find the needle in the haystack amongst the habitat in these lease areas. But if they are able to find areas that obviously have enough sand overburden that's going to be okay, then that may be the first and least expensive means to do it; but if they do continue to desire to have operations in these areas of very extensive habitat, then additional steps should be required to ensure they are minimizing their impact.

DR. ALEXANDER: Are we driving this in a bad direction in terms of suggesting they look for thick sediment deposits; because at least in this map the thick sediment deposits are at the base of the slope there, and you were saying that you get more lophelia in deeper waters. Are we sending them in a bad place?

MR. REED: I'm just saying the fourth ADCP site, which was about 600 meters, is too deep for them. At least at the workshop all of the commercial interests had no interest going out that

deep. They wanted to keep it within 200 to 400 meter zones. I don't think that would even be an option for them.

The real option to avoid hard bottom totally would be to go to the north. The Miami-Terrace peters out just north – well, between Fort Lauderdale and Boca, so once you get north of Boca, at least at that depth – and from the limited data we have from the multibeam, it is just pure mud out there, very thick mud, no hard bottom.

DR. ALEXANDER: What's the driving force for these lease blocks, just because it's right next to home?

MS. KARAZSIA: Yes, they have a facility that is near Port Everglades. That's where they'll be; their vessel transit is just from here to shore. But we could expand the recommendation to not just require the deep, thick sand but also include something about just being flat, maybe a limited slope. That might get away from those higher slope areas that we're also trying to avoid.

DR. ALEXANDER: You can use a very low-level initial screening just by looking at the character of even the coarse multibeam to exclude areas of high, rough topography if you wanted to recommend something like that. But obviously this has moved along a lot further in terms of the protocols. I mean what John was showing is a lot more involved.

I didn't see, but then maybe I'm not familiar with the whole thing about was there a rapid, early screening process in sighting hydrokinetic areas that you don't go through this whole process initially with ROVs and multibeam until after you look and see whether it is rough or smooth?

MR. REED: Well, I think the level of the DOE project was not to develop necessarily protocol for a site specific, like protocol for an anchor, but an overall protocol how to clear out a region or a series of MMS blocks; how to do the larger scale survey over all that, okay, here' a good site and here's a bad site.

We've made available these three sites that have good background data for that. To answer your question, no, we didn't do like a level of that to make a quick and dirty or a low-level survey, other than first collecting all the known data and putting it in this ArcGIS, which in some cases may give you enough data that you need if you can get all the available data.

Now, there is a lot of data that is yet to be available such as commercial data from Calypso. They probably do have – well, I know they do have like sub-bottom profiling and other types of data, which is not available and they're not just going to hand it over, the same with the oil companies. It's like getting all the high-resolution maps in the Gulf of Mexico from the oil companies or the Navy. They're there, but how you get a hold of them is difficult.

MR. BLAIR: I see a recommendation here that is going to be developed for suggestions to be included in a comment letter from the council that will be submitted. We can work on the wording and we'll finalize it over the course of the day and/or tomorrow. Just to make sure that I've got elements in it, let's do a quick review to make sure that we include those items that we want to have in it.

I think it's appropriate in the recommendation to state it is noted that the methodology anticipated to be used includes anchoring mooring systems that do require sufficient or an appropriate amount of sediment overburden to exist; recognize that information presented indicates that there are significant regions of hard bottom and high-relief areas without such sediment in the lease areas that have been identified for potential use; that we would recommend at a minimum geophysical surveys are conducted to determine appropriate areas with sediment overburdens necessary to meet the needs of the mooring system; but also have a caveat that should they continue to desire to work within areas of high relief, additional surveying methods may be required to ensure that they are going to minimize and avoid impact to that.

We may get into some specificity of the types of surveying methods that are there through discussions with others as we develop the recommendation. Are there any other points or considerations that we would like to have as a bullet item in there now to be flushed out later?

DR. GILLIAM: Can we recommend they go north; can we be that blunt?

MR. BLAIR: I think part of the issue with recommending they go north is we don't have enough information. John, am I reading this or hearing this correctly that we don't really have enough information to verify north is better?

MR. REED: I'm just looking at my Arc map right now. The three MMS blocks or BOEMRE blocks that are within our multibeam; and then there is the fourth one that goes up in the gray area, we have zero data for that area. I'm just looking at the previous Calypso data where we surveyed a 7 by 5 square mile area, it's very detailed, is north of that third block of interest. The third block of interest we have no multibeam, we have no ROV. All we can do is guesstimate based on what is due south of it.
MR. BLAIR: So essentially there is no data.

MR. REED: We have no data.

DR. ALEXANDER: There would be limited data from the NOAA/DEM and the USGS/USC bed data would tell you whether it's sandy, muddy or rock and shell hash.

DR. BLAIR: As John pointed out and as you can see there, based on the DEM data it would imply that it is of similar habitat to those two areas that have been done so there is reason for concern.

DR. ROSS: Also, several of the NOAA boats are conducting multibeam mapping in their transits to and from this area, and I'll mention that in a little bit when I talk. The Oceanus Explorer is making two tracks through that area; one they've already done and one is coming up.

The Nancy Foster may or may not make tracks that far south. We're at requesting some further north, but we could request that they map this area at least in one pass; so between several ships making passes, if they will coordinate – that is another issue I'll bring up – we potentially could get a lot of data very quickly.

DR. GILLIAM: I guess my question is when I'm at north I'm beyond north of these three particular lease blocks. Taking advantage of the data that we now know exists seems bizarre to me that we have data that isn't going to be evaluated for situations like this. If there are areas north of the Miami-Terrace that we have data for that clearly shows that likelihood of damage to these communities is minimized, that's generally the first step, I would think.

MS. KARAZSIA: Yes, I would recommend making that recommendation, but we haven't gotten much traction on that recommendation; so also having a backup plan if that recommendation isn't adopted, if we're only looking at these three lease blocks, that we have recommendations for those lease blocks as well.

DR. GILLIAM: Right, so I guess the first recommendation would be to evaluate northern lease blocks; and then the second recommendation would be if that first recommendation is ignored, then the comments that Steve previously made, I guess. Maybe we can have a bigger stick.

DR. VAN DOLAH: Jocelyn could probably clarify this but we're commenting on their EA, correct, for these lease blocks? We can make that general recommendation but they've gone down a path here fairly far, and I can see why they are sort of kind of ignoring that initial recommendation.

Even though I have no problems with us as a committee or panel making that recommendation, I think it will be ignored by them just like it was ignored by NMFS, or NMFS comments were ignored. This is specific to that EA. This is not in the beginning of a general exploration of lease blocks that might be of value.

MR. BLAIR: I think that could be taken as part of the wording that we have at the preamble of this, if you would, at the beginning of the recommendation, that available information shows this area is rich in deepwater habitats and hard bottom, and at least information at hand doesn't imply large areas of significant overburden of sediments, and therefore make it unsuitable for these types of activities in general without further work. Are there any other comments?

DR. GILLIAM: I'm assuming that they're picking these lease blocks with the eventuality of going down the commercial path; then why explore these lease blocks if they are not going to eventually commercialize this effort? We're just going to end up going through this again when they go nearshore and they bring these cables – they have to get the energy onshore at some point; so when they bring these cables nearshore, we are going to be going through this again, because this area, there is no way to avoid the nearshore resources in this area; whereas, if you go north it is the same positive result.

There are fewer nearshore resources north as well as offshore resources north. Again, I'm not overly familiar with the mechanism; but if there's a mechanism, it is going to benefit us at the end result of all this as well as the beginning.

MS. KARAZSIA: We raised that with BOEMRE. Their response is the type of lease that they're applying for is just for this technology testing, research and development type of lease.

There is a separate lease that can be applied for that is much more expensive and has slightly different requirements.

It's for technology testing and that this lease doesn't grant them – because they just were able to get this lease, that wouldn't grant them to get that lease. They say if FAU wants to invest all these resources in these blocks, that might now be a good investment for them. I don't know how much assurance that gives us.

DR. VAN DOLAH: I think Jocelyn is right on track there. I bet you if you got into the proposal that funded this, you'd find that they're really testing the technology, what works and what doesn't work in terms of these turbines and so on; and not so much the value of these lease block areas for expansion or commercial exploitation.

MR. NEDIMYER: That was going to be my point exactly. It sounds like they're really just wanting to test the technology and they are just trying to find a place near the port to do that and just pick the block on a point on the ocean, and then we've got to survey and we've got to do all this stuff, we've got the EA to do it.

I would think that once they tested it, then they are going to completely look at the whole thing again and say if we want to expand this thing, we get way too much pushback trying to develop that site. They're going to look for a suitable site to expand it, but this is just R and D for the technology. We're agonizing over things that don't exist.

MR. BLAIR: Yes, I think we can wrap it up in the recommendation to kind of, as I said, give the statement that in general this area is not considered appropriate for this use and then give recommendations towards what should be done in this specific case if they wish to continue to evaluate these sites. Are we at a point where we'll kind of try to massage this a little bit, bring it back for approval. We're at 12:15; I'm sure everybody can take an energy break. We will convene back here at 1:15, okay.

The Coral Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Hilton Garden Inn, Charleston Airport, North Charleston, South Carolina, Wednesday afternoon, May 9, 2012, and was called to order at 1:15 o'clock p.m. by Chairman Stephen Blair.

MR. BLAIR: I think we'll go ahead and get started. I think, one, we want to recognize that Ken Banks has joined us late in the morning for the record, so that he's with us as well. This afternoon we're going to be continuing with kind of information resources on status in deep corals as well as some other general information on some management activities that are ongoing in the South Florida area.

What we'll do is we'll go ahead and start off with some kind of updates associated with recent presentations given by Steve Ross and John Reed at various symposia that have occurred kind of as an update of information that is available for deepwater corals. We'll start off with John who will talk to us a little about known and probable areas of deepwater coral sponge habitat off of Florida.

MR. REED: Actually, this in part was this paper that we gave at the Deep Sea Coral Symposium last month, but it's also kind of a very, very brief summary of the work we're doing both in the mesophotic reefs, which are the shelf edge, deeper coral reefs as well as the deepwater habitat.

Most of this week that we're doing, both the mesophotic and deepwater reefs off the southeastern U.S., but primarily off of Florida is part of this NOAA Cooperative Institute for Ocean Exploration Research and Technology, which is a five-year grant. So it's our NOAA CIOERT or CI grant at HBOI, and part is also at UNCW with Steve Ross and other people at UNCW.

Some of my research is also funded through this Robertson Coral Reef Research and Conservation Program; the funds by Deepwater Mesophotic Reef Research as well as work by Joshua Voss and Sara Edge, who are doing some really nice work on shallow water coral reefs; reef diseases, coral health studies and so forth; also funding from the South Atlantic Council and various agencies of NOAA.

Most of my collaboration within NOAA is primarily with NOAA Fisheries, Andy David and Stacy Harter, and with our mesophotic reef program with Kimberly, especially on this new grant that we have working on the Pulley Ridge, a mesophotic reef off the Florida Keys in general. But the mesophotic and deepwater reef projects are to advance NOAA goals while complementing the management objectives of the South Atlantic Fishery Council, NOAA Sanctuaries.

A lot of our work is within the sanctuaries, both the Florida Keys as well as the Flower Garden Sanctuary and also our work on the shelf edge MPA sites as well as the Deepwater Coral HAPC and Oculina HAPC. This is the area of our research, but specifically for the work we're doing within the South Atlantic Council Region. The blue polygons are these newly developed shelf edge MPA sites.

The red polygon is the Deepwater Coral HAPC, and that little black polygon off of Cape Canaveral is the Oculina HAPC. This first project is a grant in collaboration with Andy David and Stacy Harter through South Atlantic Council. It's a NOAA CRCP grant to look at the shelf edge MPA sites as well as some sites in the Deepwater Coral HAPC and basically is characterized these different sites.

Many of these sites, especially the shelf edge sites and large areas of the Deepwater Coral HAPC, have relatively little research done. Part of the research will be doing multibeam sonar, ROV transects, so I'll be doing the benthos and Andy David and Stacy Harter will be looking at the fish, looking at the habitat within and adjacent to these HAPCs and MPA sites.

This is a cruise we have coming up in July on the NOAA Ship Pisces looking at the shelf edge MPA sites. We'll be doing all that type of work off the Carolinas and Georgia and one site off North Florida. One result of our deep sea research was taking a look at the old data or the previous data and tried to make habitat maps for this entire region especially off Florida.

These are the things we use to do these maps very quickly. What I did was we took the available NOAA bathymetric contour maps – these are regional NOAA contour maps along the coast of

Florida – and this is where I discovered most of the sites that we found; deepwater reef sites off of Florida using these older, 1970's era charts, and they're actually quite good.

On the right is one of these NOAA bathymetric charts. Where you see these squiggles is obvious high-relief bathymetry. The lines are isobaths, bathymetric lines. Where you have a circle or an oval it shows high-relief features. In every case that we've groundtruthed these features they're pretty good compared to what's actually there.

On the left is a NOAA/DEM chart, which is a digital chart. You can see we drew a polygon bordering where you have obvious high relief separated from obvious flat relief, which tends to be muddy sand at these depths. We're looking at 400 meters to about 1,000 meters for the most part. In addition, more recently we're also using the newer multibeam charts.

This is an area that we mapped up between Miami and Bimini, the Straits of Florida. These high-relief features we groundtruth; and that upper right picture is the side-scan sonar, side view of that little box of the multibeam and groundtruthed it with in this case a submersible dive showing that it was in fact a deepwater lophelia coral reef.

As a result of our work and certainly Steve's work and other researchers over the years, we've been able to map out quite a few features and groundtruth quite a few high-relief features in this region. As a result of all of our combined work, as you know last year, 2010 this whole area was designated a Deepwater Coral HAPC, 24,000 square miles.

Within the Florida region at least we took these charts and maps and available data, and I tried to map out different types of deepwater coral habitat. Basically we have different types of known and probable deep sea coral and sponge habitat. I'm just going to kind of go through this north to south starting – well, no, I won't.

First off, we have the red zone which is a high-relief coral zone. We also have these deepwater terraces such as Miami Terrace of South Florida; Portales Terrace off the Florida Keys; and Island Slopes off of Cuba and the Bahamas, and even some deepwater valleys off the Tortugas region.

Overall in ArcGIS we calculated the area of all these different types of deep sea coral habitat from coral mounds to island slopes and terrace and discovered about 40,000 square kilometers of bottom habitat, some in U.S. waters, some in Cuban, and some in Bahamas waters. What's interesting here is the total area of the new Deepwater Coral HAPC from North Carolina to Florida is about 62,000 square kilometers. That's about 13 percent of the seafloor of the U.S. EEZ within this region. The EEZ goes out 200 miles.

Also interesting is 69 percent of that total is not within Florida waters but off of Florida, due east of Florida in South Florida. Of this deep sea coral habitat that we mapped off of Florida just within the U.S. waters, we calculated about 22,000 square kilometers of which about 70 percent of this deepwater coral habitat within U.S. waters off Florida is protected or is within this CHAPC. That leaves about 30 percent outside of the HAPC.

Certainly, the recent discovery of what Steve found last year, these newer reefs, not newer but reefs at 200 meters that we didn't even expect and didn't even show up on the other charts really are in addition to this. Anyway, the total area of deep sea coral habitat in this region, the Straits of Florida and northern Florida; if you add it up, exceeds the area of all shallow water reefs in U.S. waters, which is pretty amazing.

Starting from the north it's mostly this deepwater coral habitat, both lophelia and Enalopsammia. Primarily most of the big reefs are 700 to 900 meters. Of course, we've now found them as shallow as 200 meters. These are 15 to over 100 meter relief mounds with lophelia corals and sponges and gorgonians.

This is that sponge that in the lab has potential cure for pancreatic cancer that we discovered living out here in the Straits of Florida. It seems to be pretty much located in this coral habitat. Other fishery species that are related or occur in the coral habitat is the golden crab. Adjacent to the coral areas are the royal red shrimp fishing industry; further south, the brown areas, the deepwater terrace that we've been talking about this morning, the Miami-Terrace; and over on the Bahama side you had the deep island slopes of the Bahamas also providing a hard bottom habitat.

This Miami-Terrace escarpment; your primary hard corals are Stylaster coral, lophelia, Enallopsammia madrepora, gorgonian, black corals and you also have sponges on the order of 300 to 600 meters. This shows that eastern escarpment where it drops off from the terrace flat down to the Straits; and at the base of the mound you often find actual lophelia mounds.

On the terrace, on the limestone rock, which is a Miocene age rock and maybe actually a Miocene age coral reef 5 to 10 million years ago, that rock pavement and rock ledges and outcrops provide habitat primarily for sponges and coral and gorgonians and black coral and various fish.

And even any sessile species like sponges and gorgonians provide habitat for other critters, and all of these are filter feeders or a good number of them. This is below the photic zone for the most part. All these organisms are capturing food in the Gulf Stream or the Florida current and they're all crawling up on top filter feeding, and it's pretty cool. A lot of sponges; this is another deepwater sponge with potential activity for cancer; the wreckfish that we've seen out there and spawning out there; this is the energy project that we talked about.

Further south than the Portales Terrace you can see the black box is the CHAPC. The green area is potential hard bottom, and then you can see off of Cuba you have deepwater coral sites and a hard slope. Just this year Cuba started drilling in deepwater for oil, so there somewhere along that north coast is going to be a deepwater oil rig, which you can see if something happens to that, within hours that could be on these deepwater reefs as well as on our shallow water reefs, depending on the wind. Certainly the current will go north.

Portales Terrace – and just jump through this very quickly – very quickly this is a project we had looking at deepwater coral reef on our cruise last year off this Portales Terrace. We compared

sites within the CHAPC and within the blue zone, which is the shelf edge MPA site. It was the first time anybody had dove within that MPA site called The Humps.

That had never been multibeamed before or really dove before with ROV or sub. For the first time we got some good data there as well as we compared sites outside of those zones, hard bottom sites that are essentially unprotected. We used the UNCW ROV, a pretty nice ROV but very hard working in the Straits out there in that current, but we did pretty good.

We found this deepwater coral reef, which appears to be the southernmost one in U.S. waters down in the Florida Keys region; found these 9 species of commercially fished species, the snowy grouper, tilefish, snapper and so forth. Snowy groupers and these blueline tiles and the – what do you call that, the slimehead – it's kind of related to orange ruffy, right, in that family? There are deepwater species that are longlined, I guess.

AP MEMBER: Did you see lionfish out there?

MR. REED: Not here, luckily, but over in the Gulf on the Portales Terrace – I mean on the Pulley Ridge, everywhere. Just a quick breakdown, we were looking inside and outside the HAPCs, so just mapping the number or the density of the slimehead on the right and the blueline tile; the numbers outside of the protected areas and the numbers inside. Now they're not protected for hook and line, but for within the HAPC and so forth.

The last study we did was this Pisces cruise last year; part of the NOAA CI grants looking at these shelf edge reefs and deepwater reefs off of North Florida. We were looking at these sites, and during this cruise we helped Steve remap this area of that 200 meter lophelia reef, so we did multibeam and an ROV dive on it; a pretty neat reef.

Also within this cruise we were able for the first time to map this region of the Oculina Reefs north of the protected area. The bottom of that map is right off Cape Canaveral, and the blue polygon to the south is the northern limit of the Oculina HAPC. The red area is a region of where the old bathymetry, the old NOAA regional charts showed high-relief bathymetry and we went in and groundtruthed it with multibeam.

For example, this site here on the right is old NOAA bathymetric showing obvious high-relief features. We did the multibeam on it and just that one little stretch had over 100 individual mounds, 20, 30 meters tall. We groundtruthed these with ROV and they were all coral mounds, various amounts of coral; coral, coral rubble, black coral, gorgonian, sponges and quite a bit of fish habitat.

MS. KARAZSIA: Was that from the same depth as the Oculina to the south? Is that the same depth, the new mounds?

MR. REED: Yes, all between 70 and 100 meters. Then finally this new grant that we just received in conjunction with the University of Miami will be a big one with Kimberly, looking at this mesophotic reef, the Pulley Ridge off the Florida Keys; looking at connectivity. It's this region; it's just west of Tortugas, about 70 to 100 meters depth.

We'll be looking at are these mesophotic reef corals healthier than shallow water corals; are they being impacted by the warming sea temperatures; are they getting as many diseases, bleaching and so forth as shallow water counterparts? We'll be looking at genetics, we'll be doing sampling so comparing corals and sponges and fish with this mesophotic reef site with downstream sites in the Florida Keys.

MR. NEDIMYER: Are mesophotic reefs defined strictly by depth or are there some other feature that –

MR. REED: It's kind of vague. We had a NOAA Workshop a number of years ago on mesophotic reefs, and it's kind of designated between 50 meters and something greater, but kind of the deeper fore-reef, or it could be the top of a sea mound, but basically over 50 meters. This still has like hermatypic coral, so the coral, either gorgonians or hard corals still have algae and typically the reef has algae, so there is enough life for algae to grow.

That's quite variable. The Oculina Reefs at 70 meters do not have enough light to support algae. The coral at 70 meters there is pure white; Azooxanthellate, no algae. Seventy meters in the Bahamas, I had that one paper on distribution of coral in the Bahamas and we were finding Montastrea down to 100 something meters just depending on the light level.

MS. PUGLISE: Basically looking at the 1 percent light levels kind of where the cut-off is. And depending on where you're at; that's why the definition is vague at the deep end because in the Pacific we could be down to 150 meters, but usually in that area it's going to be 100 meters. The Caribbean is about 100 meters for the deeper end.

Then the other thing I'll point out is that this particular project, the South Atlantic Fishery Management Council is involved, we have a management board that is part of this to try and make sure that we're transitioning the information to managers and getting their input at the front end of the project versus waiting until the end of the project. The South Atlantic Fishery Management Council is participating on that. I believe it's Roger that's the representative.

MR. BLAIR: What is that Reed et al 2012 reference that is on a bunch of these slides?

MR. REED: It's a paper that's coming out.

MR. BLAIR: It's not out yet?

MR. REED: Well, some of them are in the paper; some are other reports that we have like – I don't know, it's either a paper or a report.

MR. BLAIR: I just wondered. It was on a number of the slides so I wondered what one place we should go to.

MR. REED. Most of the deepwater mapping is in a paper that's in press right now.

MR. BLAIR: In what journal? Once it comes out, could you let us know that it's available?

MR. REED: Sure, absolutely. It should be coming out this year. It has been accepted. We did have a survey on Pulley Ridge last summer. The primary species are flat platy corals like Agaricia, Montastrea cavernosa, very platy, and huge fields of this green algae called Anadyomene. It's like the dominant species down there along with coral and algae.

And unfortunately we did see evidence of something going on with the coral even at this mesophotic depth, and, of course, our lovely lionfish. The lionfish love – everywhere there was a red grouper burrow where they make these huge burrows the size of this table, about 2 meters deep, it would be filled with lionfish. You get rid of the grouper you'll get rid of the lionfish; no, really. Then our other projects are up the west coast of Florida, mesophotic and deepwater reefs that I won't get into here. Are there any questions at all?

DR. VAN DOLAH: As part of an effort that's going to be occurring through the Governor South Atlantic Alliance, there is going to be a concerted effort to capture a lot of the new mapped reef habitat data. Is this all going to be readily available for incorporation into that?

MR. REED: Yes, all these stuff with all these grants, the maps the multibeam go directly to NOAA, to the site folder where they store it all. Yes, all these data will be immediately available or quickly available, especially the maps and so forth.

MR. BLAIR: What was that effort again?

DR. VAN DOLAH: It's a couple of different efforts, but the Governor South Atlantic Alliance has received funding from NOAA to try to get a number of initiatives going. One of those is an effort that is actually funding SECOORA to take the lead in trying to develop a web-based or incorporate an existing web-based mapping product that has querable tools.

The Healthy Ecosystems Work Team is one of the four work teams of the South Atlantic Alliance and I'm chair of that. One of our goals is to map critical habitats, compile in a consistent framework critical habitat and critical species distribution data for all four states off the southeast; obviously relying on existing information that's out there.

How far that gets is a little unclear, because the Alliance has got to meet and sub-workgroups have got to meet to kind of come up with what are the data formats that are desired. Some of this data has to be distilled not so much in terms of habitat data, but in terms of other resource information. Quite frankly, most of it is focused on the shallower shelf habitats rather than deeper shelf habitat. Any reef habitat is obviously going to want to be added to the existing databases that are out there. You have a representative in your department, and I cannot recall his name.

MR. BLAIR: From DEP, probably; FDEP.

DR. VAN DOLAH: Yes. In any event, it's one of the groups that is dealing more with beach nourishment issues, so the SECOORA group had to pick topical areas that they might focus as a

demonstration type project. There was general consensus that sediment management might be one of those to focus on, because all the states are dealing with beach nourishment issues and where and what resources do you need to protect from those kinds of things.

That effort is just getting started. The funding came in February, I believe. The kickoff meeting was in late February. Some surveys have already been done. In fact, many people in your agency and other Florida agencies should have received that survey to try to identify what are the high priority habitats and resources that should be targeted.

MR. BLAIR: Just out of curiosity, is there a timeline for where you hope to have a product developed or is it part of the timeline of the grant at this point?

DR. VAN DOLAH: Yes, the grant is 15 or 16 months long - it started in February – an initial map product that I think will be available in some way, shape or form at that point in time. How far the Healthy Ecosystems Group gets in terms of mapping, trying to get a consistent framework for mapping various resources is a little bit more unclear. They are not actually funded to do anything yet, but SECOORA may help jumpstart some of that.

MR. BLAIR: Thank you, good information. Are there any other questions for John? Next we're going to hear from Steve Ross on Shallow Jacksonville Lophelia Sites.

DR. ROSS: I'm going to just review fairly quickly a couple of talks that we gave at the Deep Sea Coral Symposium in April in Amsterdam. I'm not going to give those talks as they were presented there. I picked bits and pieces from them and I added some to this first one because of particular interest here at this meeting.

Last year at the AP meeting Sandra Brooke gave a review of what we knew about this new shallow water site off of Jacksonville, and I'm going to repeat only a little bit of that but try to bring you up to date on some things that we know about it now. We're still working on this site. To put it into a chronological sort of context, this is a fairly new discovery.

Sandra and I could not participate in the Navy's consultant's first cruise to map and document this area so we put my former research associate, Andrea Quattrini, on the cruise. In May 2010 she discovered what appears to be a lophelia bioherms or what are lophelia bioherms with multibeam mapping and ROV groundtruthing.

In October of 2010 Dave Naar was contracted by NOAA to do some multibeam mapping in that region, but it was offshore and deeper, and I'll show where he mapped. We followed in November 2010 with a similar cruise on the Ron Brown and added to that offshore multibeam mapping and then worked both the deep and the offshore areas with Jason ROV and CTD transects. Then as John mentioned just a little while ago, Andy David, and he conducted a Pisces cruise that went through that same area.

This is the region that we're talking about and it overlaps with this Navy Acoustic Range. These gray boxes are the area of interest to the Navy for this Acoustic Training Range. I'm not sure

exactly what the acronym for that is at this point; I can't pronounce that. I'll just say Navy Training Range.

These are the multibeam maps that were collected in that 2010 cruise and you can see some areas of rough bottom in here. The black dots are Jason ROV dives. These red dots are from some past 2004 to 2005 JSL submersible dives that I did. John has had a few dives up here. Of interest, Charlie Paul worked this area extensively in I think 1998 or '99 or '97, somewhere along there. He published his paper in 2000. He had 20 JSL dives and 1 NR1 nuclear sub dive in this area.

He did a very thorough paper of this region, but he did not review these dives individually, so you can't pick out exactly what kind of habitats were in the region of these dives. These four in particular are of interest because they're on the shallow end here. The red is our existing CHAPC, and the yellow box here is what Sandra and I threw out to the AP last year as a recommendation for expanding the boundary, and we'll get back to that a little bit more in a minute.

Oceanographically – this is a little bit hard to see on this screen – we did a long CTD transect across the shelf and slope up here – actually this is two transects – and another one down here for comparison. Even though you can't see the numbers here, basically what's going on is cold water is upwelling onto the shelf as shallow as 50 meters.

We're getting temperatures of 8, 10, and 12 degrees in this region above 200 meters, and those are temperatures that are typically characteristic of 300 meters and deeper, which are down here for comparison. Actually this darker area shows the Gulf Stream. This is a picture of the day that we were out there. This is that shallow site of Jacksonville and this is the comparative site, which has been called Triceratops, in about 400 meters or so, 430 meters off Cape Canaveral.

You can see most of this site and a lot of the other deep coral sites are well within the main body of the Gulf Stream. This site is off to the edge; so as the Gulf Stream pulls offshore, cold, nutrient rich water upwells onto the shelf and the slope. It eventually gets entrained into the surface waters and triggers phytoplankton blooms.

What seems to be unusual about this area – we're still trying to look into this more – is that this kind of upwelling appears relatively permanent here and this productivity cycle appears relatively permanent; whereas, other places along the western edge of the Gulf Stream, it's irregular.

This kind of upwelling can occur in a lot of different places as the Gulf Stream moves back and forth, but it seems fairly consistent here. The oceanographers have documented this in the past but nobody has connected it to benthic biological activity. What looks like is happening is there is a well-established cold water community in fairly shallow water and it's a community that appears to be established for a long term.

DR. FEDDERN: How deep does the Gulf Stream water extend; does it get down to the bottom?

DR. ROSS: Yes, it can. Of course, there is a declining temperature as you go down, but we've seen Gulf Stream intrusion in North Carolina down to about 370 to 400 meters. It's not the 30 degree water that's on the surface; it's 15 to 18 degree water. The Gulf Stream axis is tilted like this. As the Gulf Stream moves in and out, that bottom edge hits the slope and that temperature water is near the lethal maximum for lophelia. That's another thing that is unusual here. These are what you might consider borderline communities, but the indication is that they've been there very long term.

DR. FEDDERN: Does the bottom topography influence the course of the stream?

DR. ROSS: No, not here. It's just that that topography sticks up so it hits the bottom of the stream before the other part of the bottom would. It's anywhere from 20 to 50 meters off bottom, so it hits it a little sooner, but it doesn't influence the path of the stream. That's a bigger issue. Something the size of the Charleston Bump, which is a gigantic feature; here you can see deflects the Gulf Stream offshore right here.

That's why there is that bump out. Then it wiggles all the way up from there on, but it also wiggles through here as well. This is a close-up of the coral mounds in that area, particularly the one that we've got some data on. It's a few bottom photographs so a lot of these letters if you can read them match the photos, and I didn't pick out all the photos that we have.

This is multibeam data from the Navy that they released to us. You can see it's a little bit to pick out, but this is a fairly low-profile hard bottom that is just rock. Attached to that rock is a number of corals and sponges and there is a lot of fish activity around there. That occurs all through this kind of track.

There is also just open, coarse, sandy substrate, and there are large areas of mostly what appear to be lophelia coral rubble. These rubble fields, like this one up here, occur some distance from the main mounds. Of course, this could be a small remnant mound, but there is coral rubble scattered throughout this region.

That indicates again that this coral activity, this cold water activity has been going on for quite some time. There are scattered boulders that are quite large through this area. This one here occurs right there, covered here again in lophelia, the white stuff here. Then these two pictures are from the top of this mound, which is at 212 meters.

The base of the mound was about 245; so it's a 33 meter tall mound. That appears to be a bioherm, a sediment coral matrix that's probably formed from lophelia growing and trapping sediment. There is a large coral bush on top of that mound. These two dives, these ROV dives here were conducted in the Navy cruise and they released those data to us.

This was our dive on the Jason from the Ron Brown. This was a whole day exercise from morning to late afternoon. These were shorter dives. This one had a problem with the current and so it missed this mound and just caught the edge of it, but on that edge there was an indication of coral rubble. This is a little difficult to see, but we got all of the raw multibeam data from this area and reprocessed it.

There are what appear to be three bioherms here, and that 33 meter mound is this little dot there. That's where we have the ROV dives and that was the second one, and then there was a third one just off here in even shallower water. You can see there are other areas of rough bottom through this.

This picture is a bit difficult to see here, but with all of the bathymetry lines in it you couldn't pick out the stuff so we stripped those out just to have the colors. There are a couple of close-ups of one of the rocks. It's a little bit dark in here, but these are large blackbelly rose fish in here and along the edge of the rock a golden crab on this same rock, lophelia colonies scattered about any hard substrate here.

Here again, these water temperatures are four to five degrees colder than what we would expect at these depths. The other thing that is unusual about this site though is that we have relatively little data, and we've only identified I think 12 species of fish from this area. The dominant species like blackbelly rosefish and one of the hakes, limonema and a Synaphobranchid eel are much more abundant than we've seen at any other sites during the ten years that we've been working out here and they are of larger sizes.

Here again, this is sort of an indication of increased productivity. There was around this rock something like 12 to 15 blackbelly rosefish that were quite large, larger than we normally see around these reefs. Here are some of the Synaphobranchid eels. Here again, mostly on places where we've been we've seen only juveniles of this species.

This is a blow up of this area. All of these tails are this eel sticking out, incredibly abundant. We usually see maybe one per dive hiding down in the coral and they're small. We saw quite a lot, probably 20 of them in this picture. There was a lot of stuff going on at this site, unusual biological activity in our experience.

I'm not going to read through all of these. I've pretty much already said of them, unusually cold temperatures, usually the kind of temperatures we'd see 2 or 300 meters deeper; a lot of rocky habitat scattered through this area including bioherms. I've already said that the fish were unusual in being more abundant and larger.

The community seems to be thriving and it seems to be driven by this more or less permanent upwelling of cold water that probably drives the productivity as well as keeping the temperature down. That was the end of the talk, and I've got a couple of things to throw in here now that we're trying to pursue in this area.

We've got a mapping request out for this summer to try to fill in – we've got the Navy data here in these boxes. The colored area are what we and David Naar have mapped, and we're going to try to get the Nancy Foster to map these three boxes or as much of them as possible as they make a transit to another area. We've requested two additional days of time and they're receptive to that.

It fits into their schedule with this area as the priority, and then second and third priorities to try to fill in these places. We've also found out that the Oceana's Explorer has transited this area. We didn't really know this but they're mapping everywhere they go. I just found this out a couple of days ago that they've already mapped this strip.

We put in a request for their return trip out of the Gulf of Mexico for them to map in this area and this area. If they get to that before the Nancy Foster, then we could modify our request to the Foster to make their task more feasible. There is a possibility that we could fill in this whole area this summer in terms of mapping.

One thing I'd like to interject at this point is that this committee make a recommendation to the council that a letter be written to appropriate people, Marine Operations Command at NOAA with CCs to whoever is needed, to attempt to coordinate some of this mapping a little bit better with the council and with the rest of us who have been out there.

Sometimes it's a matter of just adjusting these cruise tracks a very small amount in order to fill in gaps that are appropriate or to hit an area that is more important. All of this data is useful and interesting, but to me it would have been more valuable to continue following ridges and joining together maps that we've already got instead of ending up with a patchwork here.

I'd like to encourage that possibility. There are a lot of boats out there and now they are all starting to turn on their multibeams and they are also mapping at a faster speed. We're finding out that mapping at 10 knots is not as bad as we thought if the sea conditions aren't so awful. We don't necessarily have to slow down to 6 knot mapping speeds.

There are a lot of possibilities out here to fill in data. Back to our recommendation for an expansion of the CHAPC, this was the fairly simple box that Sandra and I proposed. This little colored area in here are those bioherms and you can see the rough bottom in these maps and all through here.

I hadn't seen this, and I'll have to give Sandra credit for looking at this and realizing that it might not necessarily meet our needs. This was the suggestion that came out of additional consultation with the shrimp fishery I think and also looking at VME records. Anna I think add to that. The VME records indicate fishing there, but I'm going to get to that in a minute.

MS. MARTIN: Yes, what Steve has projected here, this is in the Comprehensive Ecosystem Amendment that was in your briefing book. The Coral Advisory Panel recommended the chart there on the left as far as the proposed expansion of the western boundary of Stetson-Miami Terrace there to incorporate the area of known mapping habitat, what Steve is describing about the shallow lophelia discovery.

The chart there on the right was developed by Roger on our staff. I'm sure you are all aware he's our point person for developing these charts for all of our amendments and he'll be here tomorrow to talk in further detail about these spatial areas. The Coral Advisory Panel recommendation was modified based on input we received from the Shrimp and Deepwater

Shrimp Advisory Panel and a lot of the feedback we heard during the scoping meetings that were held earlier this year about the Coral Advisory Panel's recommendation.

It was modified to incorporate the area of known mapping habitat while excluding some of the higher concentration areas of VMS activity for the royal red deepwater shrimp fishery. We do have that VMS data. We know that all of those in the South Atlantic fishing for royal red shrimp also fish for rock shrimp, so they are required to carry that VMS equipment and so we have that data.

The modification here was based on that specifically. It's an options paper. If the Coral Advisory Panel needs to make some further recommendations for that, I would encourage you to do it during this meeting. The council will be looking at the document in June to make some additional recommendations for what should be further developed into a public hearing draft.

We're still at the stage where we can seek guidance from the advisory panel on some tweaks here to the alternatives. Again, we're kind of looking to have a lot of these discussions tomorrow, and Roger is going to be here with us tomorrow to present some of the spatial representation for these areas that he has put together.

MR. BLAIR: I just want to reiterate we can have a brief discussion on it now, but this is one of the major things we want to touch on tomorrow. Any highlighting notes that anybody would like to make or, Steve, if you'd like to make at this time, but do keep in mind this is scheduled for discussion and these explicit items are scheduled for discussion tomorrow.

DR. ROSS: Right, I do have some tweaks to recommend. I think it's good that we think about them ahead of tomorrow, because it gives us some time to be prepared for this. Obviously, looking at the multibeam map, I have a couple of issues with this map. One is that there is some obvious structure here that is rocky area that is excluded from the protection zone. I don't see the justification. In fact. I'd recommend that is not a good idea.

This border squeezing in this tightly sandwiches this small mound area pretty tightly without much of a buffer zone. Now, there does appear to be a fairly open substrate area down here and this border could be moved to the north. I don't see the justification for this protected area, which we didn't originally recommend because there doesn't seem to be any hard ground up there.

Of course, that's fine in a way to protect more area, but I don't see the justification for including this, and I don't see the justification for excluding this just based on a few VME dots. My recommendation to the committee, if further discussion is needed, would be to adjust this boundary to include the hard ground, give a little more buffer around this area and I'm neutral on that.

MR. REED: I agree with what Steve says; just looking at multibeam sidescan sonar data for many decades, it doesn't look obvious probably to the lay person what you're looking at there, but just that little roughness is probably in a definitely hard bottom of moderate to high relief. I would like to see the actual multibeam maps, if we have that, where we can really zoom in. But

certainly that cut on that southern edge is not justified just based on the multibeam map, and the northern area certainly looks relatively flat and really not justified to bring it up to the north also.

DR. ROSS: Right, if this is a 33 meter mound right here, this is obviously somewhat bigger and larger and definitely has to be hard substrate. I can't imagine that it's not considering that most of the sediments in this area are fairly coarse and sandy. They are not going to be consolidated sediments that are making these structures. This is the area that was excluded. I'd recommend the border be somewhere down here; or if you have to draw strange borders, you could come up like that. It seems like we draw some awfully strange borders.

MR. HARRIS: Law enforcement does not like strange borders.

DR. ROSS: Well, we've got a few already in the CHAPC that we brought up last year. I don't think we ever got resolution on those exactly.

MR. REED: Quick question for Anna; you mentioned the VMS is used by the rock fishery and by the royal red fishery if they also rock shrimp. If they're not rock shrimping and they're just doing straight royal red, they don't have to have it?

MR. CUPKA: All the royal red shrimpers, there are not that many of them, but they all also rock shrimp. They all have VMS.

MS. MARTIN: Right, we have confirmed that.

MR. WAUGH: Anna, could you restate that so it gets on the record to people that are listening on the web here?

MS. MARTIN: All of those fishing for deepwater shrimp in the South Atlantic are also fishing for rock shrimp. All of the population of deepwater shrimp fishermen in the South Atlantic do have that rock shrimp permit and they're required to carry the VMS equipment. But another point I wanted to make just for consideration, since Steve has brought this up today, is another factor into the modification for the Coral Advisory Panel's alternative there, and something that wasn't discussed during your last meeting – I guess this is better presented in the document, one of the figures. It shows the Coral AP's recommendation abuts right up to Shrimp Fishery Access Area 1, which was put in place with the original designation back through CE-BA 1.

As you all know this was a very deliberative process working with the fishermen and industry representatives to put those access areas in place when the original designations were approved back in 2009/2010. That is another reason for this oddly shaped structure. It's not depicted on Steve's chart there, but the Coral AP recommendation does cover a portion of the Southern Shrimp Fishery Access Area 1.

DR. ROSS: Like I said, there is area down here that we could give up, but I don't think this area. Now, we are getting better data on what happens on the bottom than we've had before when some of these boundaries were made, so it seems like to me they should be adjusted accordingly. That's something I guess we'll get into more tomorrow.

I was going to end this particular talk with just a few recommendations besides the one to ask for increased coordination with the vessels that are out there mapping is that in some fashion we expand this boundary, perhaps some modification between the two proposals that are on the table; encourage completion of the multibeam sonar in this area.

This is an extremely complex area that has large rocky ledges, flat rocky areas, and bioherms across a huge depth range, and potential oceanographic features that are of interest. This seems like an area to get more data from. And along those lines, encouraging the Navy to expand their research in this area.

They are going to continue to have a large impact here over a long time period. They seem to me to be willing to do some additional work but encouragement from the council and from NOAA would be helpful. Analyzing Charlie Paul's dives additionally would be good. We were hoping to include that in our SEADESC Project that just ended, but we ran out of time and money.

I have acquired all of Charlie Paul's video data and all of his metadata and the video is very high quality. We have cleaned up the dive tracks and plotted them, but we haven't analyzed all the video. We digitized his video. That would be useful to add to our pool o data in this region. I'll stop there for that first part, if there is any other discussion.

DR. ALEXANDER: I just wondered how accessible that Navy multibeam data is.

DR. ROSS: Well, they released that one box around the mounds so that we could use it in our presentation. That's maybe 15 percent of what they've collected out there. The indications are they will release the rest of it. It's just that I speeded up the process for that box to make it happen. They did release the ROV data as well. I think they will do that. I've got an active request in for the rest of the data, but I haven't gotten an answer to that yet.

MS. KARAZSIA: They made at least a verbal commitment to us that they would release that. I don't know if you want me to talk about Navy stuff now or wait until you're finished the next part of your presentation.

MR. BLAIR: I think because it does kind of fall right into it, it probably would be a good timing to go ahead and do that. Steve we'll come back at the end of your second presentation because I want to make sure that we capture some of the recommendations that you have. Again, I think it was a really good kind of primer for tomorrow's discussions on what we're going to be challenged with in trying to optimize the CHAPCs for protection purposes in light of the other pressures that are ongoing in that area.

MS. KARAZSIA: I just have a couple slides on what it is that the Navy is proposing to do in this area. It is referred to as the Jacksonville Undersea Warfare Training Range, and like Steve mentioned it is to test some acoustic equipment and also some other type of training facility or training options.

This is an area that – the green box – that they have proposed to place this range. It also involves some cabling to shore, some trenching and cabling to shore, and that's that lighter colored, this path right here. Then they amended this to include this buffer area, which is where the shallow water lophelia sites are located.

Like Steve mentioned, they have some multibeam and ROV survey information from this area. This is essentially what they're proposing to do, These black lines are cables, and it's hard to see but there are little dots along these cables which are nodes. They are building this underwater cable array that attaches to nodes to test some acoustic equipment.

This is a map that the Navy created. They call it a Habitat Sensitivity Map with the red areas being the most sensitive; the hard bottom, likely deepwater coral habitat; and the green areas being soft bottom habitat. We did succeed in getting the Navy to modify their design. There is a break in the shelf edge right here. You can see that there is a concentration of cables through this break in the shelf edge. John asked what depth that is and I don't have the answer off the top of my head.

This is also just their cable-to-shore path. Here are some estimates of their impacts. Unfortunately, for EFH tracking leaves acres, so it is over an acre of impact to what they refer to as highly sensitive on those habitat sensitivity maps, and 46 acres of hard bottom pavement. We're in an informal consultation right now to the Navy.

One thing that we've requested is that they exclude this buffer area where the shallowest lophelia, the lophelia in 200 meters water depth, that they exclude this area from their training range. They have indicated to us that is a possibility, that the cable array won't be constructed in this area. That was one of our recommendations.

We also asked that they evaluate bottom-disturbing impacts associated with maintenance activities associated with the cables and the nodes. We're working on this one. They've indicated that they can – I think its 300 total nodes and that they can still have an operational range if 10 percent of those nodes are damaged or need to be serviced.

We've talked about possibly having them prioritize node maintenance activities so that bottom-disturbing activities won't occur in the most sensitive habitats. If they can operate without those nodes, then to do so and prioritize repair activities with nodes in the less sensitive habitats. Then this last one is that we've asked them to develop a sequential mitigation plan that includes compensatory mitigation.

A few months ago I had sent an e-mail out to the whole advisory panel asking what we should recommend for this because the Navy didn't include this. They provided to us what is called a sequential mitigation plan, but they didn't include the compensatory mitigation part. Some of the feedback I got from that coordination was for the Navy to provide all the multibeam data, all the ROV tapes and track lines in this area, some additional research and long-term monitoring of the sites along this area with experimental growth studies on the coral.

I think that was your recommendation, John. Sandra had recommended possibly deployment of landers to collect some long-term high-resolution data to find out really more about what's going on at these shallow water sites; also some monitoring close to the deepwater MPA sites to see if maybe poaching is occurring; and then also the last bullet which is confirmation via visual and multibeam sonar surveys that this is being driven by a permanent upwelling.

I think that came from you, Steve. Essentially, like typically in the shallow water coral projects that we review and require compensatory mitigation, it's usually some sort of a restoration activity or habitat enhancement type activity. It doesn't seem like we have that option for deepwater coral sites.

We've discussed with the Navy them providing us with some data or committing to some studies that we would be able to accept in lieu of restoration or enhancement type activities, but we've indicated to them that those studies have to be closely linked to South Atlantic Council priorities to better manage the site.

They've indicated that they're willing to give us all the data that they have – informally they've committed to this – and that we can share at the council and our deepwater coral scientists. They're hesitant to commit to some of the additional research and monitoring-type studies that we've recommended, but they've indicated that it is a possibility. That's just kind of where we are with the Navy activities. We'll let you know how things are going.

DR. VAN DOLAH: I've been out of the loop on this a little bit. It sounds like they've definitely locked in on this Jacksonville Area as their preferred location; and if so, when is the projected start date and period of time for construction of all these cables?

MS. KARAZSIA: They are looking to construct the site with FY-15 funds. They initially proposed the site off Cherry Point, and because of the opposition to having this facility in that area, that's why they're looking at Jacksonville now.

DR. VAN DOLAH: Right, there was some concern that they were possibly even going to be looking off Charleston –

MS. KARAZSIA: Right, that was one of the options.

DR. VAN DOLAH: – if Jacksonville didn't work, but it sounds like this is kind of getting locked in.

MS. KARAZSIA: It is.

DR. VAN DOLAH: Good. All I can say is Florida is –

MS. KARAZSIA: Not in your backyard.

DR. VAN DOLAH: – getting to be a very wired state here offshore.

DR. ALEXANDER: I had two questions; the first is are there any other cables that are going to be associated with this, because I thought it was going to have a much wider sensing network associated with the training zone.

MS. KARAZSIA: The black lines in this figure are the cables, so you thought there were more?

DR. ALEXANDER: But beyond this box; I thought there was supposed to be stuff up off Georgia on the shelf and other areas, all over the shelf for them to keep track of their activities. That's not the case?

MS. KARAZSIA: Associated with this range, the Jacksonville Undersea Warfare Training Range, this is all that they've proposed. I don't know if there are some other efforts or parallel efforts that are –

DR. ALEXANDER: No, this is the range that the federal announcement came out and comment period closed a couple of months ago, right, because Grays Reef was concerned about impacts of the sonar activities.

MS. KARAZSIA: I think that's actually a separate Navy – I don't know if they're coordinated to some degree.

DR. ALEXANDER: They've got another one?

MS. KARAZSIA: Yes, there are a lot of Navy activities going on, but I think that is being analyzed under like a separate activity.

DR. ALEXANDER: Well, that would probably be good for us to figure out whether there is additional activities like this proposed for the Outer Shelf, because it seems like these corals are potentially all over the place. Then my other question was that last recommendation that you got from the group, I didn't really understand it. It was visual and multibeam documentation that it's a permanent upwelling system. Why would you use visual or multibeam instead of some sort of a physical oceanographic array that measures salinity and temperature and currents?

DR. ROSS: That's exactly what we'd do; that got a little confused. The lander deployments and any moorings and CTD transects would document that upwelling, particularly the landers. We recommended at a minimum a shallow and a deepwater lander with potential moorings in between and CTD transects.

The visual and multibeam data is supportive of that, but for different purposes, too. One of the issues with that upwelling system is that while we know it exists, we don't know the extent of it north and south or any seasonal characteristics and exactly what the temperature variations are.

DR. ALEXANDER: Harvey Seim has done some modeling, and I think he's published on this as well. He might be able to give you some theoretical distributions and timing and those sorts of things.

DR. ROSS: Yes, I've talked to Harvey about this; and one time when I did talk to Harvey about it, his indication was that this could happen anywhere and it could move around. That was my impression is that it did move around. There are a couple papers out here by Atkinson and Yoder and Associates that indicate this is a fairly consistent feature in this region, even though that data is fairly limited as well. We're now going back and trying to look at historical satellite data on chlorophyll blooms to see how consistent those are as we work on some other parts of this.

MR. REED: Well, this upwelling event, it is pretty well known that it occurs in the summertime in on the nearshore region of Central Florida, certainly off Fort Pierce and that area; yes, the whole region you get the big summertime upwelling events, which it goes from 80 degrees down to 60s, 50s very quickly and associated with fish kills on the shallow water shelf.

When I first did the Oculina Growth Paper in 1980 something, I had temperature recorders at the shelf edge on the Oculina Reef, 80 meters, and it showed at least in that region that the upwelling occurred year round, but it was just coming right up on the edge of the shelf but not coming all the way inshore.

It's coming inshore in the summer, but at least the shelf edge Oculina it's just kind of sloshing back and forth almost monthly where you get a 10 degree centigrade drop in 24 hours and immediately afterward you get this big nepheloid bloom because you have an increase of nitrate and phosphates. And so immediately after you get all this organic goo in the water, which I think was a big determiner of why the Oculina Reefs are there, I think you're getting a very similar thing, a nearly permanent upwelling, at least down in Central Florida. It is very likely to go up in the northern – the same system going up in northern Florida, too.

MR. BLAIR: Can you back up to the impact slide? These areas are the areas associated with the trenching and laying of the cable alone?

MS. KARAZSIA: The cable that will be installed to shore, they are going to trench for that cable. These cables will largely just rest on the seafloor. Oh, I'm sorry, maybe I should back up. This part right here, this will be trenched and buried, this cable, but these cables are expected – trenching isn't proposed just to lay on the seafloor, and I believe they'll be anchored or stabilized largely by the placement of the nodes, which are larger pieces of equipment.

MR. BLAIR: The areas then in that slide on the impact are literally just the footprint of the cable on the bottom?

MS. KARAZSIA: Yes. They might have included some room for movement; I'll have to go back and look at that.

DR. ROSS: Do you know how they are going to lay the cable? I mean, it looked very precise and going around, but, it's often not that easy to do. I know for the cable studies that we've done in 2 to 400 meters further south of there; from where they dropped the cable, at least if they're dropping it off of a cable boat to where it landed varied about 100 to 150 meters from the point of drop to where it landed at depths of 200 meters to 300 meters.

MS. KARAZSIA: That's a good question. I'll have to go back and look, but I hear what you're saying and that after deployment it might not look quite like that.

MR. BLAIR: Okay, any further questions on this? Jocelyn, is there anything relative to the recommendations or anything else that you need to ask of the committee?

MS. KARAZSIA: This was in response, and I probably need to expand on each of these bullets, and I obviously got this one a little bit wrong. I'll try to do that coordination while I'm here. Essentially we make recommendations to the Navy as part of the EFH consultation process, but it's really up to them to implement those recommendations.

They do have the option to not implement our recommendations, because the training range and the Navy's goal is to protect the nation for security issues. We're hoping that the outcome will be something, but I'm not sure if we'll be able to get everything on this slide.

DR. FEDDERN: How would an acoustics package help you find spawning activity?

DR. ROSS: Because a lot of fish have species-specific spawning activity sounds, the groupers in particular. That's less well known in deep sea fish.

DR. FEDDERN: Okay, I was thinking of the coral spawning. That's what I understand; that's why I asked the question.

MR. BLAIR: Thank you very much, Jocelyn. Steve, kind of a followup on your first presentation; the path of the multibeam that you found was being done looked as though it was along the 400 meter. Was it near that or was it to the east of that? It seemed to follow a contour at least, and I was curious.

DR. ROSS: It was close to that. I understand where that path came from. It might have been a little inshore for them. We'll bring that slide back.

MR. BLAIR: I know you have that a as a path. Is that information and data that you have in hand or just that you know is available?

DR. ROSS: We will have it shortly. It was just collected. I just found out it was just collected a few weeks ago, so I'm not even really sure it's off the ship yet. We will capture that data and the next track, wherever it will be, we're trying to work with them to coordinate that track. Their original intent was to overlap their first track, but I can't tell from this map which is the 400.

MR. BLAIR: It's just to the left; it looks as though it's just to the left of that. Go a little bit further west, right there I believe is the 400.

DR. ROSS: Okay, that's probably right. It goes inside and out of it. That's right; I don't think there was any intent with this exactly.

MR. BLAIR: We'll continue this tomorrow relative to some of the areas, but relative to the area suggested by the shrimping group to the northern areas, whether we need to go that far north or not, but because of the relief that is in that present northeast corner of the area of expansion –

DR. ROSS: Where?

MR. BLAIR: To the left, on your left grid in our proposal, the original proposal. Yes, up there you would assume there is some carry-on of that type of habitat to the north, so some extension, but possibly – I agree with you that we don't need to include areas that are pretty much documented as not having any.

DR. ROSS: Right, whether we move this up a little bit north, we don't know where this ledge terminates, but it obviously doesn't get too much further north, because this is very flat. A lot of times these taper off, but there is no indication of it tapering off up here.

MR. BLAIR: I'm sure you have areas that you probably have a concern and desire for that future mapping tracks, but that could be a good high priority aspect to allow delineation of that a little bit better.

DR. ROSS: We made that our last priority, but there are a lot of arguments for which way to arrange those. The only reason we made this a first priority is to try to join these two big areas together to see – there is a lot of rugged area here, here and here, and we want to see how those join together; and here. That was our justification.

Then up here there was an interest in seeing whether this part continued and joined these ridges, and then there was an interest in the inshore area from that MPA. But you could just as easily argue that this is important, too.

MR. BLAIR: There is a lot of importance to that one and not enough data.

DR. ROSS: Yes. We estimated that this area could probably be done with two days, particularly if they didn't remap the Oceanus tracks, and so we haven't gotten a word back from that. But there again, a word from the council to the Foster would be useful there, too, because our request to them is somewhat informal at this point. It is made through NOAA through Andy David, but still it's an informal request without anybody else backing it up except me.

MR. BLAIR: I think that we can probably work on doing that and some suggested verbiage would be appreciated.

DR. ROSS: Good, because that happens this summer; it happens pretty quickly, so they need to be considering that now. I need to make sure too and mention as we get into the rest of this talk that Sandra couldn't be here and regrets that, but I need to make sure and emphasize that these recommendations and these talks are jointly done with her and her post doc mail will have helped with some of this talk as well, I'm supposed to say that. Tell her I said that.

With those recommendations and the ones we made earlier, that is the end of this first part. There is a really huge area. It goes beyond this 200 meter shallow coral area that we found. It's probably one of the more dynamic places I've seen where we have deep corals across such a wide depth range. I'm not sure how you feel about that, John, but it's a pretty interesting area, a lot of activity here. Okay, Margot.

MS. STILES: I think you just spoke to it a little bit, but I was wondering since it goes up to 200 meters if you think this is an anomaly or if there are other places that you want to check out in the future. I agree that the boundary adjustments should stick to what we know, but I was just curious because I know before we were really set on that 400 meter boundary, and I don't know if that was because that was the extent of the survey. I can't remember if there is an actual sort of physical break there.

DR. ROSS: There is not a real hard physical break there. One thing I was looking back through our notes from last year's meeting, and we talked about temperature isotherm boundaries. There was a long discussion about whether it should be 8 degrees or 10 or 12, and I think Sandra made a case for it being 12.

The thermal upper limit seems to be a little higher than that from what we've seen, maybe more like 14 degrees, but they can't tolerate that for very long. There is going to be a limit somewhere around 200 meters where it is just going to be too warm along these areas. Whether it's seasonally or not, they can't tolerate much more than a week or so at around 14 degrees, so 200 meters, 180 is going to be close to that.

We have seen sprigs of lophelia. I think John has seen them down south, Portales or Miami-Terrace up toward these depths, just small colonies. We just said last year that we've just seen lophelia on the Snowy Wreck. It was there all along. I just didn't recognize it, and Sandra picked that out. That's at 250 meters, but there again those are small colonies, and they look like they are borderline.

MS. STILES: Is a sprig a baby or is it a dwarf; it sounds like a broccoli, actually.

DR. ROSS: That's a good question; nobody knows.

MR. BLAIR: It's one of those scientific technical terms that we have to use every once in a while.

DR. ROSS: That's not known.

DR. ALEXANDER: Yes, Steve, I was wondering, we've already seen today that you can use the old NOAA charts and where they show rough topography, it matches up pretty well with the multibeam. In terms of prioritizing which areas you want to multibeam and given that you seem to be focusing on where you have rough topography trying to tie these things together; would it be useful and have you or has anyone yet done that exercise, just looking at the NOAA charts to see – I mean in this area?

DR. ROSS: Yes, John has.

DR. ALEXANDER: Right, I thought John had done that so it would seem like he could draw lines and tell you where your rough topography is in general, and then what you'd really want to do is paint the areas in between to pin down where it disappears, because it's always the edges where you don't quite capture it in the NOAA bathymetry sometimes.

MR. REED: That's true, those older charts, the contour charts seemed to be in this region quite good where they showed high relief. Every time we dove or did multibeam, it was high relief. The converse is not true. Where it's flat we found numerous cases where the old charts showed an area to be totally flat; I mean just straight contour lines.

We went back to it and actually this Triceratops Reef, lophelia reef just north of there, the contour charts showed the bottom to be flat, and I went over it with multibeam and found five individual 60 meter mounds, 60 meter mounds that did not show up on the previous charts.

DR. ALEXANDER: Well, sure, if they are isolated little things sitting in the middle –

MR. REED: They weren't isolated; they were big.

DR. ALEXANDER: No, if it's an isolated feature; you know, when they collect bathymetry, they go in lines, right, so if they don't go over it, its flat. I'm all for multibeaming everything that you can, and I would like to have the whole EEZ of the U.S. multibeamed, but it's all a matter of priorities. I'm just trying to see if there are ways to –

MR. REED: Well, I would think based on this 200 meter feature that we know that's there; the next big gap south of there, we have very few data, no ROV dives or anything south of there. We really just found this site based on the Navy wanted to go out there, and so that's why it was surveyed.

I would look south of there, and then there is a lot of work, the borderlines where we're not too sure about between the no fishing and the fishing zones, which I outlined in the golden crab paper. The golden crab report that I did for the council showed several sites within the CHAPC that are open to crab pots and trawling, where there is good bathymetry to show there is definitely high-relief bottom there, and it's right within the crab zone. Those areas I think are a priority to look at if we have time some time.

DR. ALEXANDER: Then does that argue for just assuming that everything that looks rough we don't need to map, and we should be mapping the flat areas to target and identify the isolated coral zones, because they're the ones that would be most likely missed?

MR. REED: No, personally I would think we should groundtruth where we know there is high relief. We have no data other than – the old charts, it shows there is high relief there and that's what I would target first; go there and do an ROV dive or a multibeam just to verify it. In some cases, every time we do this we find some areas just incredible habitat and very important fisheries habitat, like the wreckfish site that we found. I think as far as priority, let's look at the

sites we have data that's high relief and then we'll work out through the flatter areas where we have no data.

MR. BLAIR: I think that it is a true prioritization aspect of it, and I think that it's been the kind of perspective to make sure that we're identifying the largest, greatest, most important aspects of it knowing that in the process we may not hit everything. But by the same token, there are multiple use resources here and to some extent we have to consider where we are going to be putting our energies for protection of those resources.

I do think that from we have seen over the years, the aspect of anytime there has been relief mapped that they have gone in to evaluate, they found the appropriate habitat. I think that is getting close to be a given that we could utilize and we probably will be utilizing, whether or not mapping data is existing at this point. I think that's something that John and Steve have both proven over time and time and time in their dives that is something that has held true.

DR. ALEXANDER: I guess maybe that was the thrust of my comment, that how many times do you have to go down and groundtruth the rough area before you're pretty sure, since you find good habitat every time you go down.

MR. BLAIR: It is, but when you're having competing groups and so forth, then they see it simply as no data and you can't tell me until you see it. We'll have to work those as we come to them. Okay, we want to kind of keep moving along here.

DR. ROSS: We gave as extensive as we could in 15 minutes review of 10 years of deep coral research in the Gulf of Mexico and the Southeastern U.S. and certainly I can't hit all of that here, and most of you have heard a lot of it before, anyway, but I want to give you a few highlights of what we did cover.

We reviewed the major deep sea coral study sites that have been occupied for the last 10 years in the Gulf and the Atlantic by a whole variety of people and tried to put those in an oceanographic context of both the loop current and the Gulf Stream, theoretically linking these areas, but I'll say something in a moment about that probably not happening.

All of these dots are mostly lophelia-dominated deep coral bioherms or lithoherms or in some cases a shipwreck. These are two oil tankers torpedoed in World War II absolutely covered in lophelia. This is the wreck of the Republic sunk around 1860s or so, and also has a fair amount of deepwater coral, less than some of the other wrecks.

If you watched any of the Oceanus Explorer dives in the last few weeks on some shipwrecks here, a lot of new coral sites in the Gulf of Mexico. They also worked the West Florida Slope as well. One of the interesting things maybe from the council's perspective is that we and others have used a lot of the same methodology throughout this whole region.

We've got now a massive data set for which to judge lophelia ecology and overall communities in the same kind of way. Sandra and I are also extending our work now up into the Mid-Atlantic Canyons. We'll apply the same methodologies there with an emphasis on canyon and coral

ecology. We're interacting with the Mid-Atlantic and New England councils as well in that regard.

One of the things that probably everybody is aware of is this massive explosion of deep sea coral work worldwide, but that's also mirrored by in the last 10 years a number of studies happening in the Gulf and the Southeastern U.S. These are peer-reviewed published studies, not just the reports but actual – as you know those kind of publications take longer to come out.

These time periods here are 20-year time periods. This is a 10-year time period, so you see in half the time we've doubled the number of publications coming out. It's an indication of a lot of work going on there. During this time period a number of things have happened. There have been a series of long-term, fairly well-funded studies, and the reauthorization of the Magnuson Act that brought about the deep coral program.

In the middle of this, NOAA produced a Status of Deep Sea Coral Reports for the whole U.S. where you participated in the Gulf and Southeastern U.S. chapters. The CHAPC was designated and, of course, we had the Deepwater Horizon Oil Spill. We broke down these papers in the last 10 years by topic.

They're dominated by general deep sea coral papers that include a variety of things, biology, ecology and taxonomy; general descriptive papers which are a catchall for habitat descriptions, some taxa listings, a lot of different kinds of general descriptions of coral habitat, and the papers on fishes are also in the dominant category.

Where we're lacking is still in invertebrate studies. It would appear we're lacking in geological studies, but that's not so much true in that a lot of the previous papers prior to 2000 were geological studies. There is a fairly good background on geology of deep coral habitats. There are a variety of other things that are coming along as well.

But to put this also in perspective, the Southeastern U.S. has figured somewhat in deep sea coral work from the very beginning. One of the first international symposiums was in 2000, and about 8 percent of the papers were from this region. The meeting we just attended had grown extensively to 182 papers. Our contribution to that has grown accordingly to almost 13 percent. From a worldwide perspective we're still fairly active. Most of you are probably already familiar with a lot of the programs that have funded this work.

Individual interests had a large impact on interesting and entertaining funding from agencies including NGOs. Oceana, Marine Conservation Institute, and Environmental Defense Fund played large roles in helping with this work as well as the well-known government agencies. BOEMRE, USGS, NOAA, and the council all helped fund these large projects starting with ocean exploration in about 2001 and proceeding through projects that were only in the Gulf of Mexico, multi-year, well-funded projects.

Our group participated in all three of these and then the new NOAA Deep Sea Coral Research and Technology Program funded two cruises at the end of their time in this region. They've now

moved on to funding programs in other regions. We threw out a few general observations about trying to encapsulate a few things that have been learned by a lot of us that have worked there.

As we pointed out before, these habitats were not well known biologically. In every faunal group we've looked at, there have been new species, including fish, which was unusual, lots of range extensions. It was indicated this is an area that has been difficult for people to work. The habitat is much more extensive than was originally known.

The oceanography is much more variable. We've employed benthic landers now for two different years in the Gulf of Mexico in two different sites. We've had year-long deployments, including an ongoing lost lander deployment off Cape Lookout. What we're finding out from that is – we hope to get that back this summer, maybe.

But we're finding out that the oceanography is extremely variable, so there is a lot of dynamic activity in this area that these coral habitats and the communities are experiencing. We have a reasonably good start on listing corals from both the Gulf and the Southeastern U.S.; but taxonomy as John pointed out for sponges is problematic for a lot of the invertebrates that occur in this area.

We found out through lab and field studies that these corals appear to have perhaps a broader environmental envelope than we had anticipated, potentially surviving some amount of time up to 15 degrees Centigrade, and in nearly every location fairly low dissolved oxygen conditions. From lab studies they could tolerate hypoxia and anoxia for a considerable amount of time.

Reproductive patterns appear to differ between the regions. That could be extremely important in terms of looking at larval dispersal. There appear to be more living corals off both the east and west coast of Florida than most other places that we've encountered. We've got a group working on paleoecology and we've aged corals, black corals, mostly, to over 2,000 years old.

We're using those as proxies to try to reconstruct temperature and particularly productivity records over that 2,000 year period. There is a potential these corals live even longer. They've been aged to over 4,000 years in the Pacific by the same people that are working with us. That's an exciting area to get some long-term data for these habitats. We're continuing to try to work on that.

We've had one major genetic study that has looked at largely, with intensity, the Southeastern U.S. and the Gulf of Mexico with samples from a few other areas. From our point of view in this region we found out that the Gulf, despite our inclination to think that it might be all connected by the loop current and the Gulf Stream, the Gulf of Mexico is genetically separated at least for lophelia from the South Atlantic populations.

When I looked at that in more detail – the reason for that didn't come out in this paper – we did not have data from the West Florida Slope and our assumption, before we looked at genetic structure from West Florida Slope, was that they would probably appear like a stepping stone between these two areas and that's not true.

The preliminary data indicates that the West Florida Slope is related to the rest of the Gulf of Mexico and separated from the Southeastern U.S. What happens here, if you'll look at this in more detail, is that the loop current while it often is shown penetrating deeply into the Gulf of Mexico in fact does not penetrate the Gulf of Mexico quite a lot of the time.

During the spawning season for lophelia is when the time that it is most withdrawn from the Gulf of Mexico. The pathway for larval transport is often not there. It is there probably just enough to maintain some level of gene flow into this region, so there is some connectivity but also some isolation. That same thing could happen to a different extent over here.

What this means from a conservation and management point of view is that all of these isolated populations of corals may be important. It would be incredibly valuable for us to add other species to this scenario to look for consistency of patterns. I think there probably would be some consistency here. We're trying to do that but that is coming along quite slowly. I wanted to spend a little time on that slide, because that is kind of important from a connectivity point of view.

MR. BLAIR: Yes, Steve, your dendogram, is that expanded out just to allow it, or is that representative of demonstrative difference between the sites?

DR. ROSS: Those are demonstrated differences. The New England Sea Mounts are more similar to the Northeastern Atlantic area here. They are closer to each other than they are to the Western Atlantic, the Gulf; the Western Atlantic the Gulf and Southeast are separated out. It is basically a pattern called isolation by distance. Essentially the further away you are the less likely you are to be connected.

One of the things though that is a problem here is our sample sizes in the northeastern Atlantic from Trondheim Fjord, Mingulay Reef and Rockall Bank were fairly small, and the New England Sea Mounts, so we really need to increase sample sizes here to flesh that out. But the important story to us was over here where we had sufficient sample sizes to make this kind of – this claim here is fairly strong.

This is what I work on and so far in comparing Southeastern U.S. and Gulf of Mexico deep reef fishes we've documented more of these from this area than anywhere else in the world. One thing that is quite different in our region – and I've pointed this out before at these meetings – is that there is what appears to be an obligate deepwater reef community just like you would see on shallow reefs.

That's not the case in the Northeast Atlantic or in the northern part of the Western Atlantic where the reef fish fauna is much like the background fauna. They may change in terms of abundance, but not necessarily in terms of species composition. That's very different in the Gulf of Mexico and the Southeastern U.S. That mirrors what happens in shallow water. That's a fairly important conclusion that's different than other areas.

Of course, we've hit this multiple times, and we did at this meeting as well, particularly pointing out that the South Atlantic Council has been proactive and a leader in terms of both research and

conservation of deep sea corals. We have made one presentation, Sandra and I did to the Gulf Council, and they have an interest but seem to not be quite as rapid in acting on it. The New England and Mid-Atlantic Councils are moving forward fairly rapidly with some ideas for protecting deep corals in their regions.

AP MEMBER: It's not rapid like the South Atlantic.

DR. ROSS: Well, it depends upon what you mean by rapid. It took us eight years.

MS. MARTIN: I was just going to add I know that the Gulf Council has recently formed a Coral Advisory Panel, so they do have that impetus moving forward and Andy Shepherd, who used to have a sea on our panel here, is now on the Gulf Coral Advisory Panel. Perhaps there is some motivation churning.

DR. ROSS: That would be quite good with Andy there, with his background and energy from this committee. We went into the usual song and dance about there still being issues and certainly reasons for moving forward with additional conservation protection. You can argue as to which of these things are having the greater impact at any particular time.

They all will have an impact at some point. We ended up this talk with trying to project into the future. Funding appears to be coming harder and harder to get in the southeast. The Gulf of Mexico, of course, is living on Deepwater Horizon Oil Spill funding and a lot of people are doing some amount of coral work there.

It's hard to say what Deepwater Horizon long-term impacts are going to be to corals. The paper that made the recent splash in proceedings of the National Academy of Science, while documented a fairly severe impact on a few corals, is from a very small portion of the coral area. The rest of the area doesn't seem to be as impacted as that small area next to the well or close to the well. Put in perspective, the impact there may not be that high.

We felt like that we know enough now for adequate decisions concerning conservation. We can always quibble over whether we have good enough maps or whether we groundtruthed enough places, but we have quite a lot of background data now to know that these areas are important and a little bit about what they do.

We need to make a lot of headway in terms of things like linkages and distributions, physical oceanography, larvae reproduction, trophodynamics, all of these sort of process-driven things now are where we feel we should concentrate more than just documenting sites. Certainly, we're way behind in terms of taxonomic levels of sophistication in corals and sponges. That was all I had for that sort of review.

MR. BLAIR: Thanks, Steve, that was kind of somewhat expected as far as looking at the density of the studies and information and so forth on the deep sea corals over the past 10 and really 20 years. It continues to point out, as the other presentations are today, the more we look the more we find.

Most of the places where we expect to find it we're finding it, so that the work is kind of keeping that true, as well as the uniqueness of these and sensitivity of these habitats. It's continuing to build on the information that we have to identify other areas that may need those additional protections that we've been working for and been able to get into place to date. Are there any other comments or questions regarding the presentations?

DR. FEDDERN: I saw a picture from what looked like a coated gorgonian from that oil spill in the Gulf. How extensive was that effect on the corals? I guess when they say corals they are also talking about gorgonians as well.

MR. REED: Well, in general NOAA and the coral community considers coral, hard coral, gorgonians, black coral, the whole suite of it is coral. From what we're seeing so far, there is the one paper that Steve mentioned documenting habitat damage to a deepwater reef that was relatively near the wellhead, within 10 miles or something, there is a very small patch reef, and where there was oil coating primarily gorgonians and soft corals.

There was a follow-up study that was done last summer on NOAA funding where they're looking at a couple shelf edge reefs; in this mesophotic reef zone, about 80, 100 meters, where they also saw evidence of sloughing of tissue off of gorgonians; and also its potential impact of fishes.

Overall when we did our study of a number of mesophotic reefs along the Florida west coast in 2010 during the spill – we went out there with the sub and essentially hit all these shelf edge sites from the Florida Keys up to the Panhandle, looking to see where this oil was going. I mean, we knew that it was going up on the marshes to the north because the wind was blowing to the north.

We knew that the shallow water in the Florida region was saved from it because the loop current wasn't up in the Gulf at all that year; it stayed very, very low. We were very lucky that the loop current was low and didn't pull all of that oil into the Florida region. At least visually we saw no evidence of oil on these shelf edge reefs along Florida.

But some of this impact is just starting to show up now two years later. They are certainly seeing more recent impact on the dolphin community or the mammal dolphins. They are seeing a lot of impact there, and just starting to pick up on more impact on some of the fish populations.

We are not seeing heavy impact on the bottom yet, except for a few isolated areas, but it's starting to – I think we're going to see impact in the future especially in the fisheries and the dolphin in the long term of animals that have been eating. The oil and the stuff they sprayed on the oil to dissipate it is the big problem, too. We don't know where a lot of that oil went.

DR. FEDDERN: There have always been these natural oil seeps off California. I wonder how that has – have there been any studies on the effects on their populations over there?

DR. ROSS: I'm not sure. One of the suggestions was the Gulf of Mexico has a lot of natural oil seepage and methane seepage and that the bacterial community may have been predisposed to

dealing with that already, which is one reason the oil vanished so quickly. That was one thought that was had.

I don't know that anybody has actually tested that; but as John said, the distribution of effects might be depth related and that we're starting to see a lot of impacts to the shallow or surface water communities and not so much the deepwater communities yet. Sandra and I also had two cruises immediately after the oil spill to our normal coral study sites and they looked like they always do, healthy and thriving.

Our concern was potential long-term impacts to the food chain, because everything on the deep bottom relies on whatever floats down from the surface. If there is disruption in the productivity chain, somehow that could be of a concern and that impact could take quite a long time to show up. But in terms of obvious impacts, there haven't been very many in terms of deepwater corals. There have been a lot of contentious observations, too.

MS. STILES: I was really interested – even though I've heard pieces of it before, I always appreciate the overview because it's really helpful, I find. I was interested in your comment that there is an assemblage of fish in the southeast. I'm not sure if it was in the southeast and the Gulf that's different than in New England where you sort of see the same fish everywhere and they just happen to be on the coral, which is really helpful. I'd be curious to hear more about that. I was also interested to know if the fish near that Gulf and southeast split that I think you were talking about for the coral, that you had the dendogram.

DR. ROSS: I'll take the dendogram first. That's based on genetic data and we don't have genetic data for any of those fish. The same species occur throughout the region. There are differences in how they express themselves. For instance, barrel fish seem to be extremely common on Gulf of Mexico deep coral sites and they seem to have more scatter distribution in the southeast.

They don't occur on all the sites like they do in the Gulf. The same is true of a tensile fish. It's extremely common on Gulf sites, but not so on southeast sites even though the species does occur through that whole range. There are differences in community structure. We haven't yet applied the same kind of analysis that we've done in the southeast to the Gulf population.

We will do that, but I suspect what will happen is we'll see a different kind of community in the Gulf compared to the southeast. We saw several different subsets of communities in the southeast related to habitat. But overarching that whole pattern is this idea that there are fish that seem to be specific to complex-structured habitats, whether its coral or rock, just the same way butterfly fish and sturgeon fish are specific to shallow reefs. That's a different paradigm for deep sea fish than is normal, and it's different from what occurs in the other regions.

MR. BLAIR: Thank you, Steve. We're going to take a quick break here. I think we have one other specific issue we want to try to see if we can reach a decision point on regardless of what that decision point is regarding exotic species. After that we have a couple reports on some of the management activities that have been going on in South Florida. Hopefully, we'll be able to get this taken care of and get it in on time. Let's please be back in ten minutes.

MR. BLAIR: Okay, we're going to get going again here. We'd like to make sure we get through our agenda by five o'clock. One point that is kind of a carryover from previous meetings is a discussion regarding exotic species. We just wanted to bring it up. At the time there was a really a continued debate and a lack of consensus.

I'm trying to see if we can reach a consensus point on this subject today or not. I'd kind of like to see if this can at least come off our agendas. Just to kind of give a little bit of framework and so forth and why it's something that we need to discuss. We are talking about tubastrea today; however, this would be applicable as you might imagine to any of the other coral species that become invasive into the area.

Although it can be a species-by-species based decision, which is part of what our considerations can be, we're looking to be able to see if we can reach a consensus on the approach that the AP should take or would like to take towards exotic species. During past meetings, not just October 2010 but in the previous year as well, the topic of potential exclusion of non-native tubastrea from the Coral FMP was discussed.

The topic was brought to the panel for consideration to allow take and thereby providing a measure of control of possible eradication of non-native species. Concerns were raised at the time relative to the level of threat that existed. There wasn't at the time a consensus that there was a clear indication of a threat, as well as if potential benefit could be realized in the area, especially as this area has seen just orders of magnitude continued decrease in hard coral cover over the past decades.

Framework and the basis for why we should at least consider this to try to come to some decision on it; the South Atlantic Fisheries Management Council Policy on Invasive Species gives descriptions of invasive organisms and invasive marine organism has the potential to cause adverse impacts to a variety of habitats.

Invasive marine species present an unacceptable risk to the biological integrity of the South Atlantic Ecosystem and must be addressed. Moreover, South Atlantic ecosystems, particularly those in Florida, have been shown to be vulnerable to the establishment of non-indigenous species.

An addition of the invasive lionfish and non-indigenous orange cup coral along with existing coral reef stressors could cause negative changes in the coral reef ecosystems in the South Atlantic. It further states that in instances where an invasive species belongs to a group of organisms included in a fisheries management unit, such as stony corals, the species would need to be excluded from the FMP via plan amendment in order for consideration of specific management activities against it.

Additionally the policy on invasive species states that the council encourages NOAA Fisheries Habitat Conservation Division to consider recommending the removal of invasive species as a compensatory mitigation measure; and continues with findings relative to invasive species that constitute potential threats explicitly lists tubastrea as a potential threat.

Recognizing that it presently has been identified on artificial structures in our region and appear to be the preferred habitat for tubastrea, at least the coccinea; however, while there are no reports on natural substrates in Florida, that is something that we may expect to occur in the future as has occurred with other invasive species.

If we think back to the mid-1990s or early 1990s when lionfish were first identified on deepwater reefs off the Carolinas, I believe, there was the consideration that we were somewhat buffered and would be okay because that was a unique habitat and it should stay there. One of the other things that I think is a consideration is when you look at the spread of invasive species in particular, you know that spread can initiate slowly but then goes exponential.

I know that for our region in Southeast Florida, especially in the last four to five years the lionfish, for example, although obviously a very different organism about it, had been very much restricted to the deeper artificial reef areas, and in the last four to five years have now established themselves throughout nearshore reef systems, in through Biscayne Bay and up into the saltwater canals that lead off of Biscayne Bay, so it has totally infested the area; although this is 4 years out of the over 25 years that it has been identified in the region.

It is something that I think that we should consider as for trying to see if there is a management or a position that we would like to do on the species. You've been given two documents. One is the copy of a paper by Tonya Shearer, which when trying to put together some of the history and so forth and distribution, and change in distribution of this species, going through this, this was an excellent summary of that distribution change.

That is given to you to kind of look through for the basis of that. Additionally, Kate Lunz has put together a very good summary on biological characteristics and reproductive characteristics of the species. That is also given as kind of some of the background aspects of it. Henry, you had a question?

DR. FEDDERN: I just had an observation that the spread of lionfish, when we thought we were relatively safe in shallow water, just indicates the natural selection at work by using a genetically variable population. Once a few suitable fishes get into a new habitat, they'll spread geometrically, just like we've seen.

MR. BLAIR: One other thing, just to frame the discussion, is although the topic has always been with the orange cup coral, there are two other species of tubastrea that have now been documented in the Western Atlantic, the tagusensis from in the Brazilian area and most recently micranthus in the Gulf of Mexico; again on platforms, but again it is an issue that we I guess thought we were much more comfortable with; not having the issues that other families and so forth of marine organisms have seen in invasive species.

But it is something that we definitely already have good documentation of and apparently is something that is and can increase, especially as we consider broadening and expanding shipping processes and so forth from the Atlantic and Pacific with modified Panama Canal upgrades and so forth that I guess we should expect this to be on the increase rather than the decline.

MR. REED: I have a question for Ken. On the positive aspect, it's a beautiful species, bright orange; how does it do in the aquarium trade? Does it transfer and live well?

MR. NEDIMYER: It ships well, it does well in aquariums, and it's a desirable species. That's one of the things that brought this thing up two or three years ago. We could sell it, for sure. I guess just to backtrack, I was doing an Aquarius Mission and the whole time I was doing the mission, one of the techies was out scraping this coral off the habitat. I said, "Hey, I'll do that for free. As a matter of fact, I'll even pay you to do it." That kind of got this whole thing thinking of why are we protecting this invasive species? I don't know whether we could eradicate it, but we could manage it. There is a market for it. But then all this stuff has come up.

DR. FEDDERN: What bothers me is they're scraping out of the hull and letting the fragments drop down to the bottom onto natural habitat.

MR. BLAIR: This species has been shown to be able to resettle and grow from fragmentation. But part of this, I think, may also assist in initiation of a potential management process as well that can provide guidelines and so forth on what should be done with the take of it or when it should and how it should be handled, if it is going to be removed.

Again, it is really an idea that there are some aspects, whether it is something that could be in an aquarium trade and a benefit to that group by allowing it to occur as well as the aspect – one of the things that I have not – and I'd be interested if others have comments on – I wasn't really able to find that much that discussed about the quality or type of habitat that this coral provides.

Again, although dominance of any given species is not necessarily considered to be a strong point in a coral habitat area diversity, and species richness is very important, it still does and is replacing cover of a hard coral species in a region that has been very strongly decimated over the past decades.

DR. FEDDERN: From what I've seen, the coral is not a branching coral. It just covers the surface; it doesn't provide any additional structure other than just what the surface originally provided. I'm not sure if it's going to increase habitat very much.

MR. NEDIMYER: I've seen it – well, on the artificial reefs it just covers every surface. But in the northern Bahamas where I've seen it on natural reefs, it is usually under surfaces. Since its Azooxanthellate, the light isn't an issue. I haven't seen it – it doesn't mean it doesn't, but I haven't seen it on lit surfaces where it would compete more with scleractinians. That doesn't answer the question but just an observation.

MS. STILES: What are the options that we are considering? Are we deciding whether or not to make a recommendation to remove it from the fishery management unit or to let it lie? What are the possibilities that you have in mind that we should be thinking about?

MR. BLAIR: I think in relation to the existing council's policy on invasive species it would be a tendency that the species should be – and this is an expression of my personal interpretation of it,

so please correct me and everybody else chime in on theirs – that it should be removed from the fisheries management plan and attempted to be controlled and/or eradicated.

There was the concern that there may be more damage associated with that process than benefit. To that end, that is why we're bringing it back up right now, looking to determine whether the panel cares to place a decision or an opinion on whether or not the species, specifically of tubastrea coccinea, be removed from the fisheries management plan. Other options can be whether they want to take that forward to all invasive scleractinian species.

MR. REED: If they did take it out of the fishery plan, would that in effect leave it open so anybody could collect at that point, right? There would be no restriction on collection, movement, transport, anything?

MR. BLAIR: Yes, that would be. In full disclosure – and I'll refer back to the council members if they can help us in framing this – I found a document that was a response of the FWC towards questions that were posed relative to this specific topic. I didn't trace it back to which meeting it was or how old or how long ago that opinion was obtained. Can you give us any sort of timeframe?

MR. HARRIS: Last year; wasn't it?

MR. BLAIR: Last year was it?

MR. HARRIS: Yes, I think so and our Law Enforcement AP addressed it as well. They had some issues and I can't remember the details of it.

MR. BLAIR: I should bring that in, especially since it was within the time period that we brought it in, the Fish and Wildlife Service had specific concerns.

MS. MARTIN: This panel did make this recommendation before. The council had some discussions about whether or not to remove the orange cup coral from the fishery management unit under the Coral FMP. At that time there was very little data about this invasive. They moved the discussion to – well, actually it was a measure in the second Comprehensive Ecosystem Amendment, CE-BA 2, so it was moved to the items that were considered but rejected for further development at that time.

There was some concern brought forward by FWC Law Enforcement about identification of this species and how to train enforcement personnel from identifying the orange cup coral from other coral species. There was that concern and then there was the concern of Tanya Shearer from Georgia Tech, who presented to the council on this specific issue. She did discuss that this was important habitat for juvenile fish. That was kind of factored into the council's considerations for not moving forward at that time.

I think those factors kind of were taken into consideration; and when the council deliberated, they did say they will revisit this issue once additional information is presented. I think at that

point it was kind of deferred back to the Coral Advisory Panel for developing additional details on this particular issue. That's where we are.

MR. HARRIS: That's what I remember.

DR. FEDDERN: Well, as far as identification goes this is the only bright orange coral in this area; in fact, the only orange coral in this area, so I don't think there is any problem with identification.

MR. BLAIR: The issue that the FWC had at the time was the fact that right now all stony corals are prohibited, so that it's a very, very straightforward call. Otherwise, they will have to get into – it was a concern about training aspects associated with learning the identification of the specifics.

DR. FEDDERN: Just put in one picture of an orange cup coral.

MR. BLAIR: There were also concerns about – which is something that potentially we would have to address that presently as Florida rules are written, there is an explicit exemption that a council's decision would not affect; so that even though if we were to allow it to be taken in EEZ waters, it would not be allowed to be transported across state waters without a change in Florida rules to allow that exemption. I guess that the consideration would be if we would consider an exclusion at this point, we would have to match that with a recommendation that the state modify its rules to allow that to occur.

MR. NEDIMYER: That's the chicken and the egg thing; we always run across that. I'd say that it's time for the chicken to lay the egg and give it to the state and let them do something with it, but that shouldn't be the reason why we don't move forward; because the state will say the same thing, well, we can't do anything because the South Atlantic Council still deems this as part of a fishery management unit, blah, blah, blah, so they don't do anything.

DR. FEDDERN: I think the commissioner would go along with that very readily.

MR. CRAMER: My thoughts on this are that I think that it should be removed from the coral list and maybe put into the marine life species list. You have professionals that know what the coral looks like, that knows where it's at, instead of just telling the public, hey, there is an invasive coral out there and we need to get rid of it.

I think we should start out and just put it on the marine life list. The marine life industry works real well with the state. I don't think it would be a problem. I don't know, Ken would know better than me, but I think that it should be put on the marine – they are getting ready to lose a couple of species, probably the condylactis and stuff.

They're starting to crack down on this and it might be something to replace it with maybe and just keep it where the professionals know what they're looking for. Most of them already know what it is so you don't have that issue. They're professionals, they need to know – then you have to know what they're collecting. They have no excuse. That's just my thought.

MS. STILES: I like the spirit of what you were just saying and maybe someone could explain a little more about how that would work; because for lionfish I definitely feel like if I see someone on the street and they want to kill a lionfish I'm like, you go! You can't really mess it up. It's a harmful thing.

But for something that fragments like that, we don't want people just kind of picking away at it, smooshing it and leaving it there. If there is a way to encourage or if not encourage then clear the path for someone that wants to go out and collect it and take it away, then that seems like it would be a good thing to do. I don't know that much about what you were just describing. If it's on the marine life list; does that mean its part of an approved thing that can be collected by people with permits?

MR. BLAIR: Yes, someone would have to apply for a permit, and Ken can probably be much more elaborative.

MR. NEDIMYER: Yes, first of all, the marine life fishery is a limited entry fishery. There are no new licenses being issued. There is a transfer process that can take place. There are three different kinds of licenses. There is a bycatch license, there is a directed fishery license, and there is a – well, there are three kinds of licenses.

In the directed fishery there is a transferrable and a non-transferable. We had talked about this a couple years ago in this room, and I brought it up to the Sanctuary Advisory Council, and I think we even discussed it in the Marine Life Working Group. The idea was to develop a permitting system to allow permit holders to harvest this coral.

Now we weren't trying to bottle it up in the marine life industry necessarily; we had thought that the South Atlantic Council could be the one to manage that. The South Atlantic Council has recently given jurisdiction of octocorals to the state of Florida to manage. It to me would probably make sense to do what Jeff was suggesting, is to put it in the hands of the state of Florida.

There are a limited number of licenses if that is what we're going to do. I think that maybe in the beginning you do want to limit it. You want to put it in the hands of people that know how to handle marine life. If they want to bring it up and kill it and sell it as dead coral, they can do that. We just want to get it out of the water. But it is a controlled fishery and there are professionals in it that would definitely jump on the opportunity.

MR. REED: I don't know much about the species. I've seen it grow naturally in the Pacific, and it's usually like on ledges and under hangs and so forth. Just from what I've read here, I don't see any – as far as the negative effects, it is hard to see something outrageous that the species – like the lionfish, there have already been papers about the lionfish showing its affecting the species, the fish community on the deepwater reef.

Like in the Bahamas they've shown the lionfish actually affecting the fish community, which in turn affects the benthic community. It had taken out these juvenile fish and the fish that used to eat algae or whatever weren't there and now the reef in that area was being overgrown. I don't

see any reason not to support allowing this to be collected for what you were talking about, what you brought up, for a limited aquarium trade. I can see no reason not to allow that. But on the other part of that, at least in the east coast of Florida, at least in the waters that the South Atlantic Council covers, which is federal water, I don't think this is growing anywhere in federal water on the east coast.

MR. BLAIR: Yes, it is.

MR. REED: Is it; where?

MR. BLAIR: Artificial reef structures of the east coast of Florida, there are numerous ones in federal waters. All of the most popular and one of the largest sites in Miami-Dade County is totally in federal waters.

MR. REED: Is it, okay.

MR. BLAIR: I would imagine; aren't platforms in the Gulf also in federal waters?

MR. REED: Certainly in the Gulf, but I was saying on the east side I didn't think there would be very many sites.

(Remarks being made off the record)

MR. REED: So I guess the big issue would be for your fisheries, if you had a fisheries permit to collect it, would be having the state law allowing you to transport and so forth.

MR. BLAIR: One of the things in thinking about that, which is a comment that I just mentioned to Anna, I believe if we're going to allow it to be a permitted-taken species, then we're maintaining it in the management plan and would have to develop appropriate take rules; is that correct? I think that is what we're trying to avoid.

I mean, if we don't want it as a – my perspective is does it have a habitat value that states that it should be protected so that it is providing habitat as we see corals throughout our region doing so, or is it an invasive, exotic species that doesn't belong here and should be removed? If it is excluded from the FMP, then it will not be regulated. The state may take the decision. We could possibly recommend to the state, but in federal waters it would not be regulated.

DR. VAN DOLAH: By not being regulated, does that mean that there could not be concerted efforts to eradicate it or you could?

MR. BLAIR: By being unregulated, it means there can be concerted efforts to regulate it. If it's in a licensed permitting or management plan or process, it would not have that level of effort towards it.

MR. NEDIMYER: If the South Atlantic Council does not have a management plan in place – an example I'm going to use is the marine life fishery – the state of Florida does have one and it

manages the fishery in state and federal waters. If this was managed by the state of Florida under the Marine Life Rule, it would be managed throughout its range off the coast of Florida, off the east coast; off the whole coast if the Gulf does the same thing. There would be a management plan for it. Just because the South Atlantic backs out, the state of Florida would take that over. That's presumed; that's not tested directly.

MR. BLAIR: If the state of Florida decides to take it in under its Marine Life Rule.

MR. NEDIMYER: Just to address this habitat issue, I would say that this coral on a slower scale is very similar to the lionfish. It will occupy more and more habitat. I do a lot of diving in Bonaire. We have a project down there. You can go in the shallow reefs; right up to the surface, elkhorn coral, fire coral, any kind of habitat you can imagine, and it's growing on it and in some areas it dominates it. It's a very aggressive coral. It stings things. I've never seen a neon goby sitting on top of an orange cup coral. You see them all over all the other corals.

It might be structure, but it might not be great habitat for most fish. I would not protect it on the basis of it providing essential fish habitat. I don't know that. I think it will become a dominant coral and I don't think we should sit back and let that happen. That's my opinion.

MR. BLAIR: There is some limited information showing the competitiveness of tubastrea against other native species where it will impact and kill adjacent coral colonies, at least of the species that were evaluated at the time. It's expansion – and as Ken had just mentioned a wreck or a structural tentacle reefs up on the Dade County and Broward County line, that it was not present ten years ago at least, but is totally covered now.

The areas as you said with the reefs down in – and as Tonya's paper illustrates as well, these areas have become heavily invaded with this species. One of the things, as I said, we could make a recommendation that it be removed from the council's Coral FMP with a recommendation to the state that it develop policies or modify rules to allow take or transit of the species even if they don't want to do the take of it in the federal waters.

I don't know if they were out of state waters, I don't know if they're going to be able to do that, but a statement that they recommend that they modify the rules as necessary to help assist in effecting that removal or consider inclusion in its marine life program as a regulated take.

DR. FEDDERN: Is that a motion? I second.

MR. BLAIR: I was going to say let's take this maybe a couple steps at a time and see if we can determine whether as the panel we can feel it's appropriate to remove it from the council's FMP.

MS. STILES: I'm sorry; I fully don't fully understand how the specific – when it's in, what happens; when it's out what happens, state, federal, what all the different options are.

MR. BLAIR: Right now we're considering – the first step that I think we want to do is consider whether we want to maintain it as it presently is. Because of a blanket restriction for take on Scleratinian corals in the present management plan, it is therefore protected by the present

management plan. In order for it to have any sort of effort to minimize or eradicate or allow any removal, it needs to be excluded explicitly from the management plan.

MS. MARTIN: Just to add on to some of what Steve is describing, if the council did go down the route of allowing harvest of this species under the coral fishery management plan, then they're kind of bound in the Magnuson Act box of developing annual catch limits, acceptable biological catch and all those sorts of things that –

MS. STILES: ACLs, okay, they don't want to do that?

MS. MARTIN: They don't want to do that in this particular scenario.

MS. STILES: Okay, I get it.

MR. BLAIR: Again, we're speaking of potentially down the road numerous species. It is a means of looking at – although this can be somewhat of a species-by-species basis, I think it will set a tone for the policy of dealing with exotic species down the road. What I'd like to do is first approach – and we'll do it as a general motion at this point for removal. Before I get there, let me get some general aspects of, should this be something that is species-specific or should it apply to exotic species in general?

DR. GILLIAM: I think it needs to be species by species. There are a lot of exotic, not even exotic, but their potential – well, just use corals, for example. Who knows they may follow tubastrea and they look a lot like our Caribbean species. We are fortunate that tubastrea does not look a lot like our Caribbean species so this is why we are even entertaining this discussion. It has to be species by species. That's my opinion.

DR. ALEXANDER: Is there a way within keeping it as a managed species but changing that blanket restriction on harvest of Scleratinian species? Would that be another way to approach this?

MR. BLAIR: Not without, again, developing a variety – there are two things.

DR. ALEXANDER: You can't manage it to say we want to get rid of it?

MR. BLAIR: Correct. I guess that's kind of the way that you could do it, plus the fact that there is the interplay of differential treatment of exotic species. The policy is they are not good. They are usually extremely disruptive to the ecosystem. Unless we have I think significant information that states that there is a strong benefit for maintaining it into it, it would be consistent with the policy of the council to remove it and work towards its removal.

DR. ALEXANDER: Just to follow up on that; how do we view with a changing climate and warming seas and changes in range of different species; when do we decide something is invasive versus just changing its range and would be here anyhow?

MR. BLAIR: That may be a thing. In this case we're talking about species that did not exist in the Atlantic and specifically in the Western Atlantic.

DR. ALEXANDER: Right, I'm just trying to think about if you want to set up an invasive species policy, you would just need to include some way of what do you determine an invasive species with changing climate and ranges.

DR. GILLIAM: That's actually an interesting point, because there is a difference between invasive and exotic. You can have an invasive species that is native to your area. You can have an exotic species that is not invasive. There are differences and I think we're specifically talking about invasives, which potentially can be a native species that has gone out of its normal –

DR. VAN DOLAH: I think all I wanted to do to address Clark's point is that I concur that it has to be a species-by-species thing. I think there can be invasives or exotics that ultimately would fit the bill for why you would want to potentially protect them.

MR. BLAIR: Good, that is the type of input I'm looking for, thank you.

DR. FEDDERN: I think it should be on a case-by-case basis because there could be down the road a species that we would find that would be beneficial or would counteract the harm another evasive species could cause. We should look at these one by one; I agree with that.

MR. BLAIR: Okay, and, Clark, a good example is typha, cattail. It is a very invasive, very disruptive species, but it is a native species. I mean, you do have those aspects where you can find them both ways, unfortunately.

MR. NEDIMYER: I guess one of the questions though is if you allow the South Atlantic to manage it, then the fishery is open to a lot more people. If you give it to the state and say we're just going to allow the marine life fishermen to manage it – that's one scenario we've kind of talked about – then it's just this small pool of fishermen that have access to the fishery.

Now is that what we really want? I hold one of those licenses, so this could potentially be lucrative. Although I don't do it anymore and I probably won't, but I think that there is a consequence to turning it over to the state in that it's a smaller pool of people; and if you wanted to be an orange cup coral eradicator up in Broward County – that's not a good example because it's too deep of water – but you wouldn't be able to get the license to do it.

Whereas, if you could go to the South Atlantic Council and say I want to get a license to remove orange cup coral, the South Atlantic Council would be the one that says, okay we're going to issue this many licenses or this is how the licenses are issued or whatever. I don't know; I'm just saying that I think there are pros and cons to taking it out of the council's jurisdiction. Now the state could just manage it completely differently, but it would seem to be most logical for the state to manage it through the marine life fishery, which is limited entry.

MR. BLAIR: Part of our recommendation may be for the state to remove all management of it entirely just as the council; if this is the path that goes through and is approved by the council,

that would be that they – and not be part of the marine life. I mean when you think about it, if you're talking about – you know, regarding the marine life stuff, you'd still be able to collect it, and I believe there is enough out there for everybody at this point.

DR. GILLIAM: Just to throw another wrench in it; we keep comparing this to lionfish, which I don't know if it's entirely appropriate for a number of reasons. But, perhaps the most is that you can go out with a spear and hit a lionfish; and even if you're not very good, you're still likely just to hit the lionfish or miss the lionfish.

But these are benthic, and so to remove them you're affecting the substrate. I'm just mentioning that. Is that a problem or not a problem, I don't know, but it is a distinction between comparing it to a lionfish. Then I guess I'm still confused about – I apologize – if it's removed from the coral plan, that means in federal waters anybody can just go out and take how much they want, and any means that they want?

MS. MARTIN: That's correct; with the assumption that Florida, under their marine life fishery role did not assume management, because they have already extended management under the role into federal waters off of Florida. But I guess to your point, Kate, I don't know if you can shed any insight; is this an interest of the FWC and have those discussions of potentially adding something like the tubastrea to the Marine Life Fishery Rule; is that even an interest of theirs?

MS. LUNZ: I haven't heard people talking about this lately internally. I think it would take a while and a lot of arguing before we reached a decision on that. I can just tell you that right now. Anecdotally, also I wanted to share, I get a lot of FWC Law Enforcement bringing in live rock that has corals attached to it. Quite often we have to identify what the coral is. A lot of times we get cladocora, which is a little orange coral. A lot of the law enforcement asks me if it's the invasive coral; just throwing that out there.

DR. FEDDERN: Under the Marine Life Rule, a hobbyist or anybody with only a fishing license could collect up to 20 organisms that are listed under the Marine Life Rule. Even under the 20 there are restrictions on the number of any one. Nobody can just go out there and just collect a lot of whatever they want. It's restricted even for hobbyists. Then the people who have the marine life license, they can collect as much as they want or as much as they need. When I'm out there, I'm not going to collect more than I can sell. It's not like a wholesale, going out and clear-cutting everything.

DR. GILLIAM: Well, that's an interesting point, because then removing it from the FMP wouldn't be to control or eradicate it. It is simply to remove it because it is not native and therefore perhaps could be commercialized. Obviously, if you're limited, that is not a control or eradication measure then.

DR. FEDDERN: I think when the commission looks at this, they need to determine a type of a way to remove it to minimize any substrate on it. I imagine there is going to be some slight amount of substrate attached to the coral. Right now the Sanctuary, although it has prohibited, it does prohibit any new substrate removal.

When we had the discussions with the ricordea harvest, they allowed unofficially a very small amount of substrate, because when you remove the ricordea from the bottom, unless you get a tiny bit of substrate, you are going to damage the ricordean, so what's the use? They allowed a tiny bit. Essentially what the marine patrol said as long as you can't see the substrate beyond the edge of the ricordea, that's okay with them.

MR. BLAIR: I'd reiterate that we can make recommendations to the state. It will be their decisions as to which path they choose, but we can make recommendations to the state how the council and the AP think their management should progress. Kim, did you have a statement?

MS. PUGLISE: No, I just had a question as to whether or not anybody had approached the state on the issue to talk to them about it, because we keep guessing about what the state might do. It would be helpful if we actually asked them what they would do with what we would give them.

MR. BLAIR: I didn't copy and pass around there is a response to the council that was given by FWC last year that the tenor of which was not positive; that it spoke more to the road blocks that they saw in it, conflicts between existing rules; and if it were to be removed from the FMP, law enforcement's concern regarding their ability to be able to identify it and the fact that presently their rules state that there is a total exclusion of Scleractinians and gorgonian flabellum from state waters and the exclusive economic zone. The state law says that there is an exclusion of take in the EEZ.

MR. NEDIMYER: But the state law also says except for corals on live rock, cultured live rock, so there is already an exemption in there. I would say that's not – I'm just giving you the part of the story that is not in that line is that there already are exemptions in there. I think it comes back to do we want to protect an invasive species and how does it get managed? I don't know. I just think that –

MR. BLAIR: I would agree that what we want to do is make a decision and send that forward to the state to let them know what the council and the AP's considerations are and let the state make their decisions towards how they wish to handle it.

MR. CRAMER: Just one quick thing; usually the state, a lot of these plans, things that we set up – I know because I've been on the Marine Life Advisory Panel for the state. I've been on the Spiny Lobster Advisory Panel for the state. The fishermen go and we hash it out and we work it out.

One thing I was thinking if the feds decided to drop it out of the coral management plan and the state could limit the – all they'd have to do is come up with some kind of special activities license or something that maybe at first was only available – you know, they could pick and choose who it goes to at that point. Maybe at first they want to open it up to researchers and scientists and then open it up to maybe the marine life industry or whatever. That would kind of limit the people it could go to, people that would know exactly what this coral is, something like that.

MR. BLAIR: I understand and I'm sure this is not something just out of the fact it's going to require change in rule that is going to happen quickly at the state level. I'm not sure that we are saying that we're going to dictate to them or try to dictate to them on how they should handled it, but make recommendations that their rules be changed to allow take of it, whether it's through a regulated process or not.

I think that's about as much of a – by that regulated aspect being the marine life process or some other permitting process at the state level or totally remove prohibition of take from it. That's part of their decision and their options. Our recommendation; what I foresee the recommendation being is that the council will remove it from its FMP, and we recommend that the state develop programs to allow take of that either through a regulatory process or through exclusion of that from its regulated species.

MR. NEDIMYER: Not just the state of Florida, but off Georgia there is certainly I know Grays Reef, some of their mooring buoys and things like that; they have a tower out there and it's got it on. How does the state of Georgia manage it? They don't have a management plan. It's not just Florida that might be involved. It's primarily Florida. We ought to just say –

MR. BLAIR: That's fine, and it could be placed that the states modify rules as necessary to make it – we could I think have that language in there to not be exclusive to Florida.

MS. LUNZ: What is the timeline? If this panel was to recommend that to actually be removed from its management plan, when would that go into effect? Can I just say a qualifier; if this is the motion that we are going to propose, is there a possibility of giving the state a warning?

MS. MARTIN: No. I guess as far as timing, the amendments on the docket right now are a little further along for adding in an entirely new management issue. I guess depending upon the council's decisions with this Comprehensive Ecosystem Amendment 3, at the June council meeting there is some anticipation that they may approve that document for public hearings, which would then later be held in August, before the September council meeting.

That would be a little too far along for inclusion of this in that vehicle. It would have to be CE-BA 4 or another plan amendment; which it's my understanding that would not be started before the end of this year, so 2013. I think that would provide some adequate time for a state notification and organization of all of the research and documentation that we do have on the issue, so perhaps that would be helpful, I don't know.

MR. BLAIR: I'm not certain that we're looking to place timelines on the state, but I think it is appropriate that in a sense they be put on notice. We've had discussions with them. I think that the council has had discussions expressing this in the past. I think it's a means of saying the council's opinion is that it should be or the AP's opinion is that it should be removed and the state should do the same or develop a management plan to allow take of it or process of it.

DR. FEDDERN: We need to take the first step because it is protected under our plan. We need to do step one and then the state can do step two.

MR. BLAIR: I think we've had some discussions that I think have frame-worked this a little bit. I don't know if we need to take multiple votes, but we'll start with one that will get us the first step along the way. I'd like to make a motion that we recommend to the council that tubastrea coccinea is removed or excluded from the coral management plan. That is step one, and one recommendation.

DR. VAN DOLAH: I second that motion.

MR. BLAIR: Thank you, Bob. Can we take a vote? Do we need further discussion? All in favor; I would say let's raise the hands so we can get a count.

(Remarks made off the record.)

MR. BLAIR: There are two species in the Western Atlantic. There is a third species in Brazil that may well come up this way.

(Remarks made off the record.)

MR. BLAIR: That's a good point.

AP MEMBER: Well, are all of the tubastrea species –

MR. BLAIR: Within the council's domain all of the tubastrea –

AP MEMBER: Non-native?

MR. BLAIR: – that are present are exotic species. Then the modification that John is making is rather than being species specific make it genus specific so that those species of tubastrea would be removed. **The motion is a recommendation from the AP that the council exclude corals of the genus tubastrea from the coral fishery management plan.**

MR. VAN DOLAH: I will second that motion.

MR. BLAIR: Thank you, Bob. All those in favor please raise your hand, 9 for; against, raise your hand please, 4. **The motion passes**. I will develop wording towards that. A second part of this or a second recommendation – and we can have some discussion to get the framework of it and I'll bring this back to you reworded and we can probably get a final approval on it.

It would be to recommend to the states within the council to modify existing rules as necessary to allow for take of the species either through a regulatory process or an unregulated take. I have to work on that, but the idea would be to make the recommendation to the states that rules be modified as necessary to allow for take of the genus tubastrea within their areas of jurisdiction.

AP MEMBER: Is that the second motion?

MR. BLAIR: Yes.

AP MEMBER: I'll second it.

MR. BLAIR: Any further discussion on that? Then all those in favor please raise your hand, 8. This is for making a recommendation to the states to modify their rules to allow for take of the genus tubastrea. Can we recertify our hands please, one more time, I'm sorry. We're voting on that statement.

AP MEMBER: This is just a corollary to what we just voted on, right?

MR. BLAIR: Right, but it's basically a recommendation to the state to modify their rules to allow for the take of tubastrea.

AP MEMBER: If we vote yes on one; it seems by extension we should vote the same on the other, but what would be the reason not to?

MR. BLAIR: We could leave it at that and not have any further aspects. They can decide if they want that take to be a regulated process or an open and free take.

DR. ROSS: Can you just make this into one recommendation where it goes to the council with a suggestion that it also go to the states as one statement?

MR. BLAIR: Are you making an amendment for the first one to include the second?

DR. ROSS: It seems more complicated than what we originally thought.

DR. FEDDERN: I second that.

DR. GILLIAM: I've lost the reason why we're removing it; why are we removing it?

MR. BLAIR: Why are we removing it?

DR. GILLIAM: Because we don't want to protect it or because we want to eradicate it?

MR. BLAIR: We don't want to protect an exotic invasive species.

DR. GILLIAM: That's why we're removing it, simply because we don't want it protected.

MR. BLAIR: Correct.

DR. GILLIAM: Why are we making a motion to tell the states to do something if all we want to do is not protect it?

MR. BLAIR: Because right now the state has rules that would mean that people who take it or destroy it in federal waters that travel into state waters would be in violation of state law. As a

matter of fact, anybody who takes it in the exclusive economic zone would be in violation of state law in Florida.

In order for this to become – you can still do the eradication totally in federal waters, but you're still going to be in violation of state law. The states need to modify their rules to allow the take to occur. But I'll be happy to reword that as a single motion if that would be preferred. I wanted to do it more to find out to see where the support was and would be happy to make it into a single statement.

MS. PUGLISE: I think the issue that David keeps going back to is that our purpose for doing this is not because we want to eradicate it. Our purpose is just to allow it to be taken.

DR. GILLIAM: Or not to protect it; there's a difference there.

MS. PUGLISE: If we were going forward and saying, look, we want to get rid of this, I think you probably would have a raise of hands all around the room, but I think it's just the way that we're going about it, because even Henry admits that he's not going to go clear-cut.

MR. BLAIR: No, but understand in order for any measures to be taken for control, because if it stays within the FMP, there is no take. It's protected. We do want to allow for activities that may work towards the control; and as the exotic species policy states there are recommendations to NOAA for inclusion of removal and mitigative aspects or allowing mitigative aspects to include removal of this species as compensatory mitigation in certain projects that can work towards the limiting of the distribution and/or – you know, eradication is a very strong word, so minimization of its spread. It cannot occur unless it is removed from the FMP. It is to avoid or to not protect it so that it can be taken with the intent of future control or attempts for control.

DR. VAN DOLAH: While I still support the first motion, I think we do need to recognize that the bulk of the problem is in Florida. If the Florida Commission or Legislature, whoever makes those rules decides not to act either in terms of a marine life take or any other take, that is they just don't change their existing law, then we're almost ensuring that nothing will get done to solve this particular problem.

MR. BLAIR: I think that kind of comes a little bit back to what Ken Nedimyer had stated about it has always been the chicken and the egg aspect. I think we're trying to lay the egg here to say this management group feels that this is an important situation that needs to be affected. We're taking our steps to do it; please take your steps as well.

MR. REED: Within federal law or within the South Atlantic Council are there regulations on taking live rock like there is in state; the same legislation or what?

MS. STILES: Do you want to elaborate, Ken?

MR. REED: I see that as the biggest drawback; you know, people whacking not on a wreck or artificial habitat, but on the bottom; like you were saying, you're impacting hard bottom which is going to be hard for the state to swallow and so forth.

MR. NEDIMYER: Well, for the most part it is on wrecks, and so it is not going to be coming off of hard bottom. That's the idea, can we manage it before it starts invading the reefs? But live rock is prohibited in state and federal waters unless you have an aquaculture permit; and even then just because I have an aquaculture permit doesn't mean I can take native live rock.

I have to have my own rock. Steve earlier, if you'd come to a few Sanctuary Advisory Councils you'd know how to write these things up with all these little whereases and therefores. We have some professionals down there to write motions; long, windy motions.

MR. BLAIR: I'm trying to get some wording up here that will be our recommendation in general; and by that I mean our explicit aspect if there has to be some wordsmithing to it, I think that can go with final approval being done through e-mail if necessary. What I want to get today is does the AP want to recommend it be removed? Does it think that a recommendation is appropriate to the states to modify their rules as necessary to allow for its take? If there are any other aspects that they want to bring forward, that should be part of it.

MR. REED: Take or transport maybe.

MR. BLAIR: Take or transport, that's a good point.

AP MEMBER: Steve, just real quick, is this where strong language comes into play, just in the sense that the panel here deems tubastrea as a threat to the integrity of Florida's coral reef; just a bit meatier that I can take back to FWC.

MR. BLAIR: I like that.

MR. CRAMER: I just want to say that's why I suggested the marine life industry, because they already have substrate limits on the stuff they harvest, the gorgonians and stuff they have now. They've already worked out a plan with the state on how much substrate they can take, so they're not out there chiseling it up rock that big and you get a piece of sponge that big. To me this whole thing is – one of the things the fishermen have a big problem with is zero flexibility on things. It this thing is a problem; we want to get rid of it. If we don't do anything, we're not doing anything to get rid of it. It's just going to stay there because everybody is – open it up, do it cautiously, but do something.

MR. BLAIR: Well, we could do that. The present invasive species policy of the council has already identified tubastrea, the specific species coccinea as a threat. We could utilize the same aspect on it reiterating – and again how far do we want to go with it? It can be as straightforward as saying that we want it removed from the FMP so it's no longer protected.

We can reiterate language in the exotic species policy relative to removal and eradication as part of it as well. I think that we want to be strong on it and would favor the addition of verbiage that the Coral AP deems the presence of tubastrea in the South Atlantic Region as a threat – we can just say threat to coral reef systems.

(Remarks not recorded on the record.)

AP MEMBER: There is nothing good that comes from Australian pines. They are invasive; they are not compatible with the other critters that live there. Anybody lives in coastal Florida knows what an Australian pine is and these guys are going to take over and they are going to change things. Do we want to have Australian pines all along our coast? They are now under the eradication list for the state of Florida, along with Brazilian pepper and all kinds of other things.

MR. BLAIR: I think that there are indications that threat is more than potential. The threat is there. What we don't know is how big of a threat it's going to be. The amount of expansion that we've seen of the species across –albeit artificial habitats at this point – in the past five years or so is somewhere between very surprising and astounding.

I don't think that there is a question that this is a species that is usurping benthic habitat and minimizing diversity in the areas that it is found and having a level. What we don't know is the level of impact to those communities through its dominance. I think it's safe to say it's a threat. We may not be able to say the magnitude of the threat.

MS. KARAZSIA: The one thing we haven't considered when we compare it to lionfish and Australian pine, but is there a potential of that through the marine life program that we're introducing it to an area where it can become highly invasive and similar to Australian pine? Not having control over where it goes if it goes outside of the range of where it doesn't behave as an invasive, then I think that is a little irresponsible.

MR. BLAIR: I'm trying to think if that already applies to especially in the aquaria trade, but I guess that's the marine life aspect, so it's a regulated, controlled process.

MR. BANKS: Ken Nedimyer, is it imported now from the Pacific for the aquarium trade?

MR. NEDIMYER: Not that I know of, but that doesn't really mean anything.

MR. BANKS: How about all the Pacific's that are brought here for the aquarium trade; are they regulated?

MR. NEDIMYER: They are; they import through CITES. They probably are not as regulated as well as they should be, and there are a lot of things that are going on that shouldn't be going on, but I don't think they are specifically imported.

DR. VAN DOLAH: I have a question; I wasn't completely following your logic, Jocelyn. Were you concerned that there might actually be attempts to culture this organism or do something that would increase its presence versus decrease it?

MS. KARAZSIA: No, I was just thinking of an unintentional release in an area where it might have conditions favorable for it to behave more like an invasive and not just an exotic.

MS. STILES: I don't know either whether that's an immediate problem, but certainly there are other aquarium species, plants and so on if people dump them where they're not supposed to be. I think Ken Bank's question as to whether it's already in the trade helps answer if that's a risk or not, but I do think it's a concern if it's not already in trade.

MR. CRAMER: I just want to say I agree with what you say that it can be spread. But the lionfish thing and comparing it to fish, those people in the aquarium, these hobbyists especially, they get attached to those fish and they just don't want to flush them down the toilet. Where I think a coral and a plant or stuff like that, you know, that doesn't to have face a lot; I don't know.

I just think some of those fish, especially like a lionfish which is hard to kill to begin with, or Pacific grouper, or bat fish, they just outgrow the tank and you become attached to them, feeding them every day, where a coral or a plant it's a little bit different. You're like I'm not going to drive out to the water and throw it in. It's just a piece of rock; I'll dry it out and put it on my shelf. It's my personal opinion but I don't think it's as big of a threat as a fish would be.

DR. VAN DOLAH: Just one wordsmithing there; to allow for the take of the genus in state or federal waters.

MR. BLAIR: Very good point.

MS. MARTIN: Right, yes, just to clarify and to add on to Bob's point; like was the case with octocorals, the council shortened the management unit for octocorals. They're still within the coral plan. They've been removed from the coral plan off of waters south of Florida. Therefore, that has allowed Florida to extend their management.

They already have, as you all know, state management for octocorals under the Marine Life Fishery Rule and so they were able then to extend state management into federal waters under their state plan, because there was no other federal management plan off of Florida waters. The states would then have that authority if there was no existing federal management.

MR. BLAIR: Okay, we have an attempted aspect of something to be a little bit more specific as a recommendation. The parenthetical sentence at the end is something that kind of goes without saying that the state has its own options on how it wants to do it, but it kind of implies that if they want to do it in a limited process through a regulatory program such as a marine life program, then our major purpose is that they allow take of the genus.

The Coral AP deems the presence of the genus tubastrea in the South Atlantic Council Region a threat to coral reef systems and recommends that the species of the genus tubastrea be removed from the Coral FMP and that the states within the council modify existing rules as necessary to allow for the take of the genus in waters of the state and the EEZ.

Then if we want, we can add the last statement of the take may be through a regulatory or non-regulatory process as deemed appropriate by the state. That gives them a little bit more. With that said, as a superseding statement of previous statements that were voted on I offer this as a recommendation.

DR. FEDDERN: Second.

MR. BLAIR: Okay, if we can then, if there is no further discussion. please raise a hand one more time for a vote please, 9; those opposed. Nine for; three against so the motion will pass. We have two other presentations that were planned on management activities that are ongoing in Southeast Florida, and I'll leave it to the panel if they wish to spend probably about ten minutes or another maybe ten minutes per talk.

We know that tomorrow we have a lot on our plate and we're saving tomorrow to be able to address the issues there. We have an option. We may be able to take one quickly now and one in the morning or after we finalize the information on the Coral HAPCS. I'll leave it to the council whether we put them both to the end of tomorrow or if they'd like to hear one now and one later or if they want to extend for another 20 minutes to hear them both.

MS. KARAZSIA: Do we just have the option of maybe coming a little earlier tomorrow? That might be preferred?

MR. BLAIR: Are we starting at eight?

MS. MARTIN: Whenever, it's up to the panel. We said nine but we can modify that.

MS. KARAZSIA: At this end of the day, it's like we're just going through the motions. I would rather start fresh.

MR. BLAIR: We made a very significant thing here.

MS. KARAZSIA: I think the content of these two presentations is – I mean I don't think these are as of high interest and we could run through them very quickly just to knock them off.

MR. BLAIR: Or the other aspect, we're scheduled at nine, we're all local, we're all staying local, and we could meet at 8:30.

AP MEMBER: I suggest we do a motion for that.

AP MEMBER: I would say if you can do it in ten minutes, really in ten minutes per topic.

AP MEMBER: Are you really listening to it then if we're all rushing to get it done in ten minutes, that's the thing. We're just doing it so we can say we did it. I would rather just do it in the morning.

MR. BLAIR: One of them is about the MARES program, Marine and Estuarine Goal Setting Program in South Florida. The other is about management initiative being undertaken by the state in the SEFCRI area, Southeast Coral Reef Initiative Region from Martin County through Miami-Dade and the process they're using for developing various management options for the reef system. They are informational.

MR. REED: Why don't we start tomorrow at 8:30 thirty and do those first, because Roger is not going to know about it and then start the regular agenda at 9:00.

MR. NEDIMYER: Along the lines of that South Florida thing, the Sanctuary Advisory Council is in the process of reviewing all of its management, its zone scheme for the Florida Keys National Marine Sanctuary, and that will be a two or three-year process. I had some flyers I was supposed to pick up and bring and hand out to everybody, but I forgot them.

We have scoping meetings coming in June. I don't want to talk about it a long time, but I will weigh in on that tomorrow. Steve was talking earlier and John, too, one of the things that is up for consideration is expanding the boundaries to include Pulley Ridge, Portales Terrace. We don't know whether that will fly, but those are things that have been suggested. It's going to come back to this council eventually, I'm sure, for consideration.

MR. BLAIR: Okay, I take it that I'm hearing that we'll meet at 8:30 tomorrow morning to hear these presentations and get on with our work. Until then, we're adjourned.

The Coral Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Hilton Garden Inn, Charleston Airport, North Charleston, South Carolina, Thursday morning, May 10, 2012, and was called to order at 8:30 o'clock a.m. by Chairman Stephen Blair.

MR. BLAIR: Good morning, everyone. We'll reconvene for day two of the Coral Advisory Panel meeting. Two quick things that we're going to try to go through this morning is to finish up on a couple of information presentations from yesterday; one dealing with the marine and estuarine goal-setting criteria of South Florida, the MARES Project.

The other is an overview of the Southeast Florida Coral Reef's Initiatives, coral reef management alternatives identification process. These are very brief or meant to be brief. We'll go through and we can discuss as we go through them or at the end of them. We do have the majority of the morning that we do want to go through. There are some action items that we're going to be looking at relative to decisions for the Comprehensive Ecosystem-Based Amendment and the Oculina HAPC and potential recommendations for modification to the Coral HAPC as well. That's what we want to spend the majority of the morning on, but we'll go ahead and start with our first presentation.

The Marine Ecosystem and Goal-Setting Project called MARES was established in the South Florida Region for connecting science, management and policy. A major purpose and goals of the program is to identify and evaluate desired statuses and future conditions of the coastal ecosystems of South Florida, integration of science and societal goals.

A major aspect about the MARES approach is that it is trying to include more of the human dimension into these decisions associated with both the determination of the status and functions of the ecosystem as well as the outputs and management of them. This is being done engaging and communicating with stakeholders, managers, scientists and policymakers in order to get a more holistic understanding of interactions and dependencies within the system.

The process is intended to reach a science-based consensus on how the system should be evaluated, and are evaluated and presented; and additionally to address NOAA's goal of integrated ecosystem assessment, which again is a point that brings in again the socio-economic factors into the ecosystem management program.

What is the MARES project? There are approximately 50 PIs that are listed. This is funded through NOAA's –

MS. KARAZSIA: Center for Sponsored Coastal Ocean Research.

MR. BLAIR: Thank you; I knew you would help me out there. As a matter of fact, Kimberly and Dave, myself, Ken Banks are all involved in this program down in Florida, so you guys please chime in and fill in statements or blanks where I'm missing them. There are approximately 50 PIs. It's an interdisciplinary group from natural and social scientists, economists, resource managers and policymakers.

They are broken out into addressing the South Florida System in three general areas; the Southeast Florida Shelf, which is an area from Martin County, or pretty much the St. Lucie Inlet south to Biscayne Bay, the north part of Biscayne Bay. This is an area that is also called the SEFCRI, the Southeast Florida Coral Reef Initiative Region; the Florida Keys and Dry Tortugas and the Southwest Florida Shelf.

What the program identifies or does is to develop various conceptual diagrams of the systems and interactions, both social and ecological in the areas, and work with various interaction models. The DPSER is a Driver Pressure State Ecosystem Response Model System that I'll talk about in just a second; as well as developing indicators or identifying what indicators are appropriate for providing information about the various states and status of the primary conditions associated with the ecosystem and ecosystem services; and a report card on the status of those services. Again, those are the three areas that the program goes to.

The process is to identify benefits received, both measurable and intrinsic of the ecosystem, map interactions of the ecosystem inclusive of the human dimension, which includes integrated conceptual ecological models, and as I say the DPSER model; identification and metrics that assess and measure the status and providing report cards based for the services.

Human dimension component, the purpose for including some of these things, it frames the case for ecosystem preservation in terms that decision-makers can understand. Obviously, we're having this go up. It's based on a multitude of individuals with various backgrounds, but it's going to be policymakers and managers that are making the decision, and they understand money very easily.

Establishing value of ecosystem services, aesthetic, cultural and monetary – I mean the fisheries aspect and the monies from landings and so forth are a little bit easier. It is a little bit more difficult when you are trying to incorporate things of what is the value of having a good vista on an oceanfront or what's the value of an individual's sense for clean water; so trying to get some

of these other human component values into it as part of both the benefits and difficulties associated with this approach.

It allows for a permit, allows for a cost-benefit analysis, and making tradeoffs explicit if you're going to not value something significantly or not work to try to protect something. There are going to be tradeoffs associated with either the value and/or ecosystem services that are going to be returned from the area.

It also will reflect and highlight the importance and effect of the human environment interfaces. Again, I think many of you already have this understanding, anyway. Ecosystem services are the attributes that people care about such as clean water, ability to make a living, safe seafood, aesthetics, cultural and property protection.

Some of these you can see are relatively economically based; others have things that are not traditionally monetarily accessible. It brings a challenge into it. Additionally there may be cost to the ecosystem and human welfare as the result of state changes. Those costs can be things such as loss of biodiversity, decreased economic performance, and declines in fisheries.

Part of the process of this is to be able to identify the linkages between those and how they interact with each other. Some of the things of just an idea on why all this stuff can make the effect; this is from a report from Johns et al in 2001 and updated in 2004 and is being initiated for a reassessment presently this year.

Evaluating the direct economic impact of reefs in Southeast Florida, this was for a five-county area; from Martin County, Palm Beach County, Broward, Miami-Dade and Monroe County. Over 6 billion annually in use values, 71,000 jobs, 2 billion in Broward County and 2.3 in Monroe, and similar values for Miami-Dade as well.

AP MEMBER: What year was that?

MR. BLAIR: I think that is 2001. In 2004 there was a minor update to it, but they're going through and redoing that socio-economic – scoping out the redo of that socio-economic study now. Integrated conceptual ecological diagrams or models; one of the products of the MARES group is to try to develop a pictorial representation of the interactions that occur, highlighting the various human and ecological interactions that are here. This is one for the Florida Keys. The intent is that the various factors of concern, seagrasses, mangrove islands, fisheries and so forth are depicted as well as some of the pressures.

Here we have something depicting a Key, with a development on the Key, septic systems and so forth which may be discharging their specific effluence and so forth to the system, storm water runoff and other physical interactions between both far field influences, things that aren't necessarily always going to be able to be controlled or can't be controlled on a local level, as well as those things that do have more of a local impact to them.

Just real quickly, this is the one that was set up for the Southeast Florida Region. This would be the five-county area from Martin County down to Miami-Dade. We have a little bit more

complex system in a manner, because we have a mainland region that has effects into an inner coastal region throughout the area, barrier island areas and the offshore system with various reef areas and obviously a lot of interactions.
Another aspect of trying to show and represent here, you see at the bottom local pressures across the geographic region. The thickness of those lines down there basically are reflecting the relative levels of pressure in those given regions as we move from the upland areas through the Intercoastal and down into the ocean areas.

In trying to kind of look at and understand and be a little bit more explicit about some of the interactions, we're utilizing this DPSER Model, which stands for Driver Pressure State Ecosystem Services and Responses. As you can see going from the bottom, the drivers and pressures and state all have a combined effect that is reflected in the status and ability or the status of the ecosystem services that are available.

Responses can affect and interact on any one of the various levels in the model. The responses are societal reactions such as attempt to optimize ecosystem services or reduce or compensate for cost; our policy and management decisions in response to environmental and social changes such as regulation, green technology and targeting and so forth. There is much interaction.

Even though in general going from drivers to pressures to state to ecosystem is a one-way path, there may well be some interaction between them depending on the system that you're looking at. This is a rough kind of first-cut diagram showing a generalized DPSER for the region, and you can see for drivers they have both kind of near-field and far-field type of system, such as climate change and sea level, population, industry and water management; the various pressures near maritime construction, land-based pollution, fishing and diving, reef damage and marine debris, and then the state.

In the states there are various systems that interact with each other to be able to give a picture of what the overall ecological status is. Based on those rollup, if you will, of drivers on the pressures, the pressures on the state, you end up with an ecosystem services providing cultural aspects, provisioning aspects and the regulating aspect in there is more of a thing on regulating the ecosystem and not permitting.

Again examples of the responses; protecting the natural areas such as state parks, national parks, aquatic preserves; research and monitoring various county programs, universities, and NGOs and governmental organizations; coastal management, both through conservation programs and regulatory programs, various federal-based regulatory programs, and regulation as well as restoration such as the Comprehensive Everglades Restoration Program.

Now, the purpose in doing the conceptual models and the DPSER models is to identify those things that we need to have some level of an indicator on, and most of the indicators are associated with the state conditions but can be for the others as well. Those state conditions, just real quickly, include not just ecosystem status as well but also societal and/or human dimension components as well.

Quantitative ecosystem indicator is a measured or observed parameter that provides information about any consistent component. Indicators may describe patterns in the physical state of the environment, trends in human activities that are affected or affected by the environment in relationships between different paths of the system.

One of the things that we want to do; as we said, we wanted to have this as a science-based process and this is an example of a quantitative ecosystem indicator that was developed by the South Florida Ecosystem Restoration Task Force as a response to some of the Comprehensive Everglades Restoration Program projects to be able to do some evaluation of their benefits.

What it is, is a multi-tiered process or program wherein the data that is collected about a system is evaluated and normalized, in this case relative to a baseline system where that baseline system is considered to have values that are good in that lowest bar, which is a green bar; and then moderate, which is the yellow bar, or an unacceptable or inappropriate level, which is the red area.

As you see over here, the various box plots on the bottom are indicative of the conditions for this specific parameter over the course of time. If you look on the far right, you can see through the plot of the data that there was an event that occurred where we had very high and unusual values associated with this parameter that had not really been recorded in prior years.

What that ends up doing through this normalization process identifies it as an abnormal period. That abnormal period gets a red indicator in the stop light report. Going from data through normalization to some baseline or some stated desired condition, it can be evaluated as to whether the status is good; and in this case green, yellow, red being used, the stoplight indicator as the status of it.

Then those are summarized into a much briefer report that's handed to policymakers, decision-makers and so forth as a much more shortened means for their assimilation of the information and status of the areas. For MARES, the goals are an incorporation of the MARES products into regional planning and regional natural resource management decisions; convergence between agency goals and enhanced collaborative responses to be able to incorporate and work towards the optimization of ecosystem services.

The MARES principles are recognized as a viable and suitable approach for NOAA's integrated environmental assessment. So far where are we at? This project was a four-year project; it started in '12 at three years, so it's wrapping up at this point. This is the final year of it and we have developed the integrated conceptual ecological models for each of the regions. We're working on integrating the human dimension into those as well as the indicator development.

It's intended to provide information useful in decisions that are involving conflicting goals and tradeoffs by evaluating the various human and ecological aspects of it. Development of indicators is ongoing, and its eventual utility is something that certainly does have specific economic and political constraints, as well as a level of dependency on management flexibility; and again as always data availability, because that is always a critical aspect on this.

There is a website for further information on the MARES program. It's a lot of background on it, a lot of background on information that has gone into establishing the process and defining the various levels and information that's there. Please feel free to look at that.

DR. VAN DOLAH: I'm on your website; I don't see your report card. Where is that located?

MR. BLAIR: The report card is under development. What is shown there is the type of report card that we're looking to be able to do. I can give you the link to that.

DR. VAN DOLAH: I'd like to see what the parameters are that you had in the report card, if you wouldn't mind sharing them.

MR. BLAIR: Sure, and again the point of showing that one there was the type of report card that we want. We want a multi-tiered rollup type of thing that will come up into a stoplight. There are a series of indicators that were developed in that mode by the South Florida Ecosystem Restoration Task Force, and it's in a wetlands issue, if I remember correctly. I'll get you a copy of that. It is really neat, a good process.

MS. PUGLISE: Just to add to that is that the MARES, they are still working on their indicators so they haven't gotten to the report card. They plan on having it look like that in the end. The MARES Project is basically adding on the marine ecosystem components to the Comprehensive Everglades Restoration Plan, which didn't look at the marine side of things. We're still working on pulling it off. All the other projects are supposed to end this August officially. I envision it going on and no cost extension a little bit longer.

MR. BLAIR: Well, that's good, glad to hear that. Right now we're knee deep in developing the specific indicators and the parameters to be evaluated for those indicators based on data availability at this point to get it initiated, so, yes, we're still hard into it.

DR. ALEXANDER: Bob, I just wanted to ask you; I know you can't see the parameters they use, but how similar is this to what you've already developed up in South Carolina?

DR. VAN DOLAH: Probably not that similar in that we don't have some of the social indicators in there that I suspect are in this. What we have is a suite of water quality parameters, a suite of sediment quality parameters, and some biological health indicators rolled together into a habitat quality indicator. It's worked well for us, but I'm looking to see how it could be broadened not only within the state but perhaps for the Alliance effort.

MR. BLAIR: We'll exchange reports.

DR. VAN DOLAH: That's fine.

MR. BLAIR: That sounds good, and we're looking at the same thing. The South Florida Ecosystem Task Force Indicators sound like they're much closer to what right now that you have. The human dimension is the difference in this one, and trying to get that in is not an easy task.

DR. VAN DOLAH: And to quantify it.

MR. BLAIR: Correct.

MS. STILES: This is really interesting to see. I liked the pictorial descriptions. It reminds me, there is a similar assessment for the Mesoamerican Reef. I don't know if you've seen it already. But if you're looking for examples of what the report cards could like, they've put together a really nice one. They update it every two years. Be careful what you sign up for I guess in terms of updates. They use it really effectively in advocating on budget issues and in getting press on the state of marine ecosystems in Belize and elsewhere.

MR. BLAIR: I'm not personally familiar with the Mesoamerican Reef.

MS. STILES: I can circulate it.

MR. BLAIR: That would be great, but I know that it has been mentioned and it is discussed and it's being used as kind of a reference in developing other processes.

DR. GILLIAM: Actually that report was on the table in our last indicators' meeting, so why reinvent the wheel? Take advantage of efforts that have already been completed.

MR. BLAIR: Next we'll hear about activities from the Southeast Florida Coral Reef Initiative Region on the management option process.

MS. KARAZSIA: I'm just going to quickly run through just a few slides on a coral reef management options identification process that has just been kicked off in this area of Florida that Steve had referred to, the Southeast Florida Coral Reef Initiative Area. This presentation was developed by Jamie Monty from Florida Department of Environmental Protection.

Steve Blair, Ken Banks and I all are sitting on a process planning team to help get this process started in Southeast Florida. I think Dave is also on a scientific advisory team that hasn't begun to meet yet. Steve and Ken are going to jump in at any time to clarify anything on any of these slides.

Steve also talked about this Southeast Florida Coral Reef Initiative Area. The U.S. Coral Reef Task Force made a recommendation for each of the states and territories and commonwealths or jurisdictions that have coral reefs to identify local action strategies, which are projects or activities to help aid in the conservation and protection of coral reef habitats.

In Florida our local action strategy or LAS is referred to as the Southeast Florida Coral Reef Initiative; and like Steve mentioned the geographic extent is between the St. Lucie Inlet and all the way down to the northern boundary of Biscayne National Park. The four primary focus groups that this area has honed in on are awareness and appreciation, land-based sources of pollution, marine industry, and coastal construction impacts, and fishing, diving and other uses.

Since 2004 a variety, I think over 140 projects under those four primary themes have been implemented or are in the final stages of implementation. What's next for this initiative, and that is that we need a stakeholder-driven process to determine what management options are available and if they should be applied in the Southeast Florida area.

I'm just going back to this slide real quick. You'll notice that the Florida Keys are excluded from this map, and that was intentional because the Florida Keys, through the National Marine Sanctuary, another program, has a very well-coordinated and well-funded relative to the SFCRI area, through the National Marine Sanctuary.

They have coordinated monitoring and management and regulatory programs. They were initially excluded because this area lacked that coordinated management, that lack of coordinated coral reef management. This is the next step in the Southeast Florida Coral Reef Initiative, and it meets the mission statement of the initiative which is to develop an effective strategy to preserve and protect Southeast Florida's coral reef, emphasizing a balance between resource use, protection, and cooperation with interested parties.

Like I mentioned, there were approximately 140 different projects that fell under those four priority focus themes. Many of those provided some important data on the biophysical and social science of the area. We now have all the coral reefs mapped in that area to a one acre minimum mapping unit.

There is also the Southeast Florida Coral Reef Evaluation and Monitoring Program, which Dave and Kate are very familiar with. Then there have also been a series of social science projects that look at the public perceptions of reef condition; an evaluation of how the public would perceive a potential marine zoning plan and how the public would potentially receive this process that we're about to move forward with.

Now we're sort of trying to find a way to integrate all that we've learned through these 140 projects, the social science and the biophysical presented information to the public, have some focus discussion with working groups and then develop some alternatives for what types of management actions could be taken in this area to better conserve and protect coral reefs.

Just a quick review; some of the social science projects, there have been three primary studies. These first two were the result of self-administered studies. This last one had a more expanded audience and more targeted audience. But what we learned from this is that the public believes that coral reefs and water quality have deteriorated the most in Southeast Florida.

Most of the survey respondents indicated that the primary threat is land-based sources of pollution followed by coastal development. Nearly 60 percent of respondents believe that if nothing changes, if no management action moves forward, that the resource condition will only continue to worsen. There is concern that the current management is ineffective due to lack of enforcement.

This management options identification process, this is our latest slide, we keep lumping and splitting different steps along the way, but it's a nine-step process that we envision and we're

currently on step two, which is we have established the process planning team. One thing that we've been able to do, the other membership within the process planning team includes state agencies; it includes the Florida Keys National Marine Sanctuary.

There is representation from Biscayne National Park, Florida Fish and Wildlife Conservation Commission, the Nature Conservancy. We've been talking a lot about the process and how to get this started. We were also asked by the process planning team under this area number two to provide some lessons learned in coral reef management planning processes.

They came to us and said what has the South Atlantic Council done? Steve and I presented on some of the management actions, the development of the Coral HAPCs, MPAs, the special SMZs and Oculina Banks and talked about some lessons learned from those processes that could help us move forward with this.

I mentioned before that there is going to be a series of public meetings to get feedback on what's desired in this area. There will be some specialized workgroups that will develop some recommendations. These workgroups will be smaller; I don't know either divided up by county and some other way.

We envision that there will be a workgroup on spatial planning using a variety of different spatial tools that are available, Mark Sand, Sliding Windows, Marine Map, just to name a few that could potentially be included in these discussions. Then a potential outcome of this would be to identify a suite of management options so this table could be expanded to management options A, B, C, D, E and go on and go on; but, you know, identifying the resource, the threat that we want to abate, the location of the area that's affected; how much of a priority is a particular management option, maybe relative to another management option, and what are some specific implementation needs.

After we collect all this information, we then expect to go back out to the public, probably in town hall style public meetings to get some additional feedback. This is the last slide. This is our timeline. This is where we're at right now with the management planning. We don't expect to take any action or even to have recommendations to recommend for action before the end of 2016, so we're pretty early in the process.

As part of our representation on this process planning team, we're responsible for reaching out to other interested parties and organizations and agencies and doing some outreach on what it is we're trying to do. That's one of the reasons why we requested to be an agenda item today; to fulfill that need. The South Atlantic Council and the Coral Advisory Panel was identified by this team as an entity that we wanted to reach out to and inform where we are with this process. That's just a quick summary.

MR. BLAIR: Thank you, Jocelyn. I think one of the more unique aspects about this approach is it really is trying to be relatively stakeholder-driven in the fact that we're presenting the process of status conditions and so forth and seeking to get desired management options from stakeholders kind of to get the buy-in at the front end rather than trying to explain the process and tell them why this is good for them.

I think that is a positive aspect that is hopefully going to assist as kind of a guide and make it a little bit the management options, both development and also deployment; hopefully a bit smoother process than other types have occurred in the past. Thanks, Jocelyn.

MR. REED: I've had a question about the borders that SEFCRI covers, and certainly the southern part of Florida, the shallow water coral reefs and so forth have a lot of interest and research and protection. It seems that the Central Florida reefs that are north of there do not have the same amount of protection or effort or emphasis.

We drew this border right at the St. Lucie Inlet or Martin County for the northern end. Like all of the LIDAR mapping ends there and everything else kind of ends there, but the reefs don't end there. As you know they are not true coral reefs, but they are very significant hard bottom that occurs between the St. Lucie Inlet, at least up to Canaveral.

But off of Indian River County and St. Lucie County there is significant shallow water reef from 3 meters out to 30, 40 meters inside of the Oculina Banks. It's more similar to the Grays Reef Sanctuary of a hard bottom habitat dominated by sponges, algae, and some coral. You have Oculina coral, you have sidastrea coral; you have some gorgonians, on the deeper reefs some black coral. I don't know if there is any way to get SEFCRI to go north or not or other ways to put more emphasis on these northern hard bottom communities.

MR. BLAIR: Yes, you have to get your own group. No, just to give a little bit of genesis on the formation of that area, this was an initial effort from the state to bring focus into the northern reef track of the Florida Keys. Initially it was a tri-county area, Palm Beach, Broward and Miami, and that was expanded to Martin County in recognition that there was still some aspect of it.

It was still recognized that there were numerous reef systems and extensive reef systems to the north of it, but I think part of it was trying to get areas where the pressures and so forth were the most in the most populated areas of it, as well as kind of more or less defining the northern reef track of the Florida Keys and getting that included.

It certainly was not in any way – and I agree with you 100 percent that there should be additional emphasis on that. We'll be happy to bring that back to – SEFCRI in and of itself has changed over its period since it has been formed as well. It was initially an agency-based program where people at the table either had some agency responsibility or received public input to now it is much more a stakeholder group that is driven through that process in cooperation with the agencies.

I'll definitely take that back and we can see how that can work. And as I say, a lot of it was relative to the types of conditions, stressors, pressures and so forth that exist in that region, and a similar process may be something that can be done to the northern areas as well, if it's deemed, because again how far up do you want to go, because there are certain aspects through most of the area, but we'll bring that back and have that discussion. Thanks.

MS. PUGLISE: I am sure you see the natural linkages between this and the MARES Project, and I would recommend possibly doing the same presentation to them. Since we aren't meeting for a long time, a way to do that would be maybe by webinar. We can usually get – at least get the core group to kind of be aware of it. I know you guys are, but I don't know how aware Peter and everybody else is. I assume to some extent they are, but it might be a good idea.

MR. BLAIR: Yes, I'm not sure how up they are on this explicit task of SEFCRI. They are quite aware of what the program has done, but we can do that as well. We can reach out and get Bill Nuttle to initiate with him and have it dispersed through there. Okay, thanks again, Jocelyn.

What we'll do is move on to some of the briefings. The rest of the morning will be associated with review of information associated with proposed and recommended modifications to the Oculina HAPC and the Stetson Coral HAPC; information that has been received through public scoping and certain requests of considerations from the Shrimp Advisory Panel, Deepwater Shrimp Advisory Panel. We'll start with John is going to kind of give us an overview of the recommendations or the basis for the extension of the Oculina HAPC.

MR. REED: I believe that at the last AP meeting Andy David gave this presentation, so I don't think I need to go through this again other than maybe just briefly summarizing it. During our cruise that I mentioned yesterday, the cruise on the NOAA Pisces ship last year, we were able to go to these areas north of the current Oculina HAPC where I knew there was high relief just based on the available NOAA regional bathymetric charts.

For the first time we were able to go in there and do some multibeam to groundtruth the older charts to show that in fact there was high-relief mounds and then groundtruthed the multibeam with ROV dives verifying that these indeed were coral mounds and simply an extension of the Oculina Coral Mounds that we know exist between Cape Canaveral and Fort Pierce area.

This is the region, this bottom part, this blue polygon down here is the current HAPC. Just put it in perspective, back in 1981 is when I first submitted the Oculina proposal to the council and at that time we did submit an option. The preferred option in my view was to have the western boundary follow the 60 or 70 meter contour line, because these reefs – let me just kind of zoom in on this map here – these reefs, which is all these squiggles within these boxes, so you have all this high-relief rugged topography follows generally the 60, 70, 80 meter region, which is basically an old paleoshoreline from the last glacial period.

This is essentially the beach 20,000 years ago at the end of the Wisconsin Glacial Period. This was hard bottom underlying this. These reefs built up on that since the last 20,000 years certainly. Ideally would be to follow the reef line. What the problem is, when we drew the straight line to follow the 80 degree contour, the 80 degree latitude contour, that was fine at the southern end of the HAPC; but as you go north the 60, 70 meter contour kind of veers to the north/northwest, parallel to the shoreline.

You just can't go straight north and 80 degrees; that's the bottom line. On the eastern edge of the contour, the reefs totally peter out at about 100 meters, between 90 and 100 meters. Those were the two options I gave was this red line is 60 meters that totally should cover any of the

western part of the reef line, and the 100 meters should cover all the reefs on the eastern side, and the 70 to 90 contour covers the major portion of the reefs, but you are losing coral habitat by using the 70 and 90 line that cuts across some coral reef habitat.

This just shows one area which I showed you yesterday, one of the sites that we did multibeam on and ROV dives. Then, secondly, the rest of this is proposed so I just showed – for example, the red line is 100 meter contour. That's based on the CRM 10 meter digitized contour line that you can get from NOAA bathymetry.

As background, NOAA bathymetry is not digitized; again that is a regional chart that we brought in as a Geo TIFF, but those individual lines are not digitized. The background is the CRM 10 meter length. Anyway, the red line is 100 meter contour, the blue is the 90. You can see how you would lose reef habitat if you drew the eastern border following the 90 meter contour.

That's why I said 100 meters. And the same for the western side; this is the western side portion of it. The 60 meter line is the red. The 70 meter line is the blue line. Again, you can see if you drew the western boundary along the 70 meter line, you'd certainly miss habitat such as this reef area right there is totally outside the 70 meter line. That's why I proposed 70 and 90.

Now as far as the second part of the proposal was to fill in – so that's what I called the northern extension. The second proposal was this western extension. Again, the blue polygon is the current HAPC. Those little blue boxes here and here called the Oculina satellite areas; again when I proposed back in 1981, my proposal was to follow the 60 meter line, which is right through here.

You can see how again this habitat is following the coastline. Once you get above about 27, 28 degrees I believe you start – currently the HAPC follows the 80 meter line right there – I mean the 80 degree latitude line, so we're losing reef here. All of this is reef that's unprotected. All of this rugged stuff here is unprotected.

What I did was simply drew in a line as one option of this filling in from this Oculina satellite area straight down to this satellite area and then angling it in back to the 80 degree line; essentially just protecting all of that hard bottom high-relief coral habitat that we know and have verified that's there. That's all I've got to say about that.

MR. BLAIR: What we're doing here is we are going to be hearing and kind of reviewing and refreshing our memories as to basis for establishment of these recommended boundaries and then we'll be hearing about input from scoping meetings and from the Deepwater Shrimp AP as far as their input, comments, and suggestions relative to the recommendations that have been made.

John, I have a question for you? In the areas that you have enclosed which are essentially areas that have been unprotected to this point; what level of information is there on the present condition and status of those areas?

MR. REED: In about 2005 we followed up with additional multibeam of that stretch between the two satellites, so we had one little band of multibeam through there that we never had before.

We came across something like 50 coral mounds in that stretch, which verified the old map. Since then we also had a paper that Stacy Harter was the lead person on the paper where we had ROV dives and kind of zigzagged through those sites.

As you know, it's very difficult to work an ROV out there in the stream. We had the little UNCW, the Super Phantom ROV. Basically all we could do is go north and quite often we would try to go over a mound, but if we were just offset a little bit you couldn't get to it, so you're trying to get over to the left a little bit. Her paper is very good looking at the habitat, fish and benthic communities in that region.

MR. BLAIR: They are still live coral mounds?

MR. REED: That was coral habitat. Most of it is coral rubble from the fisheries over years as we know, but there are scattered living coral and hard bottom coral communities, coral sponge communities. There is sponge, gorgonian, exposed hard bottom and certainly essential fish habitat for the major grouper fish, scamp and gag grouper.

We get black grouper out there that are starting to show up again. They were virtually wiped out in the eighties and nineties, back in the seventies the black sea bass, not black grouper, the black sea bass were like one of the dominant fish out there along with scamp, gag grouper, snowy grouper, speckled hind, and Warsaw grouper. Most of those got pretty much wiped out by the late eighties.

We haven't been able to get out there very often since 2000, but we've had a few submersible dives and ROV dives and we've seen evidence of the juvenile speckled hind coming back. We're seeing for the first time on the recent dives the black sea bass coming back, smaller than they were, but coming back. On those northern dives we did with the Pisces, we were seeing quite a few snowy grouper, scamp grouper, not so much gag, but mostly snowy, scamp, and red grouper.

MS. MARTIN: Thanks, John, for prefacing the talk and the discussions here about expansion of the HAPCs. What I wanted to do is give you just a little bit of background on some of the public scoping comments that we heard during the meetings that were held back in January and February, earlier this year.

We're talking about Comprehensive Ecosystem-Based Amendment 3. The Coral AP has been instrumental in recommending some measures that are currently included in this amendment. These meetings were held throughout the South Atlantic, and I want to thank Ken Nedimyer and Steve Blair for attending some of the Florida hearings.

These were well attended by folks from the shrimp industry and representatives coming out to most of the Florida public scoping meetings. Most of the comments we heard from this group were in regards to expansion of the Oculina Bank HAPC. As you all know there is significant rock shrimp fishery activity off of the Oculina Bank northern – and I guess of the existing Oculina Bank HAPC in that northern region and off of the eastern boundary.

Many folks are concerned about a possible expansion of the northern boundary and not being able to transit through to access some of the areas off of the eastern boundary, traditional rock shrimp fishing grounds. We heard a lot of recommendations for the council considering a transit provision through the Oculina Bank HAPC and some specifics there about what a transit provision should entail.

There is some concern among the shrimp industry about the socio-economic impact with such an expansion, the northern expansion of the Oculina Bank HAPC. We're talking about the rock shrimp fishery. Many of these folks also fish for the deepwater shrimp fishery and there is some impact there with the proposed expansion for the Stetson-Miami Terrace HAPC.

Of course, we heard a lot of reminders from this group of industry representatives that they do not trawl their nets along this coral habitat and that the rock shrimp areas are along the muddy bottom areas. Kind of a constant theme during these meetings was about that, dragging their nets along the coral habitat is destructive to their gear, and so these are areas that they feel they avoid and have done so.

There were a lot of questions during the scoping meetings about areas of mapped habitat and they feel that the proposed expansions are perhaps extreme and nature and cover greater expanse than the areas that the scientists have been able to map. There were some questions there about range of habitat in some of these proposed expansions.

Now those were the scoping meeting comments that we commonly heard. We also received some more specific recommendations from the Shrimp and Deepwater Shrimp Advisory Panel. They met April 20 here in Charleston. We have some recommendations that I guess we'll fold into our discussion of each specific area for the Oculina Bank HAPC and also the Stetson-Miami Terrace HAPC.

I guess we'll kind of cover those at that time when we're focusing on each region; just to kind of frame how we'll organize their comments. What I wanted to do was just give you a little bit of background on what is in the Comprehensive Ecosystem-Based Amendment 3, a general idea of the timeline and how this will be structured at the council committee level.

Roger and I will kind of toggle back and forth. He has some detailed spatial representation of these areas that include areas of mapped habitat along with fishery activity as indicated by the VMS data. We'll kind of shift gears a little bit back and forth. I think many of you have been involved in previous ecosystem-based amendments. This is the council's third Comprehensive Ecosystem Amendment.

The council further refined this based on the public scoping comments during the March council meeting. Many of the measures that were included in the scoping document, which is a previous version I am sure you have seen and reviewed, have been removed. They were either deferred for further development at a later time in a future amendment or dropped from consideration.

We have some issues in there that we're considering, powerhead prohibition throughout the South Atlantic; changing the bag and size limit for a few different snapper grouper species,

including hogfish and gray triggerfish; and developing a recreational tag program for deepwater species. Those have been tabled for now or dropped from future consideration in this specific amendment.

What remains are right here, place-based management measures dealing with expansion of the Coral Habitat Areas of Particular Concern; also dealing with additional protections for speckled hind and Warsaw grouper. We learned yesterday that Regulatory Amendment 11 was approved by the Secretary of Commerce. This was a measure that was put in place to remove the 240 foot depth closure for six deepwater snapper grouper species. The intent with Regulatory Amendment 11 and removing that 240 foot depth closure, that was something that was put in place to address bycatch for speckled hind and Warsaw grouper and more recent analysis indicated that those six deepwater species weren't commonly associated with speckled hind and Warsaw grouper.

The 240 foot depth closure wasn't as affective as was originally the intent. In CE-BA 3 the council is looking at implementing additional protections to address overfishing of these two species. The harvest level is zero but the concern here is bycatch. The council will be looking at potentially expanding the existing marine protected areas and also looking at developing new marine protected areas along the mid-shelf region for these two species.

That's another issue that is in CE-BA 3. Lastly, the other issue – there are three main issues in the document – is improvements in data collection and tracking of annual catch limits. Specifically, they are looking at improvements and modifying permits and data reporting for commercial and for-hire sector and also bycatch reporting.

I think yesterday I mentioned a little bit of detail for the timeline for CE-BA 3. We're currently at the stage where we are gathering input from all of the associated advisory panels. This was something that was presented to the SSC during their April meeting. The AP input will be presented to the council during their June meeting.

They are tentatively anticipated for selecting preferred alternatives for these measures in June and approving this document for public hearings, which will be held later this summer in August, reviewing the public hearing comments once again at their September council meeting and approving this document for secretarial review during the September or the December council meeting this year. This is on track for approval in 2012.

What we would like to focus on with the Coral AP are the measures that were recommended by this panel during your last meeting in September, and these are expansion of the Coral Habitat Areas of Particular Concern. I did want to note that the Deep Sea Coral Research and Technology Program, they're holding a workshop to finalize their fieldwork. This is something that Andy David was talking about during the last meeting.

I think they are looking at scheduling that later this summer in August or September. A number of these recommendations from the AP are work that has been under the Deep Sea Coral Research and Technology program. Like Andy presented and mentioned, they focused their efforts in the South Atlantic surveying uncharacterized areas of bottom habitat for the past three years. Some of these recommendations are tied to that work of the program.

The workshop they're holding in August will be kind of sitting down with the folks involved in some of these excursions and finalizing that field work report. But CE-BA 3 is the vehicle that the council is working with. They are going ahead in the meantime, before receiving this final report, moving forward with some of these measures based on the Coral Advisory Panel's recommendations.

Action 1 and the suite of alternatives that follow Action 1 would look at expanding the boundaries of the existing Oculina Bank HAPC. We do have a note in here that selection of multi-preferred alternatives for this action is possible. We are talking about a range of alternatives for the northern boundary, the western boundary, and a transit provision, just as John had presented, focusing on those two regions primarily.

MS. STILES: I was curious what the current transit status is? There is no transit?

MS. MARTIN: Right.

MS. STILES: I remember that was a distinction between the other Coral HAPCs and the Oculina one.

MS. MARTIN: Modifications would consider possession of Oculina Coral while transiting through, and we'll talk about that in a little further detail. Currently you are not allowed to transit through the HAPC possessing Oculina Coral.

(Remark made but not recorded.)

MS. MARTIN: I'm sorry, I said that before. Somebody else had asked about rock shrimp.

MR. BLAIR: Clarification; right now they can't transit with rock shrimp. Can they have fishing gear if it's stowed without rock shrimp or are they not allowed to transit with fishing gear?

(Remarks made but not recorded)

MS. MARTIN: That's correct; it is the possession of rock shrimp itself.

MR. BLAIR: Itself?

MS. MARTIN: Itself; that is the modification being considered.

MR. BLAIR: It sounds like they can go out with it but once they catch their catch they can't transit back through it; you have to go around.

MR. REED: We had the same problem with the royal red shrimp with the CHAPC. I thought the regulation was they could transit through the CHAPC with the royal red shrimp, but the way the Coast Guard could monitor them was basically by their speed. If they're going too fast, they figure they're not fishing so they wouldn't send somebody out.

MR. PUGLIESE: Yes, and that's where we're going. They did not have that in place before and actually said that they could not do it. That's one of the biggest things that when Anna gets into the discussion on the transit, there has been some shifting in the way that is monitored. I think most of the region has possession of the information now and is actually hands-on with it. They are saying that is exactly what can be done now is you can be able to – and the Law Enforcement AP provided some recommendations for speed. They are basically saying now we can do that. That is where we're going but that was not in place until it goes through this system.

MS. MARTIN: Alternative 2, we are looking at the northern extension of the existing Oculina Bank HAPC. This was kind of the first region that John talked about in his review at that proposal. Alternative 2A is the recommendation from the Coral Advisory Panel. This would extend the boundaries of the existing Oculina Bank in this northern region, and the west and east boundaries would follow the 60 meter and 100 meter depth contour. This adds approximately 393 square nautical miles to the original HAPC.

Subalternatives 2B through 2D, these were developed after the public scoping meetings, taking into consideration some of those comments. Roger and I developed this suite to provide a range of options for the council to discuss and consider here. These modify the Coral Advisory Panel's recommendation, taking into account the VMS activity and the data that we do have in these areas.

With each subalternative scenario there is a different percentage of VMS points associated with each area. I think now what we want to do is kind of shift and Roger can showcase these in a little further detail, again looking at the areas of mapped habitat that we have from the AP scientists that presented this information in September, juxtaposing that with the data from the VMS for this fishery.

MR. PUGLIESE: What I'd like to do is get into the detail on combining, as Anna said, the information we do have on habitat as well as focusing on some of the fishery operations information. That is one thing that the AP did not have the benefit of having that. In this case we actually even better than CE-BA 1 have been able to access the individual point detailed information, so getting a little even more refined view of what is going on relative to this area.

I think it's helping a lot in terms of really, instead of a process component, being able to focus in on what we know about the operations of both the rock shrimp and the royal red shrimp fishery. As the proposal was being developed to move forward with an extension of the Oculina Bank, the first thing reacted was to again request getting the VMS information for the deepwater shrimp fishery, which is the only one that we actually have a VMS on, and be able to analyze these relative to the original proposals.

The first thing we did was look at a data set that was around 330,000 individual points in this. It very distinctly shows, if you look at the offshore area is the deepwater royal red shrimp fishery, and that's the edge of the existing CHAPC. In this case in the northern bound, the one thing that is very different is that you have a fishery that is inshore as well as an offshore.

You see the two distinct – and that's what really brought this issue of transit being very different than what we have now with the existing where essentially the entire fishery on the existing Oculina Bank is on the western edge, concentrated on the western edge or south of that area; so this became an issue here.

If you look at the northern component and then you look at the existing Oculina HAPC, again you can see the distinct fisheries for royal red offshore and then the rock shrimp fishery right along the edge of the area and a pretty significant concentration to the south.

MR. REED: If you zoom in it ; what are all those hits inside there?

MR. PUGLIESE: At this first level here, it includes all points, so it's regardless of speed. What I did is later on I got in and actually looked even closer at the individual areas and put in a qualifier to look at areas where you had a 2 to 4 knot action, which would essentially be – it was acknowledged in the original deepwater trawling, and it really eliminated a lot of these areas in terms of being transit more than fishing.

(Remark made off the record)

MR. PUGLIESE: Well, let me go through all this because that's where I'll get ultimately. You are seeing these here and then what you do is we'll get in and actually have the numbers that came out once I did that. That actually was after I had done this first initial review of it and then went back into the overall points. I'll get into what the percentages and areas are.

MS. STILES: Roger, I just had a clarifying question. These points are from VMS from rock shrimp and royal red are the same boats?

MR. PUGLIESE: Yes.

MS. STILES: What's the time period that you're talking about?

MR. PUGLIESE: I think these are an hour. Originally I thought they were 15 minutes, but I'm almost positive. I looked at the CFR and it's I think an hour hit.

MS. STILES: But this is like this year or last year or something?

MR. PUGLIESE: No, the timeframe for this is between 2007-2011. This is a very wide range of timeframe of the fishery, which would really represent the existing fishery, I would think. There is enough variability over time there. What you're seeing in this first – as we mentioned going to scoping we looked at trying to build alternatives that would provide the range between 60 and 100 meters and then working down the multiple areas.

This was the original translated to a simplified polygon and again the analysis of this relative to the vessel activity. What you're seeing here is you are seeing – you asked about it, Steve, about a chart – this focused only the points within that area. It's excluding the fishing outside. If you

look at this specifically, the VMS points between that timeframe that fall within this polygon amounted to about 6,000 of the 3.000 points.

Now again, this first step is for all VMS points, so it includes all speeds and all activity. What we also show is the combination of information we have for the area. Those are the two mapped habitat areas within those bounds and then the high-resolution bathymetry. There is a lot of that. We're building on what has been effective in the past and combining both the detailed information we have as well as the likelihood that this is going to translate to a lot of other similar habitats within the region.

You see all in context; both the habitat information we have as well as the activity relative to the area, and what you do see is a simplified polygon. I will say that one thing in creating these simplified polygons, they are not absolute in terms of the 60 to 100. The contours were given as guides; and so as these were being crafted here, we took the opportunity to exclude some of those other areas right from the beginning. Working from John's information we're able to probably craft out a lot of the areas right from the beginning.

What you really do want to look at is it's a guide for the area, but the polygon actually is trying to capture as much of the habitat under each scenario. What you are just going to see is the different tiering down, going from the outside bound to now the nearest area at 70 to 90 meter. In this case what you're looking at is between 70 and 90 meters; it goes from what was about 6,000 points to less than 2,200 points or about less than 1 percent – 0.69 percent of all VMS points fall within this area.

Under the scenario with 70 to 100 meters, you're looking at just like right at 1 percent. The last area was 60 to 90, so you're shuffling between moving that inshore and offshore bound either east or west. Under this scenario you're looking at about 1.89 percent. Now this is of all VMS information under this scenario.

Some of it does actually include any of the other VMS that the vessel may have encountered. But the numbers of points relative to the area are only going to go significantly down, as you'll see when I get to the actual use of the speed within this work. Now this is a quick representation of all the different scenarios and alternatives from the most outside bound, which is the simplified polygon for the 60 to 100 meters all the way down to the 70 to 90 meter.

You can see the areas. Now in scoping it was very clear that these are basically physical bounds, and that's why you're not seeing as much of the interaction right dead in the core areas. You've got the hard wall system essentially offshore. Then as John had talked about, you've got the paleoshoreline inside, so a lot of vessels have not been able to work in the interior of these areas. At least the main core part of it is naturally somewhat protected.

Now when you move to the southern area, you look at the proposal relative to the VMS information, and it is again fairly limited inside this. Looking at that as John had showed, you can actually see the VMS compared to the high-resolution bathymetry. There have been some interactions in here, but again you have to really look at the numbers; because in this entire area

we're looking at here, you have 212 points that have occurred in that area out of 313,000. That's for the entire VMS data set from 2007-2011.

I think there has been a request from the Chair to have this all in combination. What we're seeing here are the alternatives combined as well as the existing Oculina Bank HAPC and the proposed western extension. Now this is getting into the one step-down. This is kind of the combined information, looking at the vessel monitoring information relative to all the alternatives, as well as doing one-step processing further, and looking at capturing what would be considered fishing, which would be moving between 2 and 4 knots.

The most extreme one is if you go to the 70 to 90 area, you drop from what was over 2,000 points to 478 points of the 313,000 points that have occurred within that region. If you go to the other extreme, the 60 to 90 meters it is almost a third, less than 1 percent, 0.8 percent of all what are actually operating, which would be considered fishing fall within this area.

Now there is a qualifier that it does include all of the VMS information. There may be some that cross when they're both transiting and other areas when you look at the outside; but zooming in on this, this is actually what would be the baseline fishing within that area that has ever occurred within that entire timeframe between 2007 and 2011.

MS. STILES: Roger, I just want to make sure I understand because there are a lot of percentages being kicked around. Are you saying that the largest proposal, like if we expanded it to the full amount that John suggested, what percentage of the VMS fishing points are in? Is it 1 percent or is it –

MR. PUGLIESE: With this it is 0.8 percent. Now as I mentioned, it is qualified, because if you did look at – one of the other things I was going to look at was maybe to also zoom in further to only capture an offshore area. Some of the points are probably going to occur inshore, because of the vessel moving or fishing in some of the nearshore areas.

MS. STILES: Okay, but it's less than 1 percent for any of the possible alternatives that we're considering?

MR. PUGLIESE: Relative to the entire VMS data set, so it may be a little bit higher if you really look at only the deeper –

MS. STILES: But it's not going up to 5 or 10 percent.

MR. PUGLIESE: But it's still not – the key is that if you look at the number we're talking about, 94 points out of 300,000 points. Yes, it's going to be probably in reality somewhat higher because of a focus on just those deep areas, but it's still small numbers, especially when you look at something like 478 points out of that. I don't care how high that other point goes, it's going to be a lower number.

DR. ROSS: Yes, I just wanted to ask another point of clarification. It may be even less significant than that because we're getting one-hour pings. These are multiple points for maybe

a single boat operation, right, over four years' time period? It looks like there is relatively little – even less fishing activity than all these individual points would suggest; is that not correct?

MR. PUGLIESE: Yes, because you are looking at trips, so it's including – probably if you got down to the trip level it would be –

MR. NEDIMYER: Just to drill down and clarify that; all the 300 and something thousand points, if you excluded all the ones that were transiting from that number and then did the same exclusion in the proposed areas – do you know what I'm saying – because all these numbers are points, but a lot of them are transiting points; and if you've taken all those out, how many do you have left, and then how many do you have left in there. Is it still about less than 1 percent?

MR. PUGLIESE: Truthfully, I haven't done it that way. I was focusing mainly on the area itself. I'd have to go back there and look at it.

MR. NEDIMYER: Well, because it does skew the numbers off quite a bit, and I think that they would look at that and that would pop out on them. It might be something to –

MS. MARTIN: As I mentioned, we received some recommendations on these proposals from the Shrimp AP. Specifically looking at the northern extension here of the existing boundary, the Shrimp Advisory Panel came up with a recommendation. They used Alternative 2B, which would follow the 70 and 90 meter depth contours to kind of provide an additional recommendation for the council to consider. They based it off of track data and some points that they had received from some of their captains associated with the industry. This is a new alternative that will be presented to the council in June; and one that they built off of Alternative 2B, which is in the existing document.

MR. REED: Who did that?

MS. MARTIN: This is the recommendation from the Shrimp Advisory Panel and the Deepwater Shrimp Advisory Panel. They met jointly; I don't know if I had mentioned that.

MR. PUGLIESE: This is a product of their discussions on what they would do in this area. They made it fairly clear that this was going to be like their best-case scenario for the fishermen. Originally the discussion was that it was going to track exactly that 70 to 90 meter area; and from relooking at the area, actually what they've done is compressed it even further especially in the western edge, as well as cut off the northern component, too.

They really did make it the best for the fishing operations as they wanted to have. The other one really was trying to capture more of the habitat and track the area, so that I think needs to be clear about what. They were really focusing on the best-case scenario for what the fishing operations would be.

If you did look at this, there would probably be even less numbers in this, but it does change the scenario of trying to exclude some of the areas right from the beginning that John had identified if you went with one of these other alternatives, so I think that needs to be put in context. The

other component – that's the focus on the northern area. There was a discussion for consideration of possibly opening up another area and again trying to – in this case they said look between 100 and 140 meters I guess is what they ultimately provided as a recommendation.

That wasn't done at the AP meeting itself; this was provided after the AP to put in a shrimp fishery access area; this entire area that we're talking about in here, which is right through the center of the existing Oculina Bank HAPC and even encompasses the experimental closed area. There were a lot of qualifiers about how significant this proposal might be relative to the existing habitat protection, species managed under the Snapper Grouper FMP, and consideration that this area – and I think John even added in the comments about seeing more juvenile speckled hind and Warsaw in these existing closed systems, but this has still been provided as a possibility of looking at some of the mud bottoms or other areas that exist within the existing Oculina HAPC.

MR. REED: In the original HAPC, well, the expansion in 2000 of the OHAPC, the eastern border they went out to; what was that, 600 feet or something?

MR. PUGLIESE: 100 fathom curve.

MR. REED: Yes, again, the Oculina ends at 100 meters. Anything east of 100 meters by and large is not Oculina, and it will be a muddy habitat.

MR. PUGLIESE: Well. did you want to touch on this first before I go into this? Why don't I shift it back before we get into the Deepwater HAPC?

DR. ALEXANDER: I have a quick question before you move on. When these guys are doing shrimp fisheries, are they going isobath parallel or onshore or offshore?

MR. PUGLIESE: Parallel mostly because of the currents, the way the currents are in those areas.

DR. ALEXANDER: If someone is shrimping along the isobaths through these areas, that would make even all those points fishing within the area even more likely to be single trips than if they were going across it?

MR. PUGLIESE: Yes; and if you look at what was the traditional fishery on the western edge, they are very effective at basically fishing that line. There is some heavy, heavy fishing right within there. Truthfully, when we did the original rock shrimp amendment prior to even CE-BA 1, we had identified that I think if we had moved a mile or two on that western edge, that was going to constitute I want to think 50 percent of the fishery. They fish north and south and very tightly on those lines, a lot of times catching those shrimp as they're moving up out of the deeper water.

MR. CRAMER: I have a quick question for you, too. I'm kind of new to this deepwater coral thing. These HAPCs, do they just regulate like bottom trawling or do they regulate deep-drop and hook and line or surface trolling or anything or is it just basically bottom trawling?

MR. PUGLIESE: It's all bottom tending gear, basically any gear that would damage the habitats, but it also includes anchoring, the use of grapples and chains within these areas. Those are in the existing Oculina HAPC and do also apply. The one difference in the Deepwater Coral HAPCs, the CHAPCs that are deeper than 400 meters north, 300 meters south, is that we have a mid-water trawl prohibition to prevent any type of development of a trawl fishery that would skim the surface of the mound areas or anything like that, but it is targeted at habitat conservation of any benthic habitats from those gears.

MS. MARTIN: The Shrimp and Deepwater Shrimp Advisory Panel also had a recommendation for modifications to the western boundary. Sorry Margot, did you have a question?

MS. STILES: I'm not sure if this is the right time to ask this question, but I'm trying to figure out what we think happened in the current Oculina area, because it seems like people are really not fishing in there, but John and other scientists have seen coral rubble damage. I'm wondering do we think this damage happened before the Oculina closure or do we think there are boats without VMS out there that are fishing? Obviously, it could be a single trip. It doesn't take very long to smoosh a coral. But I'd just be curious what the staff thinks is the story there, because it seems like even in the open area they are not actually fishing there, but there is damage there. How do we think that happened?

MR. PUGLIESE: In the northern area I think it's just – I mean, you talk about that many years of occurrence; in the original proposal there was a lot of test work that went in the center, those goat trails that were created in the center of the Oculina Bank. There are probably some similarities of some of the routes that they could travel through in between – they may not be able to trawl directly over the top of those, but there is nobody that is going to argue that there is damage when they are trawling between the areas, and especially when they are getting in flat areas where you have coral. The hard substrate, not just the mounds, but hard substrate over there, they can easily damage that type of thing.

I think especially in the northern, the fishery actually has transitioned probably predominantly to the north, and then went to the south and now it is occurring more both inshore and offshore in the north. Damage definitely has occurred in those areas from the fishery. With regard to vessels not having VMS, I don't think that is the case in here.

I think if they knew any vessels that were around them that were fishing that weren't supposed to be there, that they would also be – I think we have a pretty tight capture with the VMS system we have in place right now. In the Oculina itself, they're doing FLIR and a number of other types of actual getting out there and monitoring a lot better than it did in the past. I'm sure, especially in the northern area that is damage that occurred for many years.

MS. MARTIN: Back to a couple of the remaining advisory panel recommendations from the Shrimp and Deepwater Shrimp; looking at Alternative 3 under Action 1, the Joint Shrimp AP recommendation was for this area that has been recommended for expansion by the Coral Advisory Panel to be in the mix for future consideration for a shrimp fishery access area.

The panel does feel like there are some historical rock shrimp fishing grounds in this area, and that this is a recommendation that will come before the council in June; this being a potential access area for them in the future. Alternative 4 considers a transit provision through the Oculina Bank.

This is something that was presented to our Law Enforcement Advisory Panel and our Law Enforcement Committee. During the March meeting they met in conjunction with one another. They seemed in agreement with the terms that should be considered here for a transit provision. Again, this is specifically tied to the scoping comments and discussion that we heard from the shrimp industry during those meetings and their AP meeting, that if these modifications are considered, then a transit provision has to be in place to allow them to motor through the HAPC to access some of those areas that they are currently fishing off of the eastern boundary.

These are stipulations identified by the Law Enforcement Advisory Panel. There is currently a transit provision in place for the marine protected areas and that is language already identified in the Code of Federal Regulations The Shrimp and Deepwater Shrimp Advisory Panels further clarified what stowing of gear would entail for them.

This is something that they would like to see mean stowing gear. It would be doors and racks and nets out of the water, maintaining a minimum speed of 5 knots; and anyone motoring less than 5 knots is likely trawling, so anything above 4 or 5 is not at trawlable speed. That has been a stipulation identified here and a potential transit provision.

MR. BLAIR: Do you know if there is in the original language for stowing your gear; is there anything more specific? In other words, what is the difference or what type of modification is being done to the definition through the Shrimp AP's recommended definition?

MS. MARTIN: I think what is currently in place – I can't remember off the top of my head; I'd have to reference the language there. It has something to do with taking the nets down. I'm not sure; let me check on that and get back to you. The advisory panel recommendation took what's currently in place a step further, to mean doors and racks and nets hanging out of the water. I'd have to go back and get more detail on that one.

MR. HARRIS: That's not stowing; that's just transit, running and getting ready to trawl another place if you've got the doors hanging off of the rigging.

MR. BLAIR: If we could get some clarification or definitive aspect on that, because I think that would be something for consideration. I can understand there may be some aspect of it that we may be able to consider, but it does sound like they just want to have it ready to trawl as soon as they can as opposed to having gear stowed. We'd like to make sure it is more towards the gear stowed provision.

MR. HARRIS: I don't think they are really going to have it ready to trawl as soon as they can as much as – (rest of remark off the record).

MR. BLAIR: Excuse me, not that I'm looking to have it necessarily that way, but there may be some median aspect that provides more assurances relative to, as you say, doors on the deck. But whether or not we have to require or we would consider having to require stowing of the nets, there may be some other way that we could work with it. It would be good to try to understand that better.

MR. PUGLIESE: One thing in the discussion of the Law Enforcement AP, I think one of the things that came out was NOAA Law Enforcement really wants to try to make sure that when you have those types of provisions, they apply across a number of fisheries. I think that's going to be a key because they are not going to have transition.

When it's stowed below deck, they are going to have one application for all the different fisheries. That was emphasized at the Law Enforcement AP meeting. I think that is going to be more of a controlling factor in this.

MR. BLAIR: Their consideration is it should be a single definition across all fisheries?

MR. HARRIS: Correct.

MS. STILES: I wonder if we could find out how much time it takes to do these different levels of stowing, because to me that's kind of the limiting factors. It's just like you see the cop and you hit the brakes and it takes one minute; or is this like this takes about 20 minutes, half an hour, an hour to actually detach the doors, pack them away and such and such. It's a real operation change as opposed to just a momentary adjustment, because I don't have the knowledge to know what the difference is, and I'm sure that others do.

MR. BLAIR: I'd also point out or ask these are provisions that are existing should they transit through existing areas; or is right now just for MPAs and not for HAPCs?

DR. ROSS: While they're looking at that, our job here is to come out of this committee with a recommendation on one of these proposals, correct? As we did last year, I think we endorsed John's original proposal.

MR. BLAIR: The intent here is to take the information brought back to us or provided to us from the Shrimp AP's recommendations. We can consider the extent to which modifications of the original proposal could be done to consider that; or if we decide that other factors outweigh those modifications, we can reaffirm our original proposal.

DR. ROSS: Are we ready to discuss that at this point or where are we?

MR. BLAIR: I think we have a little bit more information to do. Is there a point that we could take a break?

MS. MARTIN: We're kind of going region by region, so we've wrapped up the Oculina Bank, the northern and the western and the transit provision. We were going to shift over to building

off of what you presented yesterday with the Stetson-Miami Terrace, potential expansion of the western boundary next.

DR. ROSS: I'd recommend that those are pretty separate discussions with different issues, if we could deal with one at a time. That way we don't go back and forth.

MR. BLAIR: You'd like to go ahead with the discussions of potential considerations for the Oculina. I think that's a good path to take. Could we take a ten-minute break and come back to that discussion?

MR. BLAIR: Okay, our attempt here will be able to kind of look at it region by region. We were just given the background information associated with the northern extension of the Oculina HAPC as well as the western modification of the area, as well as the concerns and statements of recommendations from the Shrimp Advisory Panel and Deepwater Shrimp Advisory Panel.

I think that what we can do in our consideration is to frame it and look at the alternatives that are already specified; consider those as a means of either accepting, addressing, or working through potential concerns that may be there if we feel that they are appropriate for consideration or acting on.

I know that it seems if our intent is to be able to encompass and incorporate as much of the habitat as possible, then it would seem that the area of 60 to 100 meters would be the considered alternative that we would like to remain or keep. In looking at some of the areas within that however, it does have areas that would be considered potentially useable by the shrimp fishery as well as it's not all mound areas.

There are areas between 60 and 70 and 90 and 100 that do have some mud plane areas that may be useable for them. The areas that were initially – it would seem it would be in a way that the 60 to 100 would also serve to help protect them a little bit in the sense that we know that there are habitat relief areas within that zone.

If it is their intent to not be in those areas and damage their gear by doing it, then it serves a little bit for protection on those purposes as well. For consideration, as we know that there are areas in that 60 to 70 and 90 to 100 that may be fishable and useable by the deepwater shrimp fisheries; a consideration may be to take and stay with the recommended alternative 60 to 100 meters, but potentially consider allowing for an access area in the 60 to 70 and 90 to 100 for the shrimp fishery. This would still maintain gear restrictions throughout the total HAPC so that we'd still have the protections for that, but those areas that are deemed appropriate and useable for the shrimp fisheries are still available for that traditional purpose. Considerations and comments?

MR. REED: I guess my opinion is that the 60 to 10 meter contours, as I outlined in the proposal, covers virtually all the hard bottom; so if we're trying to protect coral habitat, that would do it. Coming in on the western border, when you go from 60 to 70, the western border, that contour is

very rugged. I mean the lines are going in and out, in and out, and it be very hard to say, well, it's 70 except for where you've got apparent reef between 70 and 60.

I don't know how you could possibly cut it in and out to avoid hard bottom between 70 and 60. On the eastern side, the difference between the 90 meter contour and the 100 is very narrow and in a straighter line. If anything, the 90 abuts the eastern foot of all these mounds, so you definitely would be cutting off a portion of those mounds; whereas, the 100, which is not that much further east of the 90, you're dropping off there pretty quickly, would give you a little bit of buffer to protect the eastern edge of the mounds.

DR. ROSS: We have a lot of information here. It seems like with all of the VMS data, that even if the percentages are adjusted the way Ken suggested to the actual fishing operations, it's still a fairly small percentage of overall fishing that occurs within these areas. What John is suggesting allows for some amount of buffer around these places.

I think one thing we ought to consider in this is that everything we've heard about Oculina over the years is indicating that this region is slow to recover, if it's recovering at all. Part of what we're potentially doing here, in addition to protecting some newly discovered Oculina habitat, is protecting the substrate that may allow for additional recovery as well instead of additional destruction.

I think our job in this committee is to protect the habitat and not necessarily the activity that's destroying it. I would opt with John's analysis and other people that have looked at this area with the most conservative view.

MR. NEDIMYER: I agree with Steve; I think our goal is to protect the habitat. I think that allowing shrimping right up to the edge does increase the likelihood of us damaging habitat. I guess I feel like a buffer around these things is not a bad idea. The habitat is dependent on – just because we're looking at coral, these shrimp and stuff that live in this mud habitat adjacent to the coral area, it's part of the system.

The fish that live in a coral area go out and graze on that stuff and eat those shrimp. You could look at it as a recharge area, a marine protected – I don't know, I just think it makes sense. If we're cutting 1 percent of their fishing area out, I don't see that as a big deal. It might be a big deal to the people that were in that 1 percent, but I just feel like John's recommendations are sound and I think that's what we ought to recommend. That's what I would suggest, anyway.

MS. STILES: I agree that John's recommendations are great and support them. It sounds to me like the 60/70 meter difference is perhaps bigger than the 90/100 meter difference. I'd prefer not to see any options that have 70 meters as a possibility, because it seems to me like that, at least from the pictures that John showed, that clearly cuts in half some of the habitat.

It seems like we could be more flexible on the 90 to 100 side, but on the 60/70 there is no buffer there. That is just where it is. At 60 it didn't seem like there was a huge amount of buffer there. There might be buffer if it were at 50, but it seemed like 70 was right in the middle of the reef. I

also feel like that for this proposal that it doesn't make a lot of sense to discuss a shrimp access area; that either there is fishing or there is not, because there is just one fishery involved.

We talked about access areas, and I think they made sense in the context of the other coral HAPCs, because we had two fisheries. We are managing gear conflict as well as protection of habitat, so there were shrimp access areas and the crab access areas. But if there is only one fishery, I feel like having a protected coral space with shrimp fishing access, that just means that it's outside the HAPC.

It seems to me sort of silly that really if that's what your outcome is, you should just call it outside and not call it inside with an access area, because there is really just one kind of fishing. The transit, it sounded like we got some good information from Anna during the break about transits, but I don't know if people want to hear about it.

MR. BLAIR: Anna, do you want to summarize?

MS. STILES: Someone had looked up the language from the other transit language that was in the other amendment, I think.

MS. MARTIN: Well, I think Duane was mentioning it. Again, I think it's something he already discussed. What is currently in the CFRs for stowing of gear is much more restrictive than what the Joint Shrimp APs are suggesting. They are suggesting some modifications that would entail not stowage of gear under decks.

Again, the specifics I'd have to kind of pull up and showcase to everyone. I don't have those accessible right now, but there is just that level of detail. The modification that they're interested in is not fully decommissioning some of that gear while maintaining the minimum speed of 5 knots.

DR. FEDDERN: Such a buffer area around the HAPC area could serve as a shrimp replenishment area where the shrimp wouldn't be harvested. It would be able to repopulate and then spread out from these areas, just like these spa areas down here. It might be good for both ways.

MR. BLAIR: For the areas of the northern extension, my point of asking about the quality of the habitats in those areas is if there was any indication from information that has been gained through the ROVs or any other aspects that would indicate there is already impact from the fisheries activities in this area.

MR. REED: I would say visually what we saw; the habitat is very similar to what we have in the northern portion of the current Oculina HAPC. As you know, that was open to shrimping up until 2000. Between the time we first mapped the Oculina in the seventies and eighties, until then that is when the majority of that damage occurred.

The fishery started about in the seventies. We know speaking to the original fishermen out there that have told us how they fished the mounds; and as Roger knows they would drag essentially

chains between the boats or behind the boats to knock down the coral to make a goat trail and spread it out and spread it out. The shrimp are definitely in the coral rubble as well as out in the mud. It's similar habitat as the northern part of the HAPC coral habitat.

MR. NEDIMYER: I think it as kind of following up on what I had said earlier, it really tails in on what Henry is saying, I don't think it is a bad thing to have prime shrimp areas closed. These little loops and things in there, if you drew a straight box around some of it, I think it's a good thing.

I think the shrimpers would ultimately benefit by having a closed area that there is spillover, there is protection of the some of the shrimp habitat undisturbed. I think it's really important and I think that we should be thinking about that as much as anything. Maybe we're not in the shrimp marine protected area business right now, and maybe they don't want to think about that, but they ought to be thinking about it.

MR. BLAIR: I don't disagree with that, but I do think that we need to keep our focus on the habitat, which I think we have been. Even the alternatives that are under consideration are explicitly designed to do that. Again, I don't disagree with that aspect.

MS. STILES: I have a question about the layout of the Oculina mounds and whether there is a channel through the banks, that there is sort of a break between the current HAPC and the new one. I don't know if that is because there is some kind of natural break there or there is no break. The reason why I ask, because I was wondering if it would be better to have – I guess it makes me really nervous to make the thing skinnier and skinnier just because really skinny protections tend to be harder to enforce.

I wondered if it would be better if the shrimpers, if they have a valid need for getting out past the banks, if there were like little channel in the middle that they could go through, because I feel like I might prefer to see that rather than see the thing get so skinny that it's not realistic.

MR. PUGLIESE: I don't think there actually is a break. If you look at this, really it doesn't show the western extension. When you add that in, I think you have more of a continuity of the whole system. There had been discussions about creating transit zones or whatever, and that was all thrown out. Both the industry as well as law enforcement said they don't need it.

There is not real natural break in the system, as John said. When you add in that western extension, you have more of a continuity of the entire system. It is larger; you don't have any narrowing down. This is capturing that 60 to 100, you add in the connection of the satellites, and then that southern portion which tracks close to the 60; it is a larger area.

DR. VAN DOLAH: I guess would like to lend my support to Steve's recommendation that we stick with the 60 to 100 meter contour lines for adequate protection of the resource. I guess I'd encourage Roger, if it's not a huge deal, to kind of recompute the percentage based on the way Ken suggested, which is taking it just from those points that are 2 to 4 or less than 4, 5 knots, whatever it was that you used. The percentage will go up, but I think if we can show the industry

that less than 3 percent or less than 2 percent of the total activity is being affected by the current recommendations that we have, that's hard to argue against.

MR. BLAIR: Yes, Bob, and kind of to ask for a clarification on that, I don't think that we need to wait for that, but it is something that I agree that it strengthens the argument and takes away some of the criticism that may be forwarded by the industry when you harden the numbers that way. That may be a very good idea to have that in your pocket, so to speak.

MR. CRAMER: Just some of my notes to the discussion; on the west extension I have no problem with that because there is so little fishing activity going on in there. The north extension, I kind of like the idea that you came up with before you started the discussion about maybe letting the shrimpers still have access to the 60 to 70 meter zone.

The reason I think that is because as a fisherman I kind of understand what they're talking about. I believe that they're only fishing those areas between the hard bottom because of their gear. We have the same thing in my fishery, we fish between the hard bottom and the sand strips. The buffer zones, we've gone through this before down there in the Keys.

The fishermen now, it is so different now than it was 20 years ago. With the GPSs and the auto pilots, we had them before but we're good to sometimes 3 feet. These big buffer zones or replenishment zones for the shrimp, I think that's up to the Shrimp APs to decide that. I don't know what the stock assessment on it, if they need to be replenished or if they are a healthy, sustainable fishery.

This is a Coral AP and not a Shrimp AP. I don't think we should get into managing the shrimp fishery. I also believe that on the transit thing they are moving in and out a lot between those two zones offshore, outside of the 90, 100 meters and inshore. I think we should make it – there is not much fishing activity right now the way it is set up without a HAPC.

There is not much going on in there now. With them not being able to fish in there, there is going to be even less. I think that the gear storage shouldn't be too burdensome for them. I think that we should try and help them out. Another thing, if we're going to make this huge swath that they're going to have to traverse back and forth, we should make it convenient for them, because we're putting a burden on them. That's a fisherman's point of view.

MR. BLAIR: Thank you, I appreciate it. I think it is not as though they are not allowed to transit; they just have to meet requirements to do that transit. Just in the same way that I'm not a shrimp fisherman and so forth, I think it would be best for them, if they want to modify the existing language on what's allowable for transit, that they work with law enforcement and so forth to do that.

I'm not sure that we're in a position to make that statement. It's something that I think that they can work with the other APs and the council to be able to develop that. I appreciate the aspect. I agree with you that our decisions should not be based on the shrimping industry. Our decision and the purpose of this AP is to work to protect the habitat, in part that that fishery depends on. We are by default, if you will, through our process of protecting these areas assisting them.

That's a supplemental aspect, but our decisions should be based on habitat protection purposes. That's where our focus should stay. Obviously with that protection, there are supplemental benefits to all the fisheries.

MS. STILES: Thanks for your comments, I appreciate them. I think if we're focusing on corals and if we're focusing on habitat protection, I actually would feel much more comfortable if there were not a transit provision, if it was just closed. I recognize from the council's perspective I think it makes sense to consider a transit provision.

But if you're really just talking about the coral, transit makes enforcement of closed areas very difficult, and I think that is a fact that should be recognized. I don't really want to make the amendment any more complicated, but I think we could consider allowing transit through a smaller portion of it and be like in front of a port.

If there is a port that we know and we look at the VMSs and all the little dots go a certain way, and we want to put transit through that little highway, almost like a path; you know, people make paths if you have a park. You get those little brown paths that people just make. If we put a transit spot there in the place that makes the most sense for the industry and keep the rest of it protected, then that would make sense.

I always think there is a balance between not being a pain in the neck to the great majority of people who are just doing their job and catching those small percentage of people that are really out there to do damage, and very, very small, maybe one person, but there is sort of a balance between not being a big pain in the neck for everybody and making sure you do catch that.

I think it's a lot like when you have a road and you put a little Jersey barrier to make sure nobody goes off the edge. Nobody wants to go off the edge, but every now and then it happens. That Jersey barrier needs to be hard enough to catch that when it happens. I guess I would think it would be maybe worth thinking a little bit more creatively about how we handle transit instead of just opening the whole thing up and see if we can meet both of those needs at once.

MR. BLAIR: Again, remember, transit isn't banned. It's just you have to meet conditions to do that. I think at this point again, with the fisheries right now there is no proposal for that transit area and I'm not sure we're in a position to decide where that should be. If the fisheries or the council wish to bring that information to us, as you say if there is something that would be the most appropriate that they deem, that may be something we could consider. Right at this point we don't have that information with us. It is something that if it's brought to us, we can consider.

MS. STILES: I was thinking of the information that Roger showed about the VMS points where people go.

MR. BLAIR: Just in general, it just looks like there isn't that, as you say, well-worn path. That's why I say that I think that we would need additional information and the request to have that.

DR. FEDDERN: Well, the transit areas would be very costly in terms of fuel, because a vessel can come out of any number of ports along the shore; and when they end up fishing and they want to come back to detour or dog leg to a transit port, it could cost them a lot of fuel rather than going straight back like you can, because there is no highways out there.

MR. BLAIR: I think that what we are doing relative to transit aspect is if there are other options or considerations that are brought to the panel, we can consider them. At this point there are options. There are provisions to allow for fishing vessels to transit the area that are existing; and if they wish to ask for modifications of that, they need to work with the law enforcement and the council to be able to develop an appropriate proposal for that for our consideration.

MR. CRAMER: I just wanted to add something to Henry's thing. It is not only the fuel – and I know you want to get off the subject because it's really not our decision – but it's also safety issues. If you have something that you know will spring a leak on the boat and stuff and you don't have some way to transit through that area, do you dump your catch? If you have adverse weather come up out of the blue, you need to be able to traverse that area without having to worry about having your catch on board. That's it.

DR. ROSS: I think we're ready to move on with a decision on the borders. I think we haven't heard any contentious argument about that part of this, and there are lots of details like people have pointed out concerning transits and other issues to be worked out later. I think we ought to call for a motion and move on.

MR. BLAIR: Hearing a call for a motion; can I get a motion for a selection of a preferred alternative, please?

DR. ROSS: **I would propose that the committee rule on the motion that John originally proposed for a 60 to 100 meter east, west boundary on the northern polygon and that be the proposal that we move forward with as a committee.**

MR. NEDIMYER: Second.

MR. PUGLIESE: Yes, and just for the record clarification, the way we have the alternatives laid out, we have the simplified polygons, which represent the different alternatives. That's endorsing the simplified polygon. What you do have the opportunity is if you would like to adjust those further; actually could take those points, if there is anything beyond the existing areas. I think this is tied almost to the original wording as tracking exactly the bathymetries. What we have is the polygons that represent that in the alternatives that are put together.

MR. BLAIR: Those are the polygons that you were showing before. If we could, could we go ahead and get those projected so everybody is in agreement as to what they represent.

MR. REED: While you're pulling that up, Roger, essentially what you said is you took the 60 to 100 meter, looked at the CRM 10 meter contour lines, right, then kind of pulled in the 60 meter to abut any apparent high-relief topography, is that what you did or what?

MR. PUGLIESE: Yes, in each of those different ones. What I'm actually projecting right now is the one that is showing the points for the 60 to 100 meter, and what it did is captured – it's using this bathymetry here, but I used the 10 meter to actually create the points, but trying to also, where possible, capture things that may have been obviously going to be missed by a specific line, so it was trying to capture as much on all the alternatives, even the 70 to 90.

So that statement on the 70 to 90 under these alternatives; actually if you look at the outside bind of that line, it captures all those areas that you have identified, intentionally, trying to get those integrated into the bounds of any of these different alternatives. But this one here is the 60 to 90 and you can see it's capturing the mapped habitat areas and capturing the high-resolution bathymetries as you had provided.

MR. REED: What was the total area of this version?

MR. BLAIR: Also if I could get some language for reference to that figure so that we can include it in the motion. Correct, the appropriate one, the 60 to 100 that matches the requested – or the motion on the table for the preferred alternative.

DR. ROSS: That's Figure 1 in Attachment 6B, I think. Roger, you were saying that was Subalternative 2?

MR. PUGLIESE: I reformatted this specifically to site that; that would be the best way.

DR. ROSS: That's the motion that is on the table.

MR. ROSS: It's a modification of Alternative 2A; is that what you're saying? Is it like a 2A/B?

MR. PUGLIESE: It is it as represented with a simplified polygraph; that's all it is. It's still capturing the 60 to 100 meter recommendation, creating it using the bathymetries and then capturing it.

MR. REED: In the total area?

MR. BLAIR: All right, it's Subalternative 2A, that it would be following the 60 and 100 meter depth contours as diagramed and depicted in Figure 1 of our present briefing attachments?

MR. PUGLIESE: I think it's approximately 430 square miles.

(Remark made off the record)

MR. PUGLIESE: But that's based on the bathymetry; that's what I was trying to tell you is it was based on a based bathymetry versus a straight line capturing of habitats. There is going to be a variation. That's why I said you need to attach that to the one you are looking at specifically.

MR. BLAIR: Essentially in the tweaking to capture the additional areas, we've expanded the overall size as opposed to just being based on contour explicitly. **We have a motion and a second. All those in favor please raise your hand. It is unanimous.** Were there any dissents? Oh, I apologize, Jeff.

MR. CRAMER: Just looking at the map, and when you went to the 60 to 100 right there, and when you went down to the 70 to 90, it still appeared to me that most of the dots that are concentrated there were still inside that 70 to 90 zone. Either way you are pretty much going to knock out all those dots, all that fishing where it looks like it is concentrated.

MR. PUGLIESE: This is just showing you what is actually in that polygon. That's what I'm presenting here. This is not showing the entire VMS footprint.

MR. CRAMER: Right, I understand it is just showing what's inside the 60 to 100 or the 70 to 90; is that what you were flipping back and forth between? It appears to me that there is hardly any difference in the dots between the two zones. When I looked at the data you had and it said it was 2.2 percent; and then like Ken was saying you take out those transit dots that were outside of the zone, it could be 5 percent of their actual fishing, which is quite a bit.

MS. STILES: If I could comment on that; I think what's going on is that the 99 percent of the dots are south of here, and that's why it may look from this map like – I agree, all the dots are basically in the box, but lots and lots and lots and lots of dots, many, many, many more than those are actually south, so they actually don't come up here very often; is that correct?

MR. PUGLIESE: Actually there are some inshore, so I'm saying that the percentages are based on that focused area. You can see the amount –

MR. CRAMER: That yellow area there is the 60 to 100?

MR. PUGLIESE: That's the 60 to 100, the full bathymetry, yes.

MR. CRAMER: Okay, and do you have that same type of chart for this 70 to 90?

MR. PUGLIESE: No.

MR. REED: The data that you presented, Roger, if I wrote it down correctly, for the 60 to 100 – and, of course, we realize that the percent is off because of the total, but regardless the 60 to 100, it was 0.8 percent dots, 2,454 dots. If you bring it in to 60 to 90 so you're cutting the outer part, which is very narrow, it dropped from 0.8 percent to 0.7. There is very little change on the outer border. When you cut the inner border from 60 to 70 was the big change. That was the majority of the change in the dots. If you went from 60 to 100 of 0.8; 70 to 100 was 0.3. That was the majority of the cutting out.

MR. CRAMER: Just looking at it, though, it just seemed to me like where those scattered random dots, but you can tell where they were putting the fishing pressure and that fishing pressure was outside of the 70 meter. It was between the 70 and 90. To me it didn't make a

difference. I supported the 70/90; and after seeing the chart I can support the 60 to 100, because it doesn't look to me like – it looks like the fishing pressure is inside that 70 to 90, anyways. I guess it's unanimous.

MR. BLAIR: Okay, that's what I was going to ask. Okay, thank you; not a problem.

MS. STILES: No, there were a lot of charts that went by. I lost track of them, too.

MR. PUGLIESE: It's important to identify, because it is identifying it as 1 percent, but it may be three times that just because it's encompassing all of this, plus it's encompassing the royal red components too. It's going to be some variation, but still the bottom line, the real number ends up being it's 2,000 out of whatever the total is, but it's going to be still a small portion of these areas.

Now I think the key was that the biggest variation is, as has been said, when you move between 60 and 70, because a lot of that – there is some historic that has worked within that one area. The outside is a hard line, that 100 to 90 isn't nearly as – they just can't get up to that wall in that section, generally. The biggest variation is as you shift between the 60 meter to 70 meter in all these different cases.

MR. BLAIR: Okay, kind of just a point of order here; it is presently quarter after eleven. I know that there are people that probably have to be out of here to catch planes as close to noon as possible. We'd like to go on now if we can to the next and try to work through that as well. Also, I just want to make a comment that I very much thank Roger and Anna for compiling this information and getting it together for us for our consideration. It is definitely significant in helping us work through the process.

MR. PUGLIESE: I guess that brings us to the western bound and what we had identified was the fishery impact relative to the area. The habitat, as John indicated, the multibeam that has been conducted in the center of that area has shown, which is pretty obvious from the bathymetry how much of the area is high-relief areas, and it's really shown up by the information we had on the VMS. Because, as indicated before it is like less than 200 points when you get down to fishing operation occurring here, and this was actually endorsed by the Shrimp Advisory Panels, both the deepwater and coral, because they don't fish in there.

MS. MARTIN: Right, so this is the one alternative specifically dealing with the extension of the western boundary between the two satellite sites. The only one in there, and it was the recommendation from John's proposal endorsed by the Coral AP, and the Shrimp Advisory Panel's recommendation; they seemed in agreement with this alternative with the council future consideration for an access area. That's what they had to say about – and this is Alternative 3 under Action 1 in the document.

MR. BLAIR: That's depicted by which figure?

MS. MARTIN: In the Decision Document for CE-BA 3 that's Figure 3.

MR. BLAIR: Can I have a motion please?

MR. NEDIMYER: **I make the motion that we've been talking about. I don't know the number on it; Figure 3 is on the western extension, that we accept that as the expansion of that Habitat Area of Particular Concern for coral.**

DR. VAN DOLAH: I second that.

MR. BLAIR: Do we need any discussion? All in favor please raise your hand. It is unanimous, thank you.

MR. PUGLIESE: Okay, that brings us to the extension of the Stetson-Miami Terrace CHAPC. As you remember, the original proposal extended it covering the existing habitat in the southern bound. An alternative was developed in response to scoping to try to look at where the fishing operation was and came up with this area as identified that captured the map habitat and then tried to at least address where the baseline information on the royal red fishing operations occurred.

Subsequent to that, there has been some additional information provided from our AP members. Steve Ross and Sandra Brooke, which is represented, I think you may have seen this yesterday. Again, this was just an attempt to try to build from the existing information with the VMS information without some of this type of detail. I think what was on the table was the discussion about the significance of this hard structure habitat, which is fairly obvious in this, and the importance on possible modification of this.

MS. MARTIN: Here we're looking at Action 2 in the document, and it builds off of what Steve presented yesterday to incorporate that shallow water lophelia ecosystem that they are further researching as a permanent upwelling site. Alternative 2 is the Coral Advisory Panel's recommendation from your last meeting.

What Roger is showcasing here is this was a chart developed after public scoping input, and again modifying the Coral Advisory Panel recommendation to incorporate the area of mapped habitat that we do have from one of the Deep Sea Coral Research and Technology Program trips that was presented last fall, while excluding a majority of the VMS points in this area.

Again, the pink sliver there off to the – it's a little hard to depict the colors in the chart there, but what Roger is showing with the mouse is the existing Shrimp Fishery Access Area 1, which was included in the original designation of the Stetson-Miami Terrace back in CE-BA 1. The modification also takes into account that access area.

DR. VAN DOLAH: Question for Roger; are these VMS points here on this particular graphic a distillation of the points because they are very uniform?

MR. PUGLIESE: Yes, this is actually – it's amazing how they just fish in a line, straight up and down. No, this is actually the original VMS that we worked with when we did the royal red action and creation of the HAPCs earlier on, where they came in. This actually did show fishing.

What this was showing was any occurrence where they were between two and four, not fishing through the entire data base that was in hand at that point. This was actually provided as fishing and that's how it coincidentally matches right up with the shrimp fishery access area.

DR. ROSS: Anna, could you bring the other chart back up that shows the multibeam? Yesterday I guess we indicated or at least Sandra and I indicated – me speaking for her – that it was unclear why there was an extension to the north from our original suggestion, because that appears to be flat, sandy bottom as far as we know.

The exclusion in the south it would seem from this multibeam to eliminate some hard bottom area from protection. It also squeezes the area where we know these shallow lophelia bioherms, which could be fairly important into a pretty narrow band without much buffer; so our recommendation would have been that we're neutral on the northern extension.

Protecting more is better, even if there is nothing there, but on the south end we would prefer to have that boundary brought back down. When we drew the southern boundary, we did realize there was some area there that also looks like fairly smooth flat bottom, and we could raise that a small amount if that's a compromise of some sort.

MR. REED: Steve or Anna, can you put the cursor about where the coral mounds were.

MR. PUGLIESE: The mapped area is right in this area right here.

MR. REED: At least from the sidescan here, the rigosity of that map of where we have known coral mound, it looks very similar to the area that was cut out there. It's certainly hard bottom habitat; but whether its coral or not, I don't know, but it's certainly hard bottom.

DR. ROSS: Yes, and from the habitat maps and photos we showed yesterday, pretty much everywhere there was a rock in this area, there was a coldwater community of different kinds of gorgonians and black corals and hard corals, mostly lophelia. They were scattered all through on these rocks and sometimes in large colonies. Then the three bioherms we found, and John explored as well, are down here. This looks like even higher profile, and probably grades into this high profile area offshore. That was considerable rocky habitat there.

MR. BLAIR: It seems though the desire here is to move, if you will, that southeastern line that is now at an angle to be pretty much horizontal below a level that encompasses the high-relief areas that are presently excluded. It would pretty much be going straight – that's what I was looking for, to see if there might be a latitude line.

DR. ROSS: Somewhere in here.

MR. BLAIR: Go back to the one showing the fisheries, please.

MR. CRAMER: Just a quick question; can you move that diagonal line down; just keep that same diagonal line, because it looks like they're fishing just below – like if you went straight across and made it a rectangular thing.

MR. BLAIR: No, if you take a look at where the bottom of that is, the bottom of that relief area is south of the joining aspect of that angular line.

MR. CRAMER: I was saying that diagonal line; you couldn't move that down?

MR. BLAIR: I see what you're saying.

MR. CRAMER: That way they can still fish that sand or flat bottom there. I remember yesterday from looking at it, they were fishing in there pretty good and just move that diagonal line and get that little tail there at the bottom out of there, and just get the high-relief stuff.

DR. ROSS: Yes, that's possible. Roger, did you have any percentages on this area, too?

MR. PUGLIESE: No, I don't.

DR. ROSS: What does this represent in terms of the whole fishery?

MR. PUGLIESE: I do not have those numbers; it's the tail end of that entire fishery.

DR. ROSS: There are several ways to do that as long as we get back to protecting that hard bottom as potential corals, either move in this diagonal line down to here or just coming straight across. You'd lose a little bit, but you'd gain back this territory, which I think we'd be okay with.

MR. BLAIR: That's fine; I think we're trying to pull up a graphic that we can modify to be able to adjust those lines. We talked a little bit about this when this was presented yesterday. From the relief that I see in the northeastern portion of the mapped area to the south, it would seem to imply that you are going to have some continuation of this up here.

I understand it's nice to have a bigger area, but I think it's also incumbent on us to not overly exert the areas in regions where we don't have need to. I think that's part of what we can do to help maintain our, lack of a better word, credibility in when we ask for specific things they are for habitat protection and not simply because somebody wants to give it to us.

DR. ROSS: Steve, you were saying instead of going up to here, just coming to there, because there is some indication that this ledge continues.

MR. BLAIR: There is something there but we don't know how far up. At least through the unknown, that's still a conservative measure we've used in the past for trying to encompass areas where information would assume that there is something there until we get better information.

DR. ROSS: This is certainly more information than we've had for a lot of areas we protected all through here. We just wanted to be conservative when we originally cut it off here, but I think we're certainly agreeable that it would come up here. Now one thing that we hope will happen by the end of the summer is this will have complete multibeam coverage for this whole area,

which may allow for some additional adjustments before it's too late, before it goes to some kind of final ruling, but we won't know about that for a while.

MS. MARTIN: Steve, I wanted to just point out, your concern with the chart and the CE-BA 3 document for that northern area and where that came from; it's from the coordinates you provided so that's your data. I know that you and Sandra developed a chart that is appearing different than the one that we have put together, but we need to make sure we're comparing apples to apples. It's your data.

MR. REED: Steve, why don't we go through now, and based on your knowledge of that habitat there, give a northern line and a southern line. How much buffer do we need south of that reef, quarter mile, half mile, whatever?

MR. BLAIR: I think we're bringing up a graphic to try to do that at this time.

MS. KARAZSIA: Steve, it looks like there is some roughness there on the northeast corner of that box that was up there; is that potential hard bottom coral habitat?

DR. ROSS: Let's get the map back up there. I think you're talking about the same ledge that Steve was mentioning, trying to make sure we encompass that.

MR. BLAIR: I think as a matter of fact it was in the northern box, right? It looks as though on the eastern side of the northern reach of that with the northern mapped area, there is rigosity on that area. No, further north.

DR. ROSS: Oh yes, yes, that looks very rough and it grades into – all of this area, this is a fairly good-sized ledge that comes along here, but behind that ledge is all hard bottom with different size boulders and even some bioherm formation. This seems to continue that inshore.

MR. BLAIR: We already understand that utilization of the 400 meter contour isn't inclusive of 100 percent of the habitat, but that is the means that we have for collecting the greatest majority of doing it. My question at this point would be to include that considering the additional area where there is no indication of habitat in it; is it appropriate to require modification at that point?

MR. PUGLIESE: I was going to go directly to it and then we can work from there.

DR. ROSS: Well, there is one slide that I had yesterday that had the two pictures side by side.

DR. PUGLIESE: But you just need to get what you want now. I guess we can do it directly from what –

DR. ROSS: Regardless of what the coordinates were, Anna, the box that I showed was what we intended. We may have sent in the wrong coordinates for those northwest corners, but the box as drawn was what we originally proposed.

MS. MARTIN: Well, we can make sure we're on the same page there.

DR. ROSS: While we're waiting on that – I was looking at a closer view of that area – somebody mentioned the 30 degree line potentially being a good cutoff, and that looks a little bit tight.

MR. BLAIR: That's fine; I was looking at kind of a good squared type of thing, but it sounds like we may be looking to modify a diagonal to do that. I just thought that it might provide a straight line border.

MS. STILES: Should we give Roger some time and take care of the Chair and Vice-Chair or something and have him come back in 20 minutes or something?

DR. ROSS: Actually further to that; I'm looking at an even closer blowup, 30 degrees may work. I can't tell exactly how much distance there is, but it is well south of those three bioherms and it appears to be fairly smooth bottom from there down.

MR. BLAIR: In looking at this – we'll look at it when it's blown up – I don't think that a diagonal would necessarily save any of those points in the fishing area, so it might be more simple –

DR. ROSS: A few but not many.

MR. BLAIR: It might be easiest just to do that.

MR. REED: Do you have that in ArcGIS, what you're looking at?

DR. ROSS: It was; it's in PowerPoint.

DR. PUGLIESE: We're in it right now, so we can create something; at least get the bounds of this. That's the mapped area. Let me increase the boundary here.

MS. MARTIN: Just to make sure you are kind of understanding of that access area, if there is a recommendation from the panel to modify that southern boundary of this western extension, you would also be requesting that council consider modifying that access area; so that kind of goes along with your modification.

DR. ROSS: Where is it; can you point to the access area?

MR. PUGLIESE: The pink area is the access.

MR. BLAIR: The pink area on the inside, so in a way if we were to take – is that 30?

MR. PUGLIESE: This is 30 right here, I'm at right here. Are you talking about diagonal up or are you talking about directly across?

MR. BLAIR: Well, if we want to take and we want to minimize the aspect of having to modify that, then the diagonal – I guess the hard part about it would be to understand actual location. We need the actual location of that southern terminus of the obvious hard ground.

DR. ROSS: You went over to the eastern side and brought that dot down to 30 degrees 3 minutes, right up here.

MR. PUGLIESE: And actually a little lower than that. I'm starting with 30 on that side at the base of the habitat map and then diagonal is going – this is 32/8 – what did you recommend?

DR. ROSS: Well, we said 30 degrees 3 minutes, so you're basically there.

MR. PUGLIESE: It's pretty much right here.

DR. ROSS: Right.

AP MEMBER: Not much of a diagonal; you're making it complicated.

MR. PUGLIESE: Well, let's just get something to start from and then we can modify based on.

DR. ROSS: We're picking at this the way we didn't pick at Oculina. We're trying to save a few VMS dots.

MR. BLAIR: I'm not sure that we're trying to – I'd like to see right now, as you say, what's the protective line; and if we can adjust the border to do that, that is good, but we need to be again protective of what we know we have. If it means to the eastern side of that area should be placed at 30 degrees, 30 minutes, is that what I understood?

DR. ROSS: No, 3 minutes.

MR. BLAIR: 30 degrees, 3 minutes.

MR. PUGLIESE: That's the eastern; that is what that point is right now where it's diagonal up. I can enlarge this. How far north; that's the real question first. We can start with something and then adjust from there. Just give me an idea how far north we need to go.

DR. ROSS: You would go straight up.

MR. PUGLIESE: No, but you wanted to limit the northern extent of this proposal.

MR. BLAIR: It would essentially be the bottom latitude of the northern mapped VMS area.

AP MEMBER: Roger, do you have those two gray multibeam maps, those two figures, because putting on those would make it just a lot easier.

MR. PUGLIESE: I've got them on here; let me start with this and then I can just go from there.

MR. BLAIR: Steve, do you have a latitude that we could use from those multibeam that shows the bottom of the northern portion, graphic if not in GIS? Continue doing that but if we can be descriptive in that to the extent that we'll get the absolute coordinates from the graphic information that we've got, we know where we want it. It would be on the southern border of the northern map area, and it would be along a latitudinal limit.

DR. ROSS: Or if you want, I'll just go back and redraw it and send it in.

MR. BLAIR: I think that's fine. I think what we want to do for today's purposes is have it defined in a manner that we agree that's where the limit is going to be. The coordinates will be sent to Roger and Anna for final –

MR. PUGLIESE: We can adjust. What I've got right now is probably a fairly close representation of what we're talking about. You're talking about 37 – the northern bound.

MR. BLAIR: Okay so we're modifying the northern boundary down to the lower southern boundary of the northern mapped area in this region. We're modifying the southeastern portion to come down to a point that will encompass the identified mapped hard grounds in those areas. Coordinates for explicit points will be finalized based on that description.

MS. KARAZSIA: Anna, did you say that would require modification of the allowable shrimp?

MS. MARTIN: Yes.

MS. KARAZSIA: I'm not seeing this.

MS. MARTIN: Just so everyone's clear, this recommendation would also request the council to consider modifying that access area that was designated in CE-BA 1. It's the pink box. Our Law Enforcement Committee and Advisory Panel has already weighed in on this; you know, the Alternative 3 with that fingerling structure of a southern boundary and have basically said – the original Coral AP recommendation was Alternative 2 in the document.

They have already commented and said that access to that access area, a little fingerling structure in the middle of two closed areas would not work. The council would have to consider modifying the access area with the Coral AP's recommendation, just so everybody is clear.

MR. PUGLIESE: What you would eventually do is you would limit the northern bound of the shrimp fishery access area to what was that intersection point, which would be 30 degrees 3 minutes would be the recommendation.

MR. REED: How is this access different? From the discussion we had with the Oculina as long as they're up to speed and have the gear on board, I don't understand it.

MR. PUGLIESE: What this area did is where they were fishing on the outside of the CHAPC, there was an area that was almost an allowance area of a mile – in this area I think it is a mile

where they could float over into that area. They are not necessarily fishing all the time, but that's what that did.

If you're not allowing fishing to the west, there is no reason to have any type of an access in the middle of the HAPC. All that was trying to do was deal with the fishing operations if they happened to be floating over that line or gear went over the line during certain current situations. If you set a new line on there, then that doesn't apply at all. That would not be allowed to the north.

MR. CRAMER: Just a quick question; I don't understand why the diagonal line is so far down. Couldn't it be moved up on the east end and then most of that transit line would still be bordered by areas that they could shrimp.

MS. MARTIN: Well, there is that area of mapped habitat.

MR. BLAIR: That area is to bound that southern extension of the known habitat in that area. That's not an over – if you take a look at where that is on there, it's further down than – it's not like drawing the horizontal right where that line goes to the north.

MR. CRAMER: It just looked when you guys were moving it down that it –

MR. BLAIR: My first thought was hoping that it would just come straight across there, but it doesn't include that area down there. It is based on the presence of that existing hard ground, the limits of that existing hard ground. There may be some wording associated with this that we need to work with.

MR. PUGLIESE: What you have now is the representation capturing the known hard bottom, structural coral habitat to the east of the mapped habitat, attempting to try to move it somewhat to the north to allow the fishing up there; and then the northern bound of the original intent, which was I think 30 degrees, 37 minutes, approximately, which we can adjust.

MR. REED: **I make a motion to accept that boundary with the possibility of slight modifications as you draw it up.**

MS. STILES: Second.

MR. BLAIR: This is really a modification of our prior recommendation to adjust the borders in consideration of presence of hard ground and other information to that as depicted by the graphic as Roger will label it. We will, with Steve Ross's assistance, provide explicit coordinates to that. Do we have to include anything regarding the access area, that the council consider modifying that or is that an automatic?

MS. MARTIN: I think it will just be kind of assumed that is something the council will have to discuss; modifications to the access area that have come along now with the Coral AP's recommendation. I don't think you specifically need to discuss it just so long as I guess staff has

informed you all of the existence of that access area and what your recommendation would entail for the council.

MR. BLAIR: Okay, I have a motion and a second. If there are not further discussion? Can I have a show of hands in favor? Any opposed? **Then it passes**. There is one more that we'll work with.

AP MEMBER: Did we need to have a vote on that Alternative 4 about transiting, whether or not transiting would be allowed? We never voted on that.

MS. MARTIN: Correct me if you think I'm wrong, it may be out of the scope of this advisory panel to comment on that specific measure. It is something the Law Enforcement AP and the Law Enforcement Committee has already weighed in on and also the Shrimp APs as far as specific provisions they would like to see in that, but you're welcome to do so.

MR. BLAIR: It sounds like what it would be is it would be a motion in support of or a motion against or we can stay silent on it. In this case it seems to be more a council/law enforcement decision process for this.

AP MEMBER: Okay, personally I'd like to make a motion in support of allowing transit through these areas with appropriate safeguards for fishing.

MR. BLAIR: Again, they exist. They do exist; it's just they are asking for explicit considerations, and that's again where I think that goes with the fishery to the law enforcement and the council to determine the appropriateness of those.

AP MEMBER: Then I absolutely withdraw my motion.

MS. MARTIN: Okay, lastly, for the HAPC expansion actions in CE-BA 3, Action 3 is consideration of expanding Cape Lookout Coral HAPC, and this is based on research that was presented by Steve and Sandra during your last meeting in September. Alternative 2 is the recommendation that this panel endorsed. That's depicted in Figure 6. This adds approximately 8 square miles to the northern boundary, and, Steve, I don't know if you want to talk a little bit more. This is based on your observations of lophelia habitat in this area north of the boundary.

DR. ROSS: Yes, we had some reason to suspect there were some mounds up there and did some additional multibeam mapping and found a series of small 10 to 15 meter lophelia mounds in that area. It's hard to tell whether those are developing or eroding, but there appears to be additional habitat through that portion.

We were unable to do any further mapping. There could be more habitats. We have now, with the cruise we took with the Dutch, mapped all of this offshore area and a number of places to the south and have not found any additional coral habitat outside the HAPC except for this proposed add on.

MS. MARTIN: Just to be clear, there has been no mapping further east of this kind of fingerling structure. It's hard to see the colors there, but it's just a little box. There was a question by one of our council members during the Law Enforcement Committee about potentially expanding the width of the recommendation to encompass the original boundary. It's my understanding there is no mapping.

DR. ROSS: Correct; there is no mapping further east. Getting this mapped was an add-on to a Foster transit, and so we didn't have any additional time to map further. But what happens in this area is the depth contours start to squeezes in very tightly here; and so depth drops off quickly.

In fact what we found at the upper end of this was a landslide that this area is so steep it cuts a gully that rushes down to the lower slope. I suspect there is not much more out here. It starts to get very deep through the eastern edge of this as you go north. I don't think that's much of an issue. Certainly, expanding that a bit would not hurt, but there is not any evidence that there is anything over there.

MR. REED: Steve's, what the southwest width of the HAPC there now?

DR. ROSS: The whole HAPC?

MR. REED: Yes, the width there about; five miles, what is that?

DR. ROSS: It's about eight miles. I think there's a scale at the bottom of this figure, actually.

MR. REED: What's the outer depth contour, if you know?

DR. ROSS: Around 600 meters. I'm not sure which this contour is, but if you go north you can see it cuts in across this area sharply, but it drops off quickly. There's the scale; it's six or seven miles wide. But we have now mapped an area that goes down here and then fairly far offshore in that area that is deep and there is no indication of coral mounds.

MS. STILES: I had a question for Steve. It sounded like you were describing the northern end of this as a more diagonal wedge-shape; that a little bit of the existing HAPC in that corner might not be really coral mounds, and that there might be some in the unmapped area that are coral mounds?

DR. ROSS: I'm not sure I'm following you.

MS. STILES: I'm sorry, I didn't explain myself well. It sounds like you were saying that the coral mounds follow the depth contour, so there are probably a few that are outside the boundary and a few mud areas in that right-hand corner.

MR. BLAIR: We're bringing up a graphic I think will help it.

MR. PUGLIESE: It's going to get exactly – it's the imagery that shows exactly what you're talking about, where the mound area actually slopes to the west.

DR. ROSS: Yes, it drops off rapidly. From somewhere in here you can see this contour comes across; somewhere in here it starts to drop off rapidly and increases as you go north, dropping off even – the contours get squeezed all the way to Cape Hatteras, starting in this area. If there is any additional coral habit from here north, it is probably over in this area.

We haven't mapped that, not down in this area, because that starts to get deep and as far as we know its soft bottom and steep. One of the things we pointed out earlier, just as an aside, is that the habitat suitability modeling that the folks are publishing on indicates that this whole area from here to Cape Hatteras is suitable deepwater coral habitat, and that's not true.

The model predicts that because of the squeezed bathymetry, which is what the model is using as a predictor. The models are not telling us what we need to know about coral habitat. That's the multibeam, except these are the mounds that we've worked on. There is a small one out here. I'm not sure what the black area is. Maybe that's what we mapped in the Pelagia.

You can't really see the mounds; they are on this sort of edge here. Yes, the black is Pelagia multibeam. I see the ledge in that, but I can't see the coral there unless you can zoom in on that, Roger. They are fairly small mounds, but it is worth protecting because we don't know whether they're growing or eroding. We haven't been able to get an ROV down there. We did have a collection of coral from the trawl.

MR. REED: On the extension where you have the yellow polygon, what is that blue line that is cutting in?

MR. BLAIR: It's simply a directional arrow. I think it's pointing to the original HAPC.

DR. ROSS: No, it's not. That's the museum record that we were using to guide the multibeam mapping up there. That was a trawl station from the RV Eastward and that specimen is in the Smithsonian. It's a fragment of dead coral but we thought it was worth trying to get mapping to the north, and we used that and actually did see mounds based on that.

MR. REED: Your eastern border of the extension certainly covers all the apparent hard bottom.

DR. ROSS: Yes, and see how quickly this curves in here and drops off. It gets very blue, even more than out here. It's quickly getting deep up in this area as you go north. The landslide was in this corner.

MR. BLAIR: We're trying to get a little zoomed in picture to kind of help you get a better sense of that area that's being requested.

DR. ROSS: Anyway, this is pretty straightforward; I'd think there hasn't been any contention to do some fishing up here.

MR. BLAIR: **The motion to be made is to recommend or accept the recommendation for the additional region to the proposed CHAPC.**

MR. REED: I make a motion to accept it as drawn.

DR. VAN DOLAH: I'll second that.

MR. BLAIR: If there is no further discussion, a show of hands please in favor**. It is unanimous**, thank you. Thank you very much; that was a lot in a little bit of time. We are pushing our twelve o'clock limit. There is one other item that we would like to discuss, nomination and election of a Vice-Chair. The way that kind of the chairmanship and vice-chair system has worked – and I'm going to defer to Roger and Anna for any additional information they wish to provide – it is a position where the Vice-Chair usually will come into position as the Chair.

At this time for personal reasons and other reasons, I am looking to move out of the chairmanship. The existing vice-chair unfortunately is in a position where it's not feasible for him to take on the chairmanship, so we are looking for nominations and election of a vice-chair that will come into the chairmanship on a mutually discerned time scale that will not exceed one year.

MR. REED: I make a motion you can't leave.

MS. STILES: I second that motion.

MR. BLAIR: The Chair denies that motion. I think we had this in mind before. It's been for people to think about and I'd like to open the floor for nominations.

MS. STILE: Maybe you could talk about the commitments that you have as chair.

MR. BLAIR: I think the greatest majority of the commitment is here at the meeting. I fully 100 percent affirm the fact that council staff is tremendous in preparing materials and issues to be presented to the chairmanship and to the AP. Obviously, we all bring our own input, ideas and thoughts into what directions we should take, but much of the framework is established for us through that process.

I see that there is obviously some front-end work in working with the council relative to establishing agenda items that may not otherwise already be established. Other than that, the greatest majority of the commitment is in the meetings themselves and preparation for that; two, three week preparations before that.

MS. MARTIN: I'll just add on from the council staff perspective; I can't help but comment on the joint nature of the shifting of gears, but I won't take it personally. I do and I know Roger does as well, we do seek guidance from the Chair and Vice-Chair for issues, information, and agenda that needs to come before the Coral AP.

I do find that I reach out to them pretty consistently; not specifically tied to the AP meeting, but throughout the year for various things, information primarily. I include them with information about other APs or council decisions. Issues the council is facing, I feel like the Coral AP Chair and Vice-Chair should be in the loop with. I see them as kind of an informational source that we kind of share back and forth. I do reach out to them a good bit on my end.

MR. NEDIMYER: What kind of restrictions are there? I know in the Sanctuary Advisory Council we have government people that sit there but they're not allowed to vote on different things. We have NOAA people; we have state of Florida employees; is everybody in the room open?

MS. MARTIN: We don't have restrictions.

DR. VAN DOLAH: I would like to tentatively identify Sandra Brooke as an appropriate Vice-Chair. She is obviously not here to defend herself; that will teach her to miss a meeting. She is quite knowledgeable on the coral resources.

MR. BLAIR: We can bring that aspect to her. It would mean that we would not walk away with a decision today, because we would want to ask if she would like to be put into nomination. But it sounds as though we could probably handle that and still do it in short order through e-mail vote for the process. I would hope that there is at least one other nomination so that it's not all or nothing with Sandra. Are there other nominations for consideration?

MR. REED: When is the next meeting for us?

MS. MARTIN: I don't know that we've identified one in our activities schedule for this year, although that's not to say that we won't have one in the fall. I'm just not sure that we have that defined.

MR. REED: So if there's nothing immediate.

MR. BLAIR: You're saying if there is nothing for the person to do in the next year, you'll vote? If you remember back for those that have been on the panel, it's normally at the most two meetings a year, a spring and a fall meeting, and very commonly it's only been a single meeting. In the past we've actually had a couple of years without any meetings. The frequency is I don't think an overburdening process. Is there consideration of any other nominations, Ken?

MR. NEDIMYER: She's going to kill me but I'm going to nominate Jocelyn.

MS. STILES: I was going to do that.

MR. NEDIMYER: I've known her for many years and she's extremely knowledgeable, always does her homework and she has a really good handle on the federal process, which is really important to this group, I think. I'd like to nominate Jocelyn.

MR. BLAIR: Would Jocelyn care to accept the nomination?

MS. KARAZSIA: Can we talk with Sandra and maybe between the two of us decide and see if she's interested.

MR. BLAIR: Well we get to vote; sorry, it's not a selective process. You can easily speak to her if you want, but would you consider the?

MS. KARAZSIA: Sure, I'll consider it.

MR. BLAIR: Additional nomination considerations? Then what we'll do is we will contact Sandra and discuss it with her and we'll follow up via e-mail. I'll determine a vote as necessary.

DR. VAN DOLAH: You're trying to wrap up the meeting, I presume.
MR. BLAIR: Yes, so the idea is at this point if there are no others we'll close the nominations. We have completed the agenda; and if there are any other items to be brought forward.

DR. VAN DOLAH: Yes, and I'm not suggesting that we discuss it today, but we need to figure out how we would want to proceed forward with the summary of offshore survey protocols for facility sighting that we talked about coming back to. All I want to do is at least get on the record that it seems like a tiered approach is worth considering; with the insertion perhaps between Items 2 and 3 in that document, detailed – or maybe as part of 3 detailed sub-bottom surveys, because if there is an adequate sediment lens identified and an area of interest, and there is no evidence from multibeam or sidescan of any bottom relief in the vicinity, I'm not sure a lot of these other steps are necessary and they are very expensive.

MR. BLAIR: Bob, can I ask you to kind of throw that to me in an e-mail, and what I will try to work to do is work with John and possibly get a strawman that can be put out through e-mail for consideration and brought back at our next meeting for consideration and approval. Is there any other business to be brought forward? If not, I thank you very, very much for being here, for your attention and I think we got a lot accomplished. We are adjourned.

(Whereupon, the meeting was adjourned at 12:10 o'clock p.m., May 10, 2012.)

Certified By: Stephen Blair Date: 5/7/13

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