SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT ADVISORY PANEL MEETING

Charleston Marriott Hotel
Charleston, South Carolina

November 14-15, 2012

Summary Minutes

Habitat AP:

Pace Wilber, Chair
Dr. Christopher Elkins
Terry Pratt
Carter Watterson
Mark Caldwell
Jenkins Mikell
Patrick Geer
Alice Lawrence
Dr. Amber Whittle
Todd Kellison
John Ellis
Bill Kelly
Priscilla Wendt
Susan Hilfer
Bill Parker
Thomas Jones
Mike Street

Council Members:

David Cupka
Tom Burgess
Charlie Phillips
Dr. Wilson Laney
Doug Haymans

Council Staff:

Gregg Waugh
Julie O'Dell
Anna Martin

Observers/Participants:

Mike Merrifield
Emily Greene
Tina Udouj
Dr. John Reed
Cindy Cooksey

Additional Attendees Attached

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council convened in the Charleston Marriott Hotel, Charleston, South Carolina, Wednesday morning, November 14, 2012, and was called to order at 8:30 o'clock a.m. by Chairman Pace Wilbur.

MR. WILBUR: I'd like to welcome everyone to the November 2012 meeting of the Habitat and Environmental Protection Advisory Panel Meeting. We have a somewhat different agenda than what we've seen in the past. Hopefully, it will work well for the advisory panel and work well in our service to the council.

If there are any questions people have throughout the day, feel free to pipe in. The first items on the agenda are the fairly standards ones, introductions, review and approval of the agenda and review and approval of the minutes from the previous meeting. After that we will then go into some topic-related discussions; the first set of topics focusing on the proposed expansion of the boundaries for the Oculina Bank HAPC, the Miami-Stetson HAPC.

These are things that the council has asked this advisory panel to comment on. As part of our service to the council, we will do our best to provide them with comments that are helpful to them in their deliberations. Then we will move on to some items to talk about; the actual internal operations of this advisory panel and what our goals are for the coming year or two, and try to lay out some sort of a schedule where we can rationally accomplish all those various tasks.

Now before we get into the nitty-gritty of the day, I'd like to go around and have everyone do the traditional say who you are, who you work for. We'll see if anyone has anything in common with someone that they really didn't quite expect based on the movies. We'll start with Todd Kellison.

DR. KELLISON: Okay, Todd Kellison, NOAA Fisheries, Beaufort, North Carolina.

DR. ELKINS: Chris Elkins, North Carolina recreational seat.

MR. ELLIS: I'm John Ellis, U.S. Fish and Wildlife Service in Raleigh, North Carolina.

MR. MERRIFIELD: Mike Merrifield with Cape Canaveral Shrimp Company in Cape Canaveral, Florida, representing the Deepwater Shrimp AP.

MS. LAWRENCE: I'm Alice Lawrence with U.S. Fish and Wildlife Service out of Athens, Georgia.

MR. PARKER: Captain Bill Parker, Runaway Fishing Charters, Hilton Head Island, South Carolina.

MS. GREEN: Emily Greene, representing the Atlantic States Marine Fisheries Commission.

MR. MIKELL: I'm Jenks Mikell; I live on Edisto Island, which is about 40 miles south of here.

MS. WENDT: Priscilla Wendt, South Carolina Department of Natural Resources.

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

DR. REED: I'm John Reed from Harbor Branch Oceanographic Institution.

MR. WILBUR: All right, I'm Pace Wilbur from NOAA Fisheries based here in Charleston, South Carolina.

MR. WAUGH: Gregg Waugh, South Atlantic Council staff.

MS. MARTIN: I'm Anna Martin, council staff. I work with our Coral and Shrimp and Deepwater Shrimp Advisory Panels.

MR. KELLY: Bill Kelly with Florida Keys Commercial Fishermen's Association representing basically the spiny lobster, stone crab and finfish industries in the Florida Keys. My first AP meeting and I'm looking forward to meeting all of you and a pleasure to be here.

MR. PRATT: Terry Pratt from North Carolina, commercial fisherman for more than 50 years, and I have served on more committees than I can count dealing with environmental matters.

MR. STREET: Mike Street, North Carolina. I'm here as a scientist; I'm retired from the North Carolina Division of Marine Fisheries.

MR. WATTERSON: I'm Carter Watterson with the Department of the Navy.

DR. WHITTLE: Amber Whittle with the Florida Fish and Wildlife Commission.

MR. JONES: Tom Jones; I'm an investment guy. I'm the recreational fisherman representative from Georgia on the Habitat Advisory Panel.

MR. GEER: I'm Pat Geer from Georgia DNR.

MR. WILBUR: All right, the next item on the agenda is the approval of the agenda for today and tomorrow. As I mentioned in my brief introductory comments, we're basically having a session focused on what I would call service to the council. The council has asked us to weigh in on various alternatives for the expansion of the Coral HAPCs. It is an important part of what an advisory panel does, and that is a big part of the agenda.

Then the next part is to begin to ferret out the kinds of activities that this advisory panel might want to focus on during the coming year. Now, if you look carefully at the agenda, what we had originally planned for this afternoon was a discussion of the various policy statements that the council has that are related to habitat. Many of those policy statements are fairly old and need some refurbishing. Many of those policy statements or maybe one or two of them might be antiquated and just need to be deleted.

There are probably some significant policy statements that we might want to develop that we don't really have one for yet. What actually I would propose to do, given Roger's difficulty in making the meeting because of his illness today, I would rather move that discussion to Thursday

morning and substitute for this afternoon the more wide open discussion on where the advisory panel wants to go during the coming year.

If there is no objection to at least us having the latitude to make that substitution, I would like to see that done for the agenda. Now I don't recall, one of the parliamentarians here, do we need to actually vote and approve on the agenda, or is that just sort of an announcement?

MR. WAUGH: You can just adopt it by consensus; just see if there are any objections to that change. If not, then it stands as adopted.

MR. WILBUR: Does anyone have any objections to that change?

MR. MIKELL: I've got a question. The things that we want to talk about, that we were going to talk about this afternoon that we are going to change to talk about tomorrow, why don't we go over those things and maybe strike out the ones that we need to strike out right now, so that we don't spend any time on them later.

MR. WILBUR: Okay, you want to identify – there are I think seven policy statements.

MR. MIKELL: Well, why don't you go through them one at a time right quick and say whether we should be discussing or shouldn't be discussing.

MR. WILBUR: Okay, can we do that in the afternoon as a kickoff? Okay, that works for me. With that little modification, is there any objection? Seeing none, we'll move on to the next item on the agenda which is the approval of the minutes from last November's advisory panel meeting. They are about 88 pages or so in length.

I'm sure most of you have got all kinds of notes and stuff scribbled in the margin. If there are any questions about those minutes, please let me know. **Otherwise, we'll need a motion from the floor to adopt the meeting minutes. Okay, Mr. Jones has made the motion; seconded by Mr. Geer. All in favor; any opposed? Seeing none, the meeting minutes from last November are adopted.**

One thing that I do want to make sure is on the record; we did have a Habitat Advisory Panel meeting via phone last May. Because of the nature of doing an advisory panel meeting by phone and other things, we do not have detailed meeting minutes from that. There was a report produced from that meeting by council staff and provided to the council during their June meeting.

While not particularly flagged as meeting minutes from that agenda or served up on the council's website in that respect, that is part of the zip drive that you guys received and it was part of your briefing materials. Okay, it is actually Attachment 11 in your briefing materials. If you have any comments on that, we would be glad to receive those informally after the meeting.

Okay, so moving on to the main part of the meeting at least for this morning, we are going to review the various alternatives that the advisory panels have been asked to comment on for expanding the Coral HAPCs. This is the part of the meeting that Roger was really supposed to lead so I am kind of looking at Gregg and Anna to step in.

MR. WAUGH: We will cover in a little more detail where we are exactly under Item 4, the status of Amendment 7. But just by way of introductory remarks, as you are all aware the council has a long and standing history of protecting habitat. We have put in significant regulations over the years to protect that habitat.

This is something the council has been very proud of, their leading role along with your help and input over the years. Last year you made some suggestions for some additional Coral HAPCs. The council scoped that and now we're looking at alternatives to go out to public hearings. We've got some alternatives that the council has already looked at and said, yes, take those out to scoping, and that has been done. We've got some alternatives that have surfaced since that time and those are in the Options Paper. We're looking to get your input on those.

The Deepwater Shrimp AP met with the Coral AP, and we will be covering that a little later as well. They had some suggestions for additional modifications that they talked about at that meeting and John is going to cover that in his presentation. They have put together an area based on the recommendations that came out of that joint meeting. What we are looking for here is after getting the presentations by John and Cynthia is I will give an update on where we are.

Anna will help with that as well, and we can answer any questions about exactly where we are in the process. But then what we hope to get out of this, as Pace mentioned, is just your recommendations in the form of motions, if you want to do it like that, on the various alternatives that are in here now and the new one that is being suggested. That is a brief introduction and we'll come back and give you a little more detail after the presentations, but we'll be glad to answer any questions if you have them at this stage.

Okay then what we'll have is John Reed, Harbor Branch Oceanographic Institute, will give a presentation on the mapping habitat characterization and species use of the Oculina and Coral Habitat Areas of Particular Concern. The information on your drive are Attachments 2 through 7.

DR. REED: My name is John Reed from Harbor Branch Oceanographic Institute. I'm also a member of the Coral AP and have been a member of that for about eight years or so. At our last meeting, which was a joint meeting of the Coral AP and the Deepwater Shrimp AP, one of the recommendations I believe by Pace or the Habitat Committee was to provide more information about the Oculina Reefs.

Certainly, I believe the Coral AP is fairly well acquainted with the Deepwater Oculina Reefs. I'm not sure the background of the Habitat AP as far as the knowledge of what has been done on these Deepwater Oculina Reefs since their discovery in the 1970s. Anyway, one of the papers that was this paper here is a brief summary of the state of knowledge of the Deepwater Oculina Reefs since their discovery.

One of the papers that were presented to you was a report that the Coral AP put together for the South Atlantic Fishery Council in 2006. Essentially this is a summary of that report. Basically this report and the report that is on your thumb drive is a review and summary of the state of knowledge regarding the deepwater reefs off of Florida since their discovery to the present.

That publication was actually up to 2006, and it lists in the appendix of that report; these are the different chapters of the report, so basically summarizes all the different work that has been done out there on the coral morphology, distribution, benthic communities, fish communities, artificial reef habitat that has been placed out there, coral growth and the invertebrates and fish that are associated with the coral as well as human impacts.

At the back of that report are the publications or list of the publications with some annotations of what they're all about, because certainly I can't go into all this nor will I try. I certainly want to acknowledge over the years funding – most of this funding has been directly from Harbor Branch Oceanographic Institute back in the seventies and early eighties; more recently since 2000 from NOAA OE, NOAA Fisheries and the South Atlantic Council.

One thing to keep in mind is the difference in these deepwater reefs or research on deepwater reefs and shallow water reefs, or shallow water habitat, habitat on the shelf, mid-shelf, inner-shelf that I believe the majority of you or at least the scientists on the AP are familiar with and deal with. Deepwater reefs, our state of knowledge of deepwater coral, the ecology of deepwater reefs, the trophic structure and so forth are decades behind shallow water reef research in part.

Because of the difficulty of mapping out there, our state of the maps available, a very small region has been mapped and certainly a much lower resolution than the maps we have for shallow water and mid-shelf reefs. Also, just a state of knowledge about even species; every time we go out or quite often when we go out we come up with new species that we find out there.

We are just really learning not only the Oculina reefs, but deepwater reefs worldwide. Overall over the years we've had dozens and dozens of collaborators working on these deepwater reefs, FSU, University of Miami, Nova, quite a few people from the Smithsonian Institution, as well as Harbor Branch.

The main thing to keep in mind is that these Deepwater Oculina Banks off of Florida are completely unique. There is no reef like it. There is no other Oculina Bank like that in the world. We are very fortunate to have these in our backyard, and it is important for us to be good stewards and to try to protect them.

Deepwater reefs in general are very slow growing and essentially irreplaceable. The reefs themselves are over thousands of years old. They provide essential habitat for gag, scamp grouper, and many other species, and provide biodiversity, new species that we've found out there as well as species being used for biomedical research.

We have seen and do see potential impacts on all deepwater reefs as well as shallow water reefs, but deepwater Oculina and lophelia reefs from bottom fisheries that would directly impact the coral habitat, offshore pipelines and cables as well as potential for energy projects. I just wanted to give you this definition; what is a deep sea coral ecosystem?

This is from NOAA from their Deep Sea Coral Report. Basically depths of 50 meters and greater consisting of structure-forming species such as coral sponges provide a habitat for a diverse community of invertebrates and fish as well as essential fish habitat. Deepwater coral not only includes hard coral, but also gorgonians, black corals and hydrocorals.

Deepwater coral habitat includes in addition to the coral mounds also associated hard-bottom habitat, rock pavement, ledges as well as deep island slopes in the case of the Bahamas and the Caribbean. Strictly about the Oculina reefs, we known in 1984 a small portion of the known Oculina habitat was designated as a HAPC.

This is the first marine protected area in the world to protect the deepwater coral habitat. Since then nations around the world are discovering the importance of their deepwater reefs and are moving legislation to protect them. Then in 2000 the Oculina HAPC was expanded up to Cape Canaveral. Basically for the high-relief features, the large mounds, is a mound of coral, coral rubble, some sort of underlying rock structure, but on top of the mound we find living coral, coral rubble. This is a view of the side of a healthy living mound of Oculina habitat.

One thing to keep in mind, we know quite well where the high-relief mounds are from basically old bathymetry charts, as well as new bathymetry, These mounds are up to 25 meters in relief, so 60 to 75 feet. Most of the big high-relief mounds are in the region of 70 to 100 meters, but Oculina colonies grow off the mounds also in the flat regions and the hard-bottom regions.

Oculina varicosa grows at depths of three meters out to 152 meters. It is also important to keep in mind that low-relief pavement, low-relief ledges that do not show up on any of our charts or even our new multibeam provide a habitat for Oculina colonies, sponges, black corals, gorgonians and fish.

This is actually the largest portion of the Oculina HAPC in addition to the high-relief mounds. A single colony of Oculina like 10-inch diameter was dissected and found to provide habitat to 2,000 individual animals, including shrimp, crabs, snails, worms and juvenile fish. Physical environment; it's a tough environment to work in.

We've tried tech diving; that didn't work very well. Our Johnson Sea Link Submersible provided most of the research, and unfortunately that has been laid up and no longer available. ROVs are hard to work out there, because sometimes you've got one to two knot currents, as Mike well knows. The currents come and go. You don't know what the bottom current is going to be. You can have a northerly north surface current and a southerly bottom current. In a matter of 24 hours the bottom temperature can drop five to ten degrees centigrade.

It is a very rugged, difficult environment. Deepwater coral and Oculina grows very slowly, about a half inch a year, 16 millimeters a year, from group studies we did. We also have done studies on the reproduction of the coral. The coral has male and female colonies and they produce gametes and plankton and larvae that are in the water column up to a month or longer.

We know the Oculina occurs also inshore and even in the inlets. We think that these larvae move back and forth on the shelf with upwelling and currents and counter currents coming off the Gulf Stream. We know also there is a number of species that live in the lagoon, such as the Indian River Lagoon along the coast of Florida, that are part of the Oculina community.

Juvenile gag and scamp grouper live within the grass beds and mangrove communities of the Indian River Lagoon as juveniles. They work their way as juveniles out over the shelf. Then as adult breeding spawning populations, they go to these deepwater reef communities. We know in

the seventies and eighties that there were literally hundreds and hundreds of scamp and gag grouper on an individual reef that we have video of our studies of the biodiversity.

It is a very diverse community, 70 fish, 230 mollusk species, 50 species of decapod crustaceans as well as other species. Grant Gilmore, who spent years and years studying the fish out there on the Deepwater Oculina Reefs, documented 70 species, grouper, gag, scamp, snowy, red, Warsaw, speckled hind, black sea bass as well as snapper, red snapper and large migrating fish such as amberjack, mackerel, wahoo that swim over the reefs. That is simply the species list of the fish, some of the fish on the reef, scamp, speckled hind, Warsaw, even a mola mola sunfish down there.

The decline of fish populations, primarily the gag and scamp grouper, on the Oculina Reefs over the past 20, 30 years is well documented by Gilmore and Chris Koenig and others. We also know that the population densities of the dominant basses and groupers all show positive association with intact coral habitat.

This is just from the studies of the coral and the animals that live within the coral habitat; but living in dead coral habitat within the framework of the coral. As I said, a small colony can hold 2,000 individuals. We worked up the mollusk, 230 species. I'm not going to go into this, but this just shows the composition as well as the trophic structure, different feeding groups.

Some are detritivores, some are filter feeders, some are carnivores eating each other, just some of the species. Most of these species living within the coral are very small. We're talking about a quarter inch, a half inch. This is where they live as they are juveniles, especially the fish; the same with the decapod and crustaceans.

It is so diverse because it's a combination of subtropical species, temperate species, and we even found that cold water were getting boreal species, species that were previously only known off of Nova Scotia. It's a very unique community. Even juvenile lobster and the slipper lobster here; he was about a quarter inch.

We worked up this model of the trophic structure of the Oculina Reef Habitat, with the coral providing habitat for the small invertebrates and the small fish as well as the larger fish. The plankton and particulate material falling out of the Florida current, the Gulf Stream, is also driving the habitat.

We know early on the experimental research area was the first area protected in 1984, and the northern part remained unprotected. This study compared the two sites after 20 years. We saw during the time effects of longline and discarded trawl nets on the bottom. This is a reef that we took a picture off Cape Canaveral in 1978, and this is the same reef in 2000.

We've compared reefs that were within the protected area and outside, and the reefs outside the protected area at that time had had a considerable loss of coral habitat, standing coral habitat, whereas the protected reefs were still thriving. This is a paper by Chris Koenig showing the importance of the intact habitat, especially for the scamp on the right.

The blue is the relative number of the number of scamp per hectare in an intact reef compared to an impacted reef or a reef with nothing but rubble and no real standing habitat. A lot of work

was done by Chris Koenig and Sandra Brooke placing different artificial reef habitat in the areas that had heavy impact.

These were one meter size reef balls, as well as pavers were put out with coral on them. We put about a hundred of these out, as well as hundreds and hundreds of paver stones with coral attached to them. Immediately it did show habitat for grouper showing up; and after a number of years, we saw evidence of coral growing on them.

We know over the years, certainly in the 1970s and early seventies, certain types of trawlers called roller trawlers were being used off Florida. At a joint meeting of the Gulf of Mexico and South Atlantic Fishery Council in 1981, one trawler stated about pulling up a 70 pound piece of coral off Daytona. That was our first inkling that there was coral occurring that far north off of Daytona.

Certainly over the years we've seen lots of evidence of longlines, fishing lines and trawl nets in the coral habitat. Certainly the first HAPC was made directly to protect the habitat from potential impact from bottom-ending fisheries. That was the main point of it. The main problem both in the past and especially in the present is illegal poaching, both trawling and fishing, not the legal fishers.

I'm talking about the poachers that go in, the ones that have been caught and the ones that have destroyed major amounts of habitat. During our surveys in the early 2000 observation, during the survey showed the poachers continued to trawl illegally within the Oculina and even the OECA. At our meeting last October I believe the gentleman from the Coast Guard stated that there were 20 cases of illegal trawling inside the HAPC since 2008.

It also stated that prior to the VMS there were caught all kinds of entries into the habitat. The Coast Guard also caught early on and impounded a shrimp trawler, an illegal shrimp trawler and not one of our locals, but somebody from I think from elsewhere were caught. Their plotting gear showed that they were trawling within the OECA over coral habitat, and even a colony of Oculina was found hidden on the boat as well as numerous hard-bottom species that were still in the hold of the boat.

Worldwide, bottom trawling overall does impact coral habitat and is a major threat to coral habitat. We've seen mechanical damage in deepwater lophelia reefs, in sea mounds off New Zealand, Tasmania. In a test off of Alaska, a single trawl, a single pass removed 1,000 kilograms of Primnoa coral. 30 to 50 percent of lophelia reefs off Norway have been impacted, as well as sea mounds. Rocky sea mounds off of New Zealand have had up to 90 percent of coral loss and 83 percent biomass loss.

The important thing we want to do is protect these reefs and the habitat, and we want to do it, the Shrimp AP want to do it. They don't want to fish on this habitat. Unfortunately, the poachers don't care so we do need the strong enforcement. These two recent discoveries are very simple and are great. Since 2005 we've done some ROV mapping.

This first work was looking at the west extension area, and it is published in the Harter Publication of 2009. The blue polygon there is the current HAPC. You can see from the contour

chart – this is just a NOAA bathymetric contour chart made in the 1970s, it is not real accurate, but it is accurate for high-relief structure.

We knew there was high-relief structure there and this paper proves it with multibeam, as well as ROV dives. Between those two satellite areas, we dove with the ROV, did multibeam. It showed this is high-relief coral habitat as well as associated low-relief habitat that doesn't show up there.

The northern reefs, we discovered these reefs last year during a NOAA cruise, NOAA Pisces cruise. We hadn't planned to go there but the currents kept us from diving on the Deepwater HAPC where we planned to go, so we came here knowing again from this NOAA contour chart that obviously the Oculina habitat extended to the north. We were able to map it with multibeam. You see on the right is the older contour chart, which appears to have about a dozen high-relief mounds in that polygon.

We did multibeam over it and where the older chart shows a dozen mounds, there were actually a hundred in this small area, 100 individual high-relief mounds about 20 meters tall. It is an incredible area. The original proposal for this extension just gave the option of 60 meter contour line on the west boundary, or 70 meter, and then 90 and 100 and 110 meters on the eastern boundary.

This just shows the difference between – the blue line is the 90 meter contour line, and this is the CRM 10 meter NOAA chart; the CRM 10 meter contour bathymetry that was used to draw that. Anyway, you see the 90 meter line is right over the habitat. At least in its northern extension the hundred meters appears to be off of it.

On the western boundary, this is what was redrawn. During the Coral and Deepwater Shrimp AP meeting, talking about this northern extension; we all agreed there is definitely habitat there. The ROV dives and the multibeam verified that. There is no dissension on that. I think we both agreed on that.

At the meeting we agreed to look at the 70 meter contour for the west boundary and the 100 meter contour for the east. The 70 meter line here is the blue polygon; and although the 70 meter line protects a lot of the deepwater coral habitat, you see here it actually goes through some obvious coral high-relief habitat. What we agreed to do, both the Shrimp AP and the Coral AP, was to redraw the contour lines starting with the 70 meter west boundary, the 100 meter east boundary and then tweaking it where it is obviously going over high-relief.

Roger and the Coral AP did that a couple weeks ago and presented these new lines, which is a minor tweak like where you see right there where that thing goes right through that big mound; we just moved it to the west about 50 meters, so there were only about three or four places where that line had to be redrawn.

This is also from that cruise work done by Stacey Harter and Andy David and NOAA Fisheries. This is the fish count just from one dive; one day, one dive; a lot of bank sea bass, of course, a reef fish, scamp, black sea bass. It is nice to see the black sea bass coming back. We saw by the late eighties virtually all the black sea bass were off those reefs and they were the dominant fish in there in the seventies and early eighties. It is nice seeing them come back.

We're also seeing juvenile speckled hind showing up on these reefs and scamp look like they're using it more and more. If we can protect the reefs from poachers, illegal bottom fishing and illegal trawling, it will allow these reefs to grow back, allow the coral to resettle and grow. We know it is very slow growing, provides habitat, essential fish habitat. We have just got to give them time for that coral to re-grow there. Thank you.

MR. MERRIFIELD: John, when was the last time you were diving in the area of the Oculina Reef to collect a lot of that information there? When was the last time some of the ROV dives were performed in that area?

DR. REED: In 2011.

MR. MERRIFIELD: In the Oculina areas?

DR. REED: Right.

MR. MERRIFIELD: Where is the data for that?

DR. REED: That was the Pisces Cruise of 2011. That is where we discovered the habitat to the north or documented the habitat to the north. We also dove within the OECA.

MR. MERRIFIELD: But a lot of those pictures and so forth that were taken were from the 2001 dives that were done?

DR. REED: Well, which pictures? I mean the pictures were from the report over the 30 years of research, yes.

MR. MERRIFIELD: Can I go ahead and make a comment on that presentation? I have basically been involved in the shrimping industry about ten years and it came to my attention about a year or a year and a half ago that there were some issues with concern about destruction of the habitat. I started doing a lot of research into it, because I wanted to know what really was going on.

On my own I've done a lot of research on what is actually the interaction that is going on here. I guess what I've found is that there is a problem here in that we've got reef structure and we've got soft substrate bottom that are right adjacent to one another, and there is a rock shrimp fishery that is right in that soft substrate bottom. We do have this issue that they are adjacent to one another.

What we have to do is figure out how to coexist and not damage the coral habitat, which I don't think there is anybody in the deepwater shrimp industry that is interested in doing that. In fact, they have to know that bottom so well because they do not want to hit those structures. You can imagine traveling at three to five knots on the surface and snagging on something on the bottom; it is not only extremely damaging to the gear, it is also very dangerous because these boats can flip over pretty quickly if you are tugged from a snag on the bottom.

What I started to do is go out – and I have a presentation that I didn't get to give here today, but it is available if you would like to see it. What I found is that these guys know the bottom extremely well, and they make every effort to try to avoid it. Some of this stuff is so large.

Especially in the areas that you did in 2011, those are extremely large pinnacles that are out there. They know where that is; they have known there is for decades.

It is a generational fishery so they just pass it down from one generation to the next. I think that what we saw in our Coral and Deepwater Shrimp AP meetings was that I think there is a solution here where we can protect the coral. John, I appreciate your passion and the effort that you put into researching that, but at the same time we can preserve traditional rock shrimp trawling areas in the soft substrate bottom that is out there that is adjacent to it.

I think what we came to in that last meeting was that we can come to some terms here. I see you and Roger have done a lot of work in trying to scope out some areas here. I'd like to be a part of that. I've done a lot of research. I've got all the data from a lot of the captains that are out there. I've got it plotted. I know where they trawl. I just think that we can come to an agreement if we would sit down together and try to work this out and draw some lines that preserve the habitat that you want to preserve and also allow the fishery to continue.

MR. WILBUR: Mike, later this morning we are going to have a presentation hopefully from Anna that is going to talk about these various alternatives and the process that the council is going to be using to act on the motions from the meeting that was in Canaveral in October, the joint meeting between the Coral and the Shrimp AP.

If we forget to bring up that point during that discussion, that will be a good time to talk about the process that the council wants to move forward, and any recommendations that the Habitat AP wants to make about that process.

DR. KELLISON: I had two quick questions, but I would also just follow up to one of your questions about where the information resides from the recent ROV surveys. I think as John pointed out, those were led by Andy David and Stacey Harter. They are with NOAA Fisheries in the Panama City Laboratory.

They would be the contact points for those and I can give you their contact information if you want, and probably John as well. I think I recently saw a report that they had submitted maybe to the council, which might include some of that information, too. I was just looking for it on my computer and I haven't found it yet, but if I do I can at least give you the contact information for that.

But I had two quick questions for you, John. One was that you said that the Oculina Banks were unique, like there was no other place like that in the world. I fully recognize that they are an incredibly special place, but what is it – that species is distributed in other places, right? What causes that uniqueness?

DR. REED: That is the big question that we've been asking for 30, 40 years. We don't know. Certainly deepwater coral reefs occur around the world. In fact I'll be giving a presentation shortly about the deeper reefs, the deepwater lophelia reefs that occur off the Southeastern United States.

Oculina itself, the species Oculina varicosa occurs throughout the Caribbean up to Bermuda as individual colonies. If you go scuba diving or snorkeling on the nearshore reefs off of Florida,

even up to North Carolina there are small colonies of Oculina usually about this size that live on the rocky bottom, but they don't form the big banks, these big, high mounds that are the same structure as the deepwater lophelia reefs that have built up over thousands of years.

Why they occur there I think is a combination of a lot of factors; is the Gulf Stream, the Florida current providing larvae, food, plankton going over it all the time, trickling down. That is the same reason the deepwater lophelia reefs occur here. You have substrate, you have the right temperature, and you have a food source as well as the larval source.

Why they haven't occurred elsewhere, I don't know, as far as the big banks. I've gone to a lot of meetings, deepwater coral meetings, international meetings, and nobody has ever seen it in their waters like that. For some reason it just forms between Fort Pierce and Daytona as far as we know right now.

DR. KELLISON: My second question was you mentioned that there are northerly species that you are finding evidence of on the Oculina Banks, like species that were maybe previously described off of Nova Scotia. I was just curious as to what is the transport mechanism to get species form north to south. Typically we think of like more tropical species getting carried north by the Gulf Stream transport. Is there just subsurface circulation moving from north to south?

DR. REED: Well, there is bottom water coming down from the north. Typically it is not coming down to Florida. Whether those species are coming all the way around, depending on their life history, how long they are in the plankton, nobody knows, I don't know. We don't even know – nobody has ever collected the larvae of deepwater lophelia coral or even Oculina coral naturally. It is obviously out there, but nobody has collected it in a plankton net. We know very little about the coral and the reproduction is virtually nothing about the invertebrates.

MR. MERRIFIELD: My concern is this; the reason that I am in this position I am in today is because when I heard statements about 90 percent of the reef being destroyed by trawling, it concerned me very much because I'm an extremely environmentally conscious person and I would just not want to be involved in something to that effect.

I started doing this research, and I just don't want the image to be out there that rock shrimp trawls are just out there raking over the coral. It is just simply not the case. It doesn't make sense. If you would study the fishery, it is not consistent at all. I was concerned by this and started doing the research and found out that I know there is not this overlap. There may be instances, but then in general this is not the case.

It is not like people are out there trying to get every chance they can to go in there and try to swipe. That is not where the shrimp are in the first place. The shrimp are out in the soft substrate. That is what they are targeting. As far as the poaching and that is concerned, there have been 21 instances since 2003 when VMS was put into place.

Seven of those resulted in violations, three are under consideration, and eleven were dismissed. There has been zero since 2010. I don't want the image out there. And this is why I got into this, I wanted to research this because this image that the shrimp trawls are out there just raking over the tops of these coral mounds is not right.

It is an extremely volatile environment down there, John knows, the shrimpers know it as well, because they have to deal with it. I think there are a lot of things going on here, and I think that to say that 90 percent of that is due to trawling is inaccurate. That is my opinion from the information that I have.

MR. KELLY: John, in the Florida Keys we have seen some pretty interesting things going on with corals and climate change here, in particular cold snaps that have killed off significant populations of acroporids in the upper Keys. Yet by the same token just off Fort Lauderdale we're seeing enormous colonies of the same types of corals mushrooming to a level that you can actually swim to them off the beach.

Do you see similar trends in deepwater corals that are being effected by climate change where you have die-offs in one particular area and it blossoms in another? I realize in the Keys it is easily observable. I don't know that you have had time to make these determinations on deepwater species.

DR. REED: Actually NOAA is funding a lot of work and actually some of the work I've been involved with looking at Mesophotic reefs, the reefs in the 50 to 100 meter zone, with the idea that as this deeper water, which is not being immediately impacted by warm water, so most of the bleaching we see in the shallow water – in the Florida Keys, for example, and worldwide most of that bleaching is from warm water where temperatures are in excess of 30 degrees for a certain amount of time where those corals drop their zooxanthellae from the stress.

We know that is what is going on there. NOAA has funded a number of studies looking at deeper reefs that aren't being affected. They are still like at 70 degrees Fahrenheit. They are not getting up to 90s at all, so they are not being impacted by the immediate warming to see, for one, are these Mesophotic reefs refugia for coral species as well as fish.

In fact we have a five-year study going on ongoing at Pulley Ridge, which is a shelf-edge Mesophotic reef off of the Tortugas in about 70, 80 meters of water. We're starting a long-term study of that looking at the fish, coral, algae and sponges; looking at the genetic populations or the genetics of the different populations; looking at connectivity, how they connect to the shallow water reefs. Are they connected to the shallow water reefs in the Florida Keys Sanctuary? Are they truly a refugia? There is interest there and we are not seeing the same type of bleaching and killing of the deeper reefs as we see in shallow water.

MR. WILBUR: John I have one question. You had a slide that showed about 12 pinnacles based on a NOAA bathymetric chart and then a finer depiction of the area that showed roughly I think you said 120 pinnacles based on multibeam sonar. I'm trying to get my head around the idea. When you get to those higher quality data, do they take what essentially is a broad, flat pinnacle and break it up into many pinnacles, or is the multibeam data finding pinnacles in areas that the NOAA bathymetry charts actually showed as flat bottom?

DR. REED: Actually I have about five slides that I gave you that address that. The bottom line is yes. The older charts, these old NOAA regional bathymetry charts are typically – in deep water, they are in the order of about 10 meter resolution. That is huge. Most of your hard-bottom habitat, as habitat people do know, most of your shelf is low to moderate relief features, hard-bottom pavement, low-relief ledges, one to three meters.

These are not going to pick up high-relief structure in the deepwater where we have less resolution, typically five to ten meters. Let me just show you one example where the multibeam picks up. This just shows the scale of different types of maps. Typically in deep water multibeam is used to pick up scales of 10 meters to 50 meters structure, depending on the type of multibeam. Worldwide this is being used depending on the high frequency.

Typically for deep-water mapping your multibeam is on the order of 5 to 10 meter resolution. Well, if you have a pixel from the multibeam that is seeing something that is a 10 meter feature, it just gives you one pixel; 0 meters, that is 30 feet tall; or even 5 meters, 15 feet tall as one pixel. You really need about 10 by 10 of those, really 100 of those, like three across, three down, so 10 pixels to define something.

To see the lower relief from less than five meters, one to five meters such as hard grounds; your low-relief pavement, you need visual, you need very high-scale, high-resolution multibeam, which can be done but it is very expensive and typically is not done. It hasn't been done off Southeastern United States.

There is multibeam available less than a meter, but it is very expensive and takes a long time to do a large area. AUVs are being used for multibeam, so this provides a large swath so you can cover a large area. Again, you are looking at maybe five meter resolution for the majority of the multibeam that has been completed off the Southeastern United States.

Certainly, here you can see the three obvious big features that are 20 meters tall, but that green and blue, what appears to be flat is habitat also, but it is just so low relief that it doesn't pick up. Here is another example where we've mapped with the multibeam these structures. We dove with the ROV. Obviously, the high-relief structures there are easy to see on a fathometer.

These are 10 to 20 meter structures, but the low relief that the multibeam does not pick up in the one to three meters is extensive habitat. That yellow area off to the left and the green area in the middle was all hard-bottom habitat, low-relief hard-bottom habitat; ledges, rock pavement with coral sponges, gorgonians living on it, so it does not pick up on even the best multibeam.

All the mapping that we've done out there since '95, we've only covered a small portion of the bottom. Here is our contour map that we discussed. Again, the multibeam charts will pick up high relief and the old NOAA bathy charts pick up high relief. Here is the NOAA bathy chart straight off Canaveral in deep water, 700 meters, obviously showing high-relief structures. The black dots are where we verified or groundtruthed it with the submersible dive, so each feature was real, but then to the left of there, what appears to be this mud slope, there is a little zigzag in the contour chart that I thought was odd, way far away from the main reef.

We dove it, we did multibeam. That little zigzag on the bathy chart, which is 10 meter resolution, 10 meters, there were 5, 20, 60 meter tall mounds; 60 meters, that's huge. It doesn't show up in the old bathymetry. The old bathymetry is good to show where high relief is. It does not show where low relief is.

MR. STREET: What is the lateral distance from that first chart that you showed in your presentation, between the 60 and 70 meter contours?

DR. REED: Between the 60 and 70, when the first proposal for the northern extension, do you mean; is that what you're talking about? The 60 meter, there were four lines that were offered in the proposal, 60 or 70 for the west side; 90 and 100 for the east side. The 60 meter line, it's quite variable. The 60 meter line picks up your 27 fathom ledge system in places. It is zigzagging in and out quite a bit. In some places it is a mile; other places could be several miles different from the 70 meters.

When both the Coral and the Deepwater Shrimp AP voted to approve the 70 meter line, there were several miles between that and the 60 meters, but we felt that the majority of the high-relief coral was protected by that 70 meter line. Then we just moved it around obvious features that were very minor movement, maybe 50 meters, buy it is tough. The 60, 70 meters line, it is so rugged in there with ledges and stuff. It is not a straight line, like out at 100 meters is pretty straight up at that region.

MR. MERRIFIELD: John, I wonder if you just talk about – a lot of the stuff that I read talked about dead structure and then live structure growing on top of it. What is causing a lot of the dead structure that is out there? Over the last few years we have had a lot of upwellings, a lot of cold water upwellings. What is the impact – are they having an impact on that coral? How is that affecting them? What are some of the natural things that are out there that are actually causing some of this rubble and some of this death of the coral?

DR. REED: First, Mike, I just want to say that your previous address about the shrimpers is certainly not the Coral AP's opinion or my opinion that the current shrimpers are causing that damage out there. This damage was done in the sixties, seventies, early eighties primarily by roller trawlers and even calico scallop fishing and so forth.

As far as the upwelling, these deep-water reefs actually worldwide, both the Oculina and lophelia deep-water reefs, that is one of the parameters for them to occur in an area is a coldwater upwelling. The cold water upwelling brings up nutrients. What we see on the Oculina reefs, essentially after a cold water upwelling event, you get a big plankton bloom, and then you get all this, what is called sea snot, basically organic material. That is what is driving the Oculina reefs. They are eating that sea snot out there. They thrive on it. I've been locked out of the submersible in 45 degree water. I wasn't thriving on it, but the coral was.

MR. WILBUR: John, for the record, could you give us the scientific name for sea snot? Okay, I want to kind of wrap this part – we have some open-ended discussion on the topic at the end of the session. The rumor is Cynthia will be here in about 15, maybe 20 minutes. What we'll do is we'll jiggle the agenda a little bit and Anna and Gregg will walk us through the Options Paper. I believe this is the Options Paper that was provided to the Coral and the Shrimp AP in October, and you're going to maybe on the fly jiggle it a little bit to focus on what has happened since that meeting.

MR. WAUGH: Yes, what we'll do is give an overview of where we are now; and then whenever Cynthia shows up, we can just jump to her presentation. Leading into this, as Mike has pointed out and I think John clarified also, this isn't pointing the finger at rock shrimp trawling as its operating now as the cause of the damage.

Certainly, the point is that obviously rock shrimpers aren't going to trawl on those large coral mounds, but it is not just the large mounds that are important habitat. I think the Coral AP weighed in on the coral aspects and we are looking for the Habitat AP to weigh in on the importance of that hard-bottom habitat that might be low relief that John talked about some. That is extremely important habitat as well.

Where are we? The council received some recommendations late last year and approved at their last December meeting a series of alternatives to go out to scoping. We got those scoping comments as well as input from Coral, Habitat and the Deepwater Shrimp AP. The council reviewed all that at their June meeting.

The plan at that time was to approve options to go out to public hearings that would have taken place in August. Instead what the council was faced with was recommendations from the Coral and Habitat AP that were based on protecting the habitat, and the Deepwater Shrimp AP had recommendations that were carved more – while protecting the habitat but also to allow that fishery to exist.

The council asked us to get the Coral and the Deepwater Shrimp AP together with representatives from the Habitat AP and see if there couldn't be some negotiation over these areas. In the past the council has been the one to do that sort of balancing act between protecting habitat and having the fishery operate, but what they wanted was to give the APs a chance to come together if they could.

The output from that is the new alternative that John mentioned, and we do have some charts here that we will show that. The AP passed a motion directing that the area be refined, looking at more detailed habitat information. We have that for you to look at. We also received some concern raised that we did not have all the VMS data. VMS data started in 2003.

We have it from 2007 through 2011. The Deepwater Shrimp AP pointed out, well, while it is certainly representative of 2007 to 2011 time period it is not representative of earlier shrimping. We have made a request of NMFS, and will be getting the complete VMS data set analyzed so that we can look at impacts in terms of prior fishing on these new proposals.

We anticipate having that some time late this year, early next year. In addition, the Deepwater Shrimp AP has pointed out even if you get that data, that will be representative of our fishing from 2003 on, but you are missing the historical information. That is the information Mike has put together. We've asked him to provide that information to us by the end of this month, so that then that can be incorporated into an analysis of the impact.

We'll be able with these new proposed areas to look at the impacts in terms of fishing from 2003 on based on the VMS data; then pre-2003 look at the historical trawl track information so we can put all of it into perspective. We are having a committee meeting at our December meeting, and what we are going to pass along the AP recommendations from the Coral and the Deepwater Shrimp as well as your recommendations.

The council will look at this Options Paper; and if you recommend adding that new alternative, it will be put in here and it will be presented to them. We are asking them to do a number of things

at this upcoming meeting. The schedule right now is to approve it for public hearings at this December meeting and go out to public hearings the last week in January.

We can't meet that time schedule and have all the VMS data and the vessel track information. We're recommending that they consider giving us some guidance in December, but deferring approval for public hearing to June and then we have a round of public hearings scheduled in August. What we're asking them to do is consider that change in timing.

Then at this December meeting go through the list of alternatives and tell us which ones they would like to see analyzed. That will give us a chance to do the complete analysis, to look at the VMS data, to look at the vessel trawl track information, and give them a more complete picture to look at how they might want to refine the alternative before going to public hearing.

We also want them to go through the alternatives. If there are some in there that they aren't really going to consider implementing, then let's move them to the considered but rejected so we don't analyze alternatives that really they aren't considering. The other item we are going to raise to them is how they want to get additional advisory panel input.

We've got three APs operating here. One is the Coral and their primary goal, their charge is to look at impacts on coral. You've got the Habitat AP, and their directive is to look at habitat implications. Then you've got the Deepwater Shrimp that is looking out for impacts on fishing while we protect habitat.

Do they want us to convene one large AP meeting and try to get some sort of negotiation or consensus on alternatives? Do they want us to have the Coral and Habitat APs meet and formulate recommendations on habitat and then get the Deepwater Shrimp to provide separate recommendations based on the impact of fishing?

We also have our Scientific and Statistical Committee that will be meeting in April. We're asking them to give us some guidance on what approach they want to follow early next year for getting additional input. This will give us time to conduct those meetings however they direct us to and have the SSC review it so that when they get the document in June to approve it for public hearings it will be a complete document and have all the analysis of the impacts, have the three APs and the SSC's recommendations before they approve it to go out to public hearing.

Assuming they approve it for public hearings in June, then the public hearings would take place in August. They would review the public comments and either finalize the document at the September meeting next year or the December meeting. That is where we are and glad to answer any questions.

MR. WILBUR: I have a quick question. After the council receives public input in August, in theory assuming the schedule is met the way it was just laid out, is the council then going to go back to the APs and ask for the APs' point of view on the information received during the public hearing process or is that going to be decided based upon what is received?

MR. WAUGH: In the past we've done it without reconvening the APs. That is something we will put to them in December as well, because the document that the APs will be looking at will be complete. It will be the document that is going out to public hearing. Then we will ask them

whether they want to reconvene the APs again. My personal opinion is I doubt that will happen timing-wise.

It certainly carries budget implications as well. But if you as a Habitat AP here feel that is important, then certainly we can do that. There is always the option of whatever – let me back up a second – we've gotten away from a process we started where after public hearings the council would review public hearing input and then make final choices, then give staff a chance to complete the document, then bring it up at the following meeting to give it formal review. We are trying to get back to that.

Now should that happen, that gives us more time to where the APs could either review the public comments and what the council does based on those public comments at an in-person meeting or distribute it and have a webinar opportunity as well. I guess in answer to your question, we generally don't plan on having the APs meet again after the public hearings, but if you all think that is something important, make that a part of your recommendation.

MR. WILBUR: A follow-up question; is there going to be a staff recommendation to the council for the format of the meeting that will be held in the springtime to finalize the paper for June?

MR. WAUGH: We have discussed this and our recommendation – to have a three-AP meeting is going to be difficult. Our collective staff recommendation is that we not proceed that way, because you are trying to get two APs that are charged with protecting habit, Coral and Habitat, to compromise that recommendation with a Deepwater Shrimp AP.

Our feeling is that you are asking those habitat-related APs to sort of compromise the objectives that you have formulated that group to provide you recommendations for. It is our recommendation to the council that they take those recommendations that are coming from your Habitat and Coral AP, balance them with the recommendations you are getting from your Deepwater Shrimp AP and the council will be the one to balance and find that compromise. We'll know what the council thinks about that after our December meeting.

MS. MARTIN: I'll just add to that a little bit. Obviously, the purpose of the joint AP meeting that was held in October was an opportunity for the Deepwater Shrimp AP and the Coral AP to sit down together at the same table to talk about their opposing directives, which are protecting fishing impacts and habitat and preserving deep-water coral. The council has offered that opportunity.

Moving forward, we came out with some recommendations, and in my mind there was some consensus. It was a very productive meeting. Moving forward we now need to get into the specifics behind those recommendations. We're thinking in our internal discussions that would be best vetted through individual advisory panel sessions at this point. Since we've had that productive, collaborative session, it may behoove the council moving forward to get input after we have presented the refined areas to each of the respective groups.

MR. MIKELL: I think we need to consider the economic impact of this. I don't want to put anybody out of business, but, Mike, how many shrimpers use this fishery and what is the economic impact to those people?

MR. MERRIFIELD: To date I believe there are about 98 rock shrimp permits in existence of which probably there are only maybe 10 to 15 active in any one year. That varies according to the years. Like this year is a light year, there are probably going to be like maybe 5 to 10 active participants this year.

There are people from the Gulf that have permits as well. If there is a good year, they will come over and access the fishery as well, but this year that won't happen. It varies, but it is a tremendous impact economically to the industry. It is a very short seasonal industry and what we looked at – this is where Anna was talking about the VMS data.

The VMS data was looked at. We tried to analyze that or Roger tried to analyze that to try to get an idea of what the impact is to the fishery if we closed off this area or we go with this option over another. I think if we get down and refine that and start really looking at that closer, we may be able to glean some really value out of what the economic impact might be to the fishery.

I think that is where we need to head. I think that would be very valuable and important to do. I think when we get that VMS data – and the other thing is that you talked about getting the track data from the fishermen, which I have a lot of that data now. There is a lot more to get, but when I can get that data and we get the right things in place to where we can plug that data into these models that Roger has, we can really get a true picture of what the impact is going to be. I think that is a very important step to this process.

MR. WAUGH: In response to that question; to me this gets sort of at the roles of the APs. I personally don't think it is the role of the Habitat AP to be concerned with the economic impact. Certainly, we have the fishermen here, and I am not by any means saying that is not an important consideration, but the primary charge to the Habitat AP is to advise the council on the importance of habitat and then the council is a body that would balance those impacts.

Now having said that, this Attachment 10 is the Options Paper. Table 1 on Page 16 shows the impacts and this is the impacts in terms of the northern expansion. This is using VMS data from 2007 through 2011. This will be updated with the complete VMS data from 2003 on. If we get the vessel track information pre-2003, we'll look at that also.

Without getting into all of the details, in terms of impacting the amount of rock shrimp fishing, the alternatives range from a high of 10.8 percent of their fishing being impacted down to the alternative recommended at that time by the Shrimp AP, 0.69. We had a new alternative that looked at 5.74 percent.

The alternatives that were being considered would impact rock shrimp fishing as indicated by the VMS data by the VMS data from 2003 to 2011 somewhere between 1 and 11 percent. That gives you some idea of the impact. Certainly, some of that you have to balance that with how much of that fishing could be made up by fishing on the edge of the areas. This area also acts as a rock shrimp nursery. As those shrimp move out of that area, they are going to become available in other areas. We do have that information there and that is an important component that the council will be balancing.

MR. MIKELLS: Well, I want to be on the record as saying I disagree with what you say about this committee shouldn't be involved in the economic impact because I think that is a big driver

of this whole thing. When I started fishing offshore in the early seventies, we didn't know too much about all of these reefs and whatever, but we had a lot of fish. Nowadays we know a lot about the reefs and we don't have any fish to speak of. The snapper grouper people are feeling the brunt of that right now. The driving force behind that is economics. We need to at least plug that into the formula.

MR. STREET: Two or three years ago when we were discussing, I believe it was the Deepwater Coral HAPC, the whole thing from the Keys on up through North Carolina, we had a discussion on what the role of this AP is. We discussed the effects of fishing and economics, and that there were other panels and other professionals and staff whose job it was to look at those things.

Our job was to look at habitat. Our committee is the Habitat and Environmental Protection Advisory Panel. Now I've worked in state hands-on management in North Carolina for 38 years. We made decisions. Every bit of data that we collected was for a very simple purpose, to make and evaluate decisions. We wrote very few peer review papers.

We wrote hundreds and hundreds of data reports and memos to advisory committees and to the marine fisheries committee and things like that. That was our job, hands-on decisions. The job of this panel I'm assuming has not changed; it is habitat and environmental protection. I was the first one that did economic analysis in North Carolina for the Division of Marine Fisheries before we had any economists.

I admit I did a lousy job; Terry will agree with that I think, but at least I met the law so people didn't come back on us for that, but we need to focus on what our job is. I understand the concerns for the economics. I understand the concerns for commercial and recreational fishermen. I've fished recreationally for 65 years.

I've worked with commercial fishermen since 1968, but there are bodies whose job it is to look at specific areas and specific issues, and then there are bodies whose job it is to do the balancing act and make those final decisions. Our job is to look at the specific areas that we have been charged to examine.

MR. PRATT: Just to follow up on Jenks' economics and some of Mike's comments, the economics are not just the fishermen. It extends to the general public as well. Every regulation has an economic cost to the consumer. Every time you tinker with that regulation, you increase that consumer cost.

For a committee to be so pious as to say we are not concerned I think is a wrong approach. It boils down to there is a running argument in North Carolina over herring. I've done research projects on herrings for the past several years with NC State and East Carolina University. What I see is a very healthy herring population of five to seven-year-old fish, their gut cavity rolling full of fat. I did a larval study this past spring and we found larvae off the scales.

North Carolina is presently pushing submerged aquatic vegetation as are a lot of other people. In the eighties, Mr. Street, Dr. Bill Hassler said that herring, shad and striped bass in particular prefer a clean, sandy bottom for development of juvenile fish. Clean sandy bottom means like this tabletop. Today vegetation is just as thick as my finger standing. You wonder why there is

a decline. Sometimes opinions run head on, Pace and we need to take a holistic approach to all of them.

MR. WILBUR: Again, we're going to try and stay on schedule. I think what we are going to do is take a quick five-minute break and allow Cynthia to get her presentation loaded and get us back on the agenda. Please keep in mind that at the end of the session today we do have an open floor to talk about the various issues related to making these recommendations. If we need to dribble a little bit into the afternoon, we will be able to do that.

(Whereupon, a recess was taken.)

MR. WILBUR: If we could get back to our seats, we'd like to get back on schedule. Cindy Cooksey from the CEHBR Lab here in Charleston is going to give us a presentation on the benthic infaunal communities and sediment contaminants associated with some of the deeper water habitat off the Southeastern U.S.

She works with Jeff Hyland, who I've known for a long time. My actual office is out at Fort Johnson, and they are the nearest diet coke machine to my particular office so I tend to walk over there several times a day. This will be a chance for me to actually find out what they do besides just looking at the posters that are on the wall.

MS. COOKSEY: Good morning, everyone. As Pace said, my name is Cindy Cooksey and I work with Jeff Hyland, and we're located out of CEHBR, which is the Center for Environmental Health and Bio-molecular Research. We're one of the centers that make up the National Centers for Coastal Ocean Science.

Another center that some of you may be familiar with is the Beaufort Lab. They are one of our sister laboratories; also HML, the Hollings Marine Lab, which is co-located with us at the end of Fort Johnson Road. Jeff and I have been working for a long time conducting ecological assessments of condition for habitats around the United States, from estuaries out to the deep sea environment.

We were invited to look at some of the issues associated with these deep sea habitat, soft bottom habitats associated with these deep sea coral habitats. The initial question that I want to address is why do we want to look or why should we even care about these soft bottom habitats, these deserts of sand which surround these very luxurious deep sea coral habitats?

Well, number one, is their ecological value. The animals that live in these habitats are critical for detrital decomposition and nutrient cycling for these habitats. These are kind of one of the bases of the food web out there. We also care because they are a very rich source of biodiversity within our ocean environment.

They also provide early-warning signals for human-induced stress. What did we do? We were working in conjunction with ROVs in order to place our sampling gear adjacent to these critical habitats without endangering them. An ROV would go down, we would watch the video and then we would pick latitude and longitude for deployment of our 0.1 square meter Van Veen grab.

Now, this Van Veen grab, we used a 0.04 square meter insert. This is very important that we use that insert, and I will get back to that later why it was so critical. We look at a variety of indicators as part of our ecological assessments. We're always looking at general habitat conditions, water depth, temperature, salinity.

Also, we're looking at sediment TOC and grain size, which are very critical for the distribution of benthic communities. We're looking at stressor levels, contaminants, metals, pesticides, PCVs, PEHs and surface sediments. We're looking for signs of high-sediment TOC as well as low DO. We're looking at the actual diversity and abundances of the macro fauna, here defined as invertebrates greater than 0.5 millimeters.

This is a simple thing but it is a very important thing to also look at, esthetic quality. We're looking for debris, visible oil sheens, noxious sediment odor, water clarity and turbidity. In 2010 we were attempting to sample off the coast of Georgia, but we had various problems and we ended up working off of Georgetown Hole.

What I really want to highlight here is the technique I was talking about with us working in conjunction with ROV teams. These yellow lines are ROV track lines in the Georgetown Hole area. We were able to place our samples along the track lines in a habitat that otherwise we would not have been able to successfully sample with this gear.

The odds of us just blindly putting down a grab in Georgetown Hole and hitting habitat that we could sample would be very slim; but working with the track lines we were able to successfully sample in these valleys that exist next to the hard-bottom habitat in the Georgetown Hole area. We were only able to sample three stations in 2010; again due to a variety of issues.

But this was a proof of concept for us. In 2011 we were part of a team that looked at series of deep sea coral habitats off the east coast of Florida from the North Florida Region down to Miami Terrace. Again we used our system of ROVs during the daytime, sediment sampling in the evenings, and using the ROV data to successfully place sediment samples near habitats of interest.

In 2011 we successfully sampled a total of 13 stations with three replicates per station. Remember that 0.04 square meter insert I talked about? We're going out and we're collecting this information and I can say, okay, great, we have a diversity of 50 species per grab at a deep sea coral habitat. That's a nice number, but we need to be able to put that in comparison to what it means for the broader environment.

What we're doing is taking that data and we're bringing it into perspective both for the broader South Atlantic Bight Region as well as comparing it to other marine protected areas. Here is an example of Grays Reef National Marine Sanctuary. We've been working since 2003 looking at Continental Shelf habitat from the West Coast, the Gulf of Mexico, the South Atlantic Bight and the Mid-Atlantic Bight, all using the same set of parameters and the same gear types. When we go into a very specific study like this deep sea coral project, not only are we describing the habitat, but we can put it into perspective; what it means relative to the broader shelf environment of the habitat that we're working in.

The data from 2011, I received completely the biotic and the abiotic data in August 2012, so I've only had it for a very short amount of time. Any of the data I am presenting is very preliminary in nature. But again I want to talk about putting it in perspective. Here we have species richness. I have two time periods for the Grays Reef National Marine Sanctuary, 2000 and 2005.

This green bar is data average species' richness for the entire South Atlantic Bight. The yellow bar is species' richness for the South Florida Continental Shelf Region, which we defined as just north of Tampa Bay around the tip of the peninsula up to the Miami area. Then we have in 2010 the three stations that we sampled at Georgetown Hole and then the 13 stations.

What we're seeing in species' richness is that these soft-bottom communities are rather unique compared to the broader continental shelf areas, with an increased species' richness that is actually statistically significant. I can see the same pattern in densities and even more dramatically. These are very rich, diverse habitats; the soft-bottom habitats around these deep sea corals.

Again, significantly higher numbers of animals per square meter as compared to the broader South Atlantic Bight, as compared to the Grays Reef National Marine Sanctuary, as compared to the broader South Florida habitats. I was not able to prepare a slide for this, but I'm also looking at not only the numbers, but I'm looking at the communities themselves using a variety of multi-variant techniques.

What I'm finding is that compared to the broader South Atlantic Bight and South Florida shelves, these deep sea coral habitats are pooling out as unique communities that are more similar to each other than to the broader shelf environment. I'm finding that same pattern as well for the Grays Reef National Marine Sanctuary, which is also a coral habitat.

Not only are they a very rich source of biodiversity compared to the broader shelf environment, with high numbers of individuals, from a community standpoint they are somewhat unique compared to the broader shelf environment. Do we want to talk about some of the sediment chemistry results or do we just want to focus on the benthic complexities?

Again as I mentioned we take a multi-parameter approach to these assessments. We're looking at the biological communities, but we're also looking at abiotic parameters. In this case I want to talk about some of our sediment chemistry results, which was some very good news but also some interesting pieces of information.

Three stations again in Georgetown Hole; excellent news, most contaminants were below detection limits. ERMs, ERLs; these are, for those of you who aren't familiar, an ERL is a level below which a contaminant is not likely to cause negative bio-effects, and ERM is a level above which a contaminant is likely to cause bio-effects. We had no higher level ERMs exceeded. We only had one contaminant, chromium, which is a naturally occurring crustal rock or crustal metal that was above its associated ERL, but still below the higher level ERM.

All very good news, a very good story; however, what is interesting in these offshore environments that are not near any point sources of pollution, we did find detectable levels of total DDTs, as well as a variety of what we call persistent organic pollutants. Your pesticides,

the lindane, the HCG, the chlordanes, these were below ERL levels; these were not at levels where we would expect to have bio effects on the benthos, but we're finding them out there.

I think that is a pretty interesting finding. Now let's go to the Florida Atlantic coast. Again, excellent story, most contaminants below detection limits, none of the higher level ERMs detected. One contaminant, copper, again a naturally occurring crustal metal above ERL but below an ERM; however, we're still finding these persistent organic pollutants out there.

We're finding them at detectable levels, low, not likely to cause harm to the benthos, but we're finding them, and we're finding a wider variety the further south we go, including flame retardants, the PBDEs; again your pesticides, a wider variety of pesticides. We are also finding PCBs in these sandy environments.

In addition as part of the study, following the pattern that we use everywhere we go, we look at fish tissue contaminant levels. In 2010 we were able to sample 20 wreckfish that were collected off the coast of Georgia. As you can see here, we had a mean length of 37 inches and a mean weight of 33 pounds.

A wide variety of contaminants were found at detectable levels within these fish. Many of the contaminants that we found at detectable levels did not have EPA advisory guidelines for us to compare against. This includes the PBDs and a variety of pesticides. We have numbers on them but we don't really have a way of assessing what those numbers mean from a human health standpoint.

Where we do have EPA guidelines for recreational fishers, you have cancer and non-cancer. Very briefly, the cancer-level guidelines are very low levels. I'm noting them here, but we usually don't pay too much attention to these lower level cancer guidelines. We do tend to pay attention to the much higher level non-cancer, in the red, guidelines.

Of the 20 fish that we collected from these deep sea coral areas, we had two that exceeded the EPA higher level non-cancer guideline for total DDT; twelve that exceeded it for total PCBs; and all 20 exceeded the methylmercury guidelines. Next steps, we consider a lot of this information preliminary. We still have a lot of questions that we would like to address.

We still need to conduct further data analysis. We need to publish these results, but I think we have some really interesting information at this point that really reflects that these are complex, benthic environments that are unique within the broader shelf habitat; that we also need to be out there continuing to collect information on the distribution of sediment contaminants in these habitats, because they are making it out there. I am happy to take questions.

MR. MIKELL: I find it interesting that you found mercury in the fish but not in the sediment.

MS. COOKSEY: Mercury bio accumulates. We did find it, but we did not find it at levels that were above ERL or ERM guidelines. It is a naturally occurring metal that also has been elevated due to human activities. We found it; I just did not make a special note of it, because it was not above the thresholds that we are concerned about it directly impacting the benthos, but it is out there.

MR. PRATT: One thing you might be interested in, Jenks, is the mercury. Almost 90 percent of it that is found in the environment in water situations precipitates out of the air. It doesn't come out of the bottom sediment.

MR. MIKELL: That's why I asked the question, because it seemed like to me that the rain falls in the ocean. How does it get to the fish?

MS. COOKSEY: Right; it bio accumulates up through the food chain. The plankton as well as the invertebrates within the benthos and the sediment is coming in contact and then they are eating it. Again, these invertebrates are a critical part of the nutrient cycling.

MR. STREET: You differentiated between the soft bottoms that are immediately adjacent to the hard bottoms and then you compared them to the general habitat. Where does the general habitat begin relative to the soft bottoms that are adjacent to the hard bottoms?

MS. COOKSEY: That is a very good question that I wish I had the data to answer. That is a question that a lot of people have. We've done some work with the Grays Reef National Marine Sanctuary to try to address that, but I don't know that we went far enough out. I don't know how familiar you are with Grays Reef, but it has a very diffuse habitat of corals. We were working within the Sanctuary itself and my data indicates that pretty much all of the Sanctuary has a very unique community compared to habitats outside of the sanctuary.

MR. STREET: Yes, I did some work on Grays Reef in 1968 with Georgia Game and Fish. The reason I asked the question is because people focus on hard bottom, SAV and other obvious three-dimensional structured habitats; whereas, the soft bottoms, the sands, mud are the primary habitat, but they, of course, are three dimensional as well, just on a much, much, much finer scale. When people start talking about "improving habitat," what they're talking about is replacing or covering soft bottom with structure.

There are a lot of people – well, most everybody says, sure, let's do it, we've got all of this soft bottom habitat that doesn't produce anything and we know that artificial reefs either produce or accumulate, and SAV produces and things like that, but soft bottom in and of itself is a productive habitat with invertebrate and vertebrate and fish communities that are absolutely dependent on it. I think too often people do not value soft bottoms and what they contain.

MS. COOKSEY: Most of the fish that are on those hard-bottom habitats, at some point in their life stage are going to be moving out into the soft bottom areas and foraging. We've documented that with gut content analysis there at Grays Reef. I agree, it is a critical part of the ecosystem.

MR. WILBUR: Do you recall what the depth range for your samples off of Florida was?

MS. COOKSEY: Not off the top of my head. I want to say it was probably an average depth of about 100 meters, with some range around there, but I wasn't able to review that before I rushed over here this morning.

MR. WILBUR: We'll just see if we can maybe push it a little too far, but some of the boundary lines we're being asked to consider for expanding the Coral HAPCs are talking about expanding our boundaries at the 60 or 70 meter contour on the western side and at the 100 or the 110 meter

contour on the eastern side. Is the bulk of your data to the east of these areas that we're being asked to consider; is it in the middle of these areas or is it to the west?

MS. COOKSEY: Do you mean the deep sea coral sites themselves or the broader shelf comparison data?

MR. WILBUR: The places where your Van Veen grabs were taken.

MS. COOKSEY: Right. The red dots that you see on this map are the locations where we collected the deep sea coral habitat. We were right in areas of interest to this group here.

MS. MARTIN: I think here we are specifically talking about, as far as an extension of the Oculina Bank, a northern extension, the benthic grabs off of Cape Canaveral and the Oculina Pinnacles off of Daytona.

MR. PHILLIPS: Could you tell me those chemical contaminants, the half life on them or the shelf life on them; are they building or –

MS. COOKSEY: Persistent organic pollutants; it is kind of in the name. These are organochlorine compounds that are not going to be going away anytime soon.

MR. PHILLIPS: So we're accumulating them?

MS. COOKSEY: Yes.

MR. WILBUR: Just one more follow-up question. Back in the ancient days, before there was Google Scholar and we had to read papers, it often talked about halos around coral reefs where the foraging that was already mentioned depressed the infaunal communities. Do you not see that or are you not sampling on a fine enough scale to look for that kind of thing?

MS. COOKSEY: We've looked for that. We've looked for it at Grays Reef, and we did not find halos at Grays Reef. We were curious if we would see the halos here. Based on what I saw in the 2011 data off of Florida, I did not see any evidence of halos. However, the Georgetown Hole where we were sampling within a narrow valley surrounded by deep sea coral habitats with dense fish communities on both sides, we found very low densities. I believe that may be a sign of foraging impacts within that very narrow habitat in the valley. That may be a sign of the halos, but halos are not in all coral habitats.

MR. WILBUR: Any other questions? Okay, thanks again. Anna, are we going to go through the Options Paper now?

MR. WAUGH: This is Attachment 10 in the material that you have. What we thought we'd do here is look action by action. The first is the northern extension of the northern zone and we've got the new alternative that was worked on and we'll pull that up as well. We're looking at Page 3 of that Options Paper and it shows what your current recommendation was, Subalternative 2A. I'll pull up the new alternative.

MR. WATTERSON: I was just curious if we are going to be going over any of the alternatives that were produced out of the joint Coral and Deepwater Shrimp.

MS. MARTIN: Right, yes; that's what Gregg is talking about. This is kind of a work in progress. Some of the recommendations as we mentioned that came out of that joint AP meeting called for getting together with a subgroup and developing these areas. That will have to be vetted through the APs once again.

But Roger and John Reed and Steve Blair were able to come up with a rendition for the northern extension. Under Action 1 and the range of alternatives that follow under Action 1 deal specifically with scenarios for extending the northern boundary of Oculina. That is what Gregg has pulled up here. We will be able to show the recommendation as far as the spatial representation that came from that joint AP meeting.

DR. WHITTLE: Along with Pace I, sat in on your joint AP. I guess my question is what are you asking of the Habitat AP? In our May webinar we sort of endorsed what the Coral AP did, and the Coral AP set their boundaries much by the coral that John had seen mapping. As you saw by your presentation, there are two areas that have some data and then most of the area has no data.

We've had presentations that show from the habitat perspective it is even more than just coral; it is a mosaic that we might want to protect from the habitat perspective. We have even less data. We went with endorsing what the Coral AP did. As a Habitat AP, how are we going to decide how much mosaic we would like to preserve even past that, because at the meeting the Coral AP in some instances had consensus to sort of narrow what they were doing. How do we counteract it? Is there more mosaic that we want to protect and how do we decide that with almost no data?

MR. WAUGH: That is up for you all to discuss and base your recommendations here. Your current position is you endorsed Subalternative 2A. Now at the Deepwater Shrimp/Coral AP meeting they approved a motion that asked a group to get together and look at refining that based on the habitat. John can go into this in a little more detail, but this was e-mailed to you yesterday and we've got it here projected. This shows the results of that work to refine.

DR. WHITTLE: The coral habitat?

MR. WAUGH: Correct. I think John can explain how much this has changed from your previous recommendation.

DR. WHITTLE: But it's still based on the coral habitat and not on any other habitat mosaic that we might want to take into consideration.

MR. WAUGH: Correct, and you all are free here to make your own recommendation. We're just offering this as the output from that meeting.

MR. WILBUR: We're getting a little maybe constructively ahead of ourselves. Amber and I had a chance to sit next to each other and talk constantly during the meeting back in October. We were basically bouncing ideas off of each other as to how we individually and then how we might as a Habitat AP approach the problem.

Maybe that is another way to kind of rephrase the question is as a Habitat Advisory Panel – and we've heard some discussion already about what our charge might be as an advisory panel – what information do we want in front of us when we are being asked to decide which of a half dozen or different alternatives are appropriate for expanding the Oculina HAPC.

The alternatives that are in front of us now are based upon folks using best professional judgment informed by some data but not an extensive amount of data in terms of geography of where the coral is. One way for us to look at this as a Habitat AP is what kind of information do we want and is that information available?

MR. STREET: I would like to see a table comparing these areas that shows the amount of area, acres, hectares, whatever, and the estimated percentage of the Oculina Coral Habitat that is estimated to be encompassed of what has been found. Are we talking about an additional 200 square miles that would encompass 60 percent of what is believed to be there or that type of information?

I went through this stuff hurriedly. There was a tremendous amount of information. I freely admit to not reading all of the 700-plus page report or the 100-plus page report. I read some of the six- and seven-, ten-page reports, and I did take a quick look at the e-mail, the attachment from yesterday, but I have a great deal of trouble trying to figure out what the charts are showing, what the maps are showing just because the lines are so dense. Then there are the yellow areas and there are the boxes, and I'm frankly not sure what they are showing.

MR. WILBUR: We do have in this Options Paper the basic information needed to construct most of that table, definitely not all of it. What I would propose we do now is let the council staff walk us through the paper and hopefully at the end – there actually is a slide on the computer that has the beginnings of that table – we can then talk about what additional information we would like to add to that table from there.

MS. MARTIN: Okay, I believe this Options Paper in some form was reviewed with you during your webinar this past spring. What you originally saw; the ranges here under Alternative 2 are the scenarios for expansion of the northern boundary for the Oculina Bank. As John pointed out in his presentation, this is a recommendation that has come forward from the Coral Advisory Panel.

It is based off of areas that they have been able to survey off of Daytona and Titusville. It is also based on the bathymetric charts depicting the original Oculina Bank Reef Track. The original recommendation from the Coral AP –

MR. WILBUR: Can I just interject for one second. Can you scroll down to I think it is Figure 7 or something in here, the one that has all the colored boxes on it. Okay that one, and zoom out a little bit. I tend to be a very visual, mappy kind of person. I need to understand where my kids are by looking at where they are on a map.

I asked Anna to kind of just slow down for a second and put this up just to make sure we all understand really what they're talking about when they say the northern boundary. I was halfway into the last discussion before I even figured out what that was back in November last

year. What we're talking about here is the northern boundary and that is what Anna is showing right now.

There is not a huge amount of disagreement as to what the northern extent of that potential expansion area is. A lot of the discussion is about the thickness of it and what contour is used to define the eastern and the western sides. That is what we're talking about now; and later on when we talk about the western expansion area, you can show where that is on the little red thing, the blue box right below it. There will be discussions later about the western expansion, and that is that open polygon right there. I just want to make sure everyone kind of has northern and western kind of straight in their heads before we get too deep into the nitty-gritty of the detail.

MS. MARTIN: Thanks, that's a good suggestion, Pace. Just to be clear, this yellow polygon there, that is the original Oculina Bank that is in existence right now. The green box down to the southern end of the boundary is the Oculina Experimental Closed Area. That was something that was approved through a snapper grouper amendment specifically looking at protections for a number of deep-water snapper grouper species there.

That does lie within the Oculina Bank HAPC. What we're talking about right now; the alternatives under Action 1, Alternative 2, deal with this area here. It is based on, as John pointed out in his presentation, the surveys that were conducted off of Daytona and Titusville. In some of the charts in the Option Paper, Roger has laid out the areas that they have been able to map.

That is the impetus behind the Coral Advisory Panel's recommendation, using the groundtruth surveys that they've been able to go out there and conduct and perform and also comparing that with the NOAA bathymetric charts to indicate probable extent of habitat. If we flip back to the range here, Subalternative 2A is what the Coral Advisory Panel originally came forward with.

That is basing the northern extension – can you all read that? Hopefully, you are following along with Attachment 11. They originally came forward with Alternative 2A, and that bases the northern extension or proposed northern extension, rather, along the 60 and 100 meter depth contour lines.

The rationale provided there was that would allow the most amount of protection for what the coral scientists have come forward with that they know exists in that area. This range of alternatives was taken out for public scoping. The Deepwater Shrimp and industry representatives that attended the scoping meetings had some comments here.

What they came forward with during their spring formal advisory panel meeting – they met in conjunction with the Shrimp Advisory Panel – was a modification to what the Coral AP has recommended, and that was something they developed off of Subalternative 2B. The range here simply is a suite of scenarios that follow kind of different parameters; Subalternative 2B being the northern extension tracking the 70 and 90 meter depth contour lines.

The Deepwater Shrimp AP has come forward saying that a lot of their historical trawling fishing areas are taking place further inshore than the 70 meters. Between 60 and 70 are very important

grounds for the Deepwater Shrimp AP. Subalternative 2C, tracking the 70 and 100 meter depth contour lines; and 2D tracking the 60 and 90 meter depth contour lines.

Originally this range was developed just to provide a suite of options for the public to comment on during the scoping meetings. What the joint Deepwater Shrimp and Coral Advisory Panel meeting was able to do was to talk about primarily that area between the 60 and 70 meter depth contour line.

There is a very important ledge known as – and Mike can chime in as appropriate – 27, 28 fathom ledge that is the important shrimp trawling grounds for them. Some of the coral folks came forward talking about Subalternative 2C would protect the most amount of habitat that is known.

Originally they did come forward with the more protective scenario, the 60 and 100 meter depth contour, but they offered up that 2C would protect what they know is out there. This Subalternative 2C is what the groups were able to come to some type of consensus during the joint advisory panel meeting.

What we can show and project is the area that Roger and John have put together that is based off of this Subalternative 2C. The motion passed during the joint advisory panel meeting was developing the alternative to present to the council around this scenario, which would offer up some of those productive trawling areas for the deepwater shrimp folks involved in that area. Also there have been some snapper grouper concerns about anchoring in some of those areas off of some of those ledges there while protecting some of the habitat that the coral scientists know that does occur in the area.

MR. WILBUR: I'm just going to add one thing just like a summary of it. The contours in play here are the 60 meter, the 70 meter, the 90 meter and the 100 meter contour. That is what came out of the process last year for defining these potential eastern and western boundaries for the northern expansion area.

The Coral Advisory Panel picked the 60 meter contour and the 100 meter contour. That gave you a fairly fat northern extension. The Shrimp Advisory Panel countered with the 70 meter contour and the 90 meter contour. That gave you a relatively thin northern expansion. Now if you want to turn that into area, as Mike suggested as one important part of the table, the fat one is 430 square miles. The skinny one is 228 square miles.

When you look at the amount of area that each of those contours essentially represents, you get more square miles going from 70 meters to 60 meters than you do going form 90 meters to 100 meters. In the effort to focus on maximizing the area of protection, that is why most of the discussion ended up focusing on the western side of this proposed expansion area in debating the 60 meter contour versus the 70 meter contour. Now you are going to kick into some of the other little nuances that have come up since then.

DR. REED: At the Deepwater Shrimp and Coral AP meeting in October, each AP looked at the data and then each AP voted to agree on that the 70 meter to 100 meter contour line was appropriate, and that we would look at the line and move it accordingly where the line went over

obvious high-relief habitat. Roger did that a week or so ago. The difference was just following the 70 meter line would have crossed over habitat.

We moved three places, three points, about 50 meters to the west, three points that were obviously on top of high-relief habitat. From the contour charts, we moved three points, moved those three points so it avoided the habitat there. On the east side the 90 meter was right across a lot of habitat. T00 meter avoids the obvious high-relief habitat. The east side is very straight.

That is where you have the highest pinnacles and they are in a very straight line. That was the old Paleoshoreline of Florida some 20,000 years ago. I think the 100 meter; I don't think we have any problem with that, either the Coral AP or the Shrimp AP for the northern border. Roger and the Coral AP moved the western border to 70 meters with a couple little adjustments to avoid obvious hard bottom.

I think it is very simple that we completed this chart to protect the majority of the coral habitat and the habitat between the high-relief coral, which is your other habitat; your low-relief ledges, rubble and so forth that are between the high-relief features, so the 70 to 100 with a little tweaking I think is good for everybody.

MR. MIKELL: John, so your recommendation is Alternative 2C.

DR. REED: That's correct.

MR. MIKELL: I so move.

DR. REED: I'll second.

MR. WILBUR: Discussion.

MR. GEER: What was the area of that tweaking? Do you know the total area of the new tweaking area?

DR. REED: Roger has that data. Again, there are like three points moved about 50 meters so I don't know.

MR. WILBUR: 329 square miles is what I'm hearing from the peanut gallery.

DR. REED: Not that we changed.

MR. GEER: I want to know what the total area with the tweaking would be.

MR. WILBUR: Let's just clarify; Alternative 2C is not what was worked on last week. What was worked on last week was starting at Alternative 2C and making some modifications to it. Now, Alternative 2C by itself, as originally proposed last spring, is 278 square miles. The tweaking that was done to it last week – and that tweaking again, as John pointed out, was done according to the guidelines that both the Shrimp and the Coral AP endorsed in their meeting in October – resulted in 329 square miles. That is what I've heard from the folks in the back who are part of that technical exercise.

MS. MARTIN: Just to add on to that; what the groups came up with during the joint AP meeting was to base a new alternative to present to the council off of Alternative 2C, which tracks the 70 to 100 meter depth contour lines while annexing some of the hard-bottom features that the coral scientists know exist.

This is the new scenario; it is not yet an alternative in the Options Paper. That is something that will be presented to the council in December. It is similar in scope. What was discussed as a foundation for developing that new scenario from northern extension is the Subalternative 2C. That is the 278 square miles.

You can see in the table in the Options Paper, even though it is limited, it is the past five years of VMS data; the percentage of impact to the rock shrimp industry based on fishing points in that particular area. Again, that VMS data is something we are looking to refine. That will be something that the Habitat AP would see again with the complete VMS data set at your next session.

MR. WILBUR: We have to kind of bring some order to the chaos here, part of which is exacerbated by the technical glitches. Mike, do you want to make a point?

MR. MERRIFIELD: Anna kind of alluded to it there, is that the numbers in the options that referred to the VMS data and the impacts that it has on the fishery, those are not accurate. I think that you've just got to look at it in terms of least and most. You can look at it in that way and say a higher percentage or a lower percentage, but it is not a good indicator of impact to the fishery. But also I got this 2E on my phone last night in the airport, so I haven't had a chance to look at that. It's not very good for reviewing it.

MR. WILBUR: Right, I think that that is a good point, and this is very hot off the presses. We do believe it is probably an extremely faithful attempt to execute the direction that came out of the October meeting. But as with all scientific ideas, the test of time is the test that matters, and having a chance to mull it over and look at it is going to be an important part of the process.

We'll have to decide as a group whether we are at the point of ready to adopt it based upon the information we have or whether we want to allow some additional time to transpire and evaluate it, and see how it shakes out.

MS. WENDT: I was just going to ask if you could project the most recent version.

MS. MARTIN: Yes, we're working on that.

MR. WATTERSON: I just had a question about the alternative that the Shrimp and the Coral AP came up with where you were following the 70 meter contour line with some annexing of hard bottom, correct, John. It is where you were following the 70 meter contour but you annexed certain areas of hard bottom accordingly, correct?

DR. REED: Right.

MR. WATTERSON: My question would be, particularly to Mike; how easy is it to conform to that when you are out on the boat? How are you going to know where those annexed areas are when you don't have a depth contour or anything to follow?

MR. MERRIFIELD: Basically the software that they're using out there, tracking software, if we put in the coordinates of the boundaries of that area, they will know exactly where it is at.

MR. WATTERSON: It will draw that boundary on your software?

MR. MERRIFIELD: Right, exactly. It doesn't matter what the shape is or what it is, they have got a clear boundary. I have a chart here to I need to put out, because it will show you a lot of those boundaries and it will also show you the existing tracks so you can see. They know exactly where those boundaries are. All we have to do is give them the coordinates and make sure that it is well published out there on the water, and they'll know exactly how to conform to that.

MR. WILBUR: Just to clarify Carter's question a little bit; when the boundary is set, it is not set at a contour line. It is set at a series of points that can be connected to make lines that are an approximation of the contour line. The number of points and the number of lines is essentially a balancing act between best available technology and what is accessible and comfortable for use by the fishermen and what the law enforcement people feel creates enough clarity to them in taking an enforcement action. It's a balancing act.

MR. STREET: Those tweaks I assume come westward into the less than 70 meter depth.

DR. REED: That's correct. I don't know if I can project this ArcGIS to here or not. There were three along the 70 meter line, which was Alternative 2C. Roger and the Coral AP drew it with points and poly lines. Where that line was definitely encroaching into high-relief features, we moved it off the high-relief feature.

MR. STREET: To the west?

DR. REED: To the west for the western border.

MR. STREET: Just 50 meters laterally?

DR. REED: Right, on that scale to get it off that feature.

MR. WILBUR: John has showed me while I was just looking over his shoulder the new polygon that hopefully we can display. If the numbers that we've heard kind of thrown around real quickly are in fact the true numbers of the area; the difference between that and Alternative 2C is 50 square miles.

Keep in mind I'm an ecologist without a calculator. That is roughly the midpoint between Alternatives 2A and 2B in terms of square miles. Alternative 2A is what the Coral AP proposed and later on endorsed by the Habitat AP, and 2B is what the Shrimp AP proposed. The number we are hearing for the modification to Alternative 2C is roughly in the middle of those two.

MS. MARTIN: Okay, here we have the new scenario that resulted from the recommendation that came out of the joint advisory panel meeting. Now this has not yet been vetted through the Deepwater Shrimp AP. Once again Mike pointed out once we have all of the coordinates and can double check the coordinates that we have in the table there, that will be something that they can then look at and overlay with their trawl track data. This is the new alternative. I'm not sure if the Habitat AP wants to talk about this area. We also have Alternative 2C that I can project, which is what the recommendation for this redrawn area was based off of.

MR. MIKELL: Can you put 2E on top of 2C?

MS. MARTIN: We can't now, and that is something you'll see in the Options Paper we've been able to do before with some of the areas that have been previously discussed at the recent AP meeting and the spring advisory panel meetings. Because this was something that was just developed, at your next session we'll be able to have that in addition to the completed VMS dataset. It is a work in progress. What we can show now is just what Roger and John have been able to sit down and come up with based off of that motion that was made during that joint meeting with the Deepwater Shrimp AP and the Coral AP.

MR. MIKELL: Would it simplify anything if I amended my motion?

MR. WILBUR: That's how you amend it, Jenks.

MR. MIKELL: John, are you and Roger in agreement on 2E?

DR. REED: Yes.

MR. MERRIFIELD: I just got it last night in the airport and have not had a chance to review it.

MR. MIKELL: I've got it. **I would like to amend the motion to say 2E as opposed to 2C.**

AP MEMBER: I second.

MR. WILBUR: Let's continue discussion. Go ahead, Mike.

MR. STREET: Will it be possible before this meeting is over to see it real good? When it was up there briefly, the green line disappeared to me. Can we have it say red line or something? Is it possible to see where those tweaks are? It sounds like we're reaching agreement. Mike needs to take a closer look at it, but I'm thinking if we have to wait until tomorrow to see it well so that Mike can have time to look it over, or this afternoon, however it can be done, that might make it cleaner, for want of a better term.

MR. WILBUR: Okay, we're going to see if John Reed's computer can be fed into this, because he has a little bit more flexible software and has the various lines available to him.

MR. MERRIFIELD: There are 21 points in that option, and I can probably have those in about 15 minutes and display them up on the chart that I have, if you want me to go ahead and try to do that. Actually the chart I have has basically all the different options that have been presented.

There are about four options on it right now, and then this would just be another one on top of that.

MR. STREET: We're scheduled for a break in about ten minutes. Why don't we go ahead and take the break now while they do that.

MR. WILBUR: I think that is a very good suggestion.

MR. WILBUR: Let's see if we can kind of deal with the computer glitches and come back in like ten minutes and hopefully it will work. Mike, if you're willing to try, I think it would be good. At this point I think we have to investigate multiple alternatives to getting it up on the screen and see. The other option too is in theory all of you guys have this in your e-mail. It was sent yesterday. Does everyone have a computer or are adjacent to someone who has a computer that they could actually display it right now and you can kind of look over each other's shoulders?

MR. WAUGH: We can project it. We can't change the color that it is, but people can get up and walk up to the screen up close and personal if they want to.

MR. WILBUR: I don't know if you can do this with what was sent, but can you put up more than one line at the same time? That is what John can do.

DR. REED: I can show all the alternatives with the points, with the poly line, with the background data. I can't zoom in on that one for some reason.

MR. WILBUR: Ten minutes; we're going to work on some computer stuff. We've just got to find the way out of the woods.

(Whereupon, a recess was taken.)

MR. WILBUR: **The motion on the table is approval of Alternative 2E. That motion has been seconded. Is there any further discussion of that motion? Seeing no raised hands, we will not have further discussion of that motion and we will go to a vote for Alternative 2E. Now, all in favor of the Habitat Advisory Panel recommending to the council Alternative 2E for the public scoping process, please say Aye. Any opposed? I heard no opposition so that is what the Habitat AP will recommend to the council.** Thank you, Jenks, for an excellent motion. The next one is the western boundary, right?

MS. MARTIN: Yes, the first range of subalternatives under Action 1 dealt specifically with the northern extension and scenarios there. What we'll carry forward to the council is your recommendation for this new scenario that the council members themselves haven't yet seen. Next under Action 1, Alternative 3 deals specifically with the proposed western extension of the Oculina Bank HAPC.

This kind of carries over from when John was talking about as far as the research they've been able to conduct in this area. The Coral AP did base their proposed recommendation off of – you can see here the multibeam bathymetry indicating the high-relief features there. This extension lies primarily within the two existing satellite sites. Those are the areas outlined in yellow there.

That is part of the existing HAPC. The blue polygon on the screen is the proposed recommendation for extending the western boundary, kind of encapsulating the area between the satellite sites and carrying a little further south. The points that are a little hard to depict, but they are in the Options Paper – hopefully you are able to see that on your computer screens, but that indicates the VMS points and the fishing activity that is taking place within this proposed extension of the western boundary. This is coming from the Coral Advisory Panel.

I believe the Habitat AP talked about it minimally during your webinar; and the Deepwater Shrimp AP, during the joint meeting with the Coral Advisory Panel, did not have a specific recommendation for this proposed extension other than interest in possibly looking at some modifications down the road.

As we get into the spring AP meetings and the public hearing process for this amendment, they may come forward with a recommendation for a modification here, but we don't have one now. What we have here is Alternative 3 that has already been endorsed by the Coral AP and the Habitat AP. That is PDF Page 9 in Attachment 10; Alternative 3, Figure 5.

MR. WILBUR: Just to clarify I think a little bit; in May the Habitat Advisory Panel did endorse Alternative 3 as indicated in the legend of the figure that is up on the table. As Anna said, in October the Coral Advisory Panel expressed some concerns about Alternative 3 and was given the homework assignment of suggesting an alternative to Alternative 3, which we haven't seen. It hasn't been developed, right?

MS. MARTIN: No. They may have something in mind, but that is not something in the document right now. The Deepwater Shrimp Advisory Panel has suggested an interest in coming forward with a recommendation perhaps at a future time. They haven't yet done that. What we have now is just one scenario for expansion of the western boundary.

MR. WILBUR: What I'm hearing on the right side of me from Dr. Reed is that Roger actually has drawn an alternative for Alternative 3.

DR. REED: It is my understanding that the Coral AP agreed and voted on what that poly line is there – what do you call that; does that have a number?

MR. WILBUR: Alternative 3.

DR. REED: The West Extension 3B, right?

MS. MARTIN: Right; it is Alternative 3 under Action 1 and Figure 5.

DR. REED: The Coral AP agreed on that and voted on that. That was essentially closing in the straight line between the two satellite areas. That area was also that I spoke about in my talk this morning that was reviewed by Harter, where we had additional multibeam data and ROV data to verify what we knew was there. Again, it could be redrawn to kind of tweak around obvious features and pull it in accordingly. It would be very minor I think, like the north extension.

MR. WILBUR: There seems to be some lack of clarity on whether there is an alternative option here for Alternative 3.

DR. REED: Roger did draw one.

MR. WAUGH: I'll check with Roger, he's following on, but Anna and I don't know of another alternative to this 3. This is in your document on Page 4. This shows what Alternative 3 is and what your current position is.

MR. WILBUR: Okay, at this point, since we as the Habitat AP back in May weighed in on Alternative 3, the floor is open basically for a move to reconsider that option. If there is no move to reconsider the option that we already endorsed, then the discussion on Alternative 3 is closed.

MR. MIKELL: Why did we cut it off the southern boundary where we did when we squared it up?

DR. REED: If you can kind of look in there, you see right above that line obvious high-relief features. That was the end of the obvious high-relief features, where that line was drawn across. It could have been just straightened out at an angle, but that is why it was cut there.

DR. KELLISON: What was the concern of the Coral AP in trying to revise?

DR. REED: The Coral AP had no concern. We drew that original line based on the habitat data and available data. We had no reason to redraw it based on coral.

DR. KELLISON: Was there not just discussion though of a new line being drawn that has yet to reach paper?

DR. REED: At the same time that Roger drew the northern 2E that we just discussed also drew a slight notch just below that southern satellite, which was where historical shrimp data that Mike had provided showed there was trawling in there. We tried to cut it in right in there. Right in there, we drew a notch for the shrimp data.

DR. KELLISON: Is that the reason that we're potentially reconsidering what our previous recommendation was?

DR. REED: Well, the Coral AP agreed on 2C there, what you see based there coral habitat.

MS. MARTIN: Okay, let me just clarify. I think the rendition that Roger has – and unfortunately we don't have that here to show – it is perhaps preliminary in that the motion that the Deepwater Shrimp Advisory Panel passed and was interested in is in the future coming forward with a recommendation to tweak some of those areas.

That is the specific notch there that John was pointing out. If that happens, then John has assisted in developing a potential scenario that would incorporate some of those concerns when they would be forthcoming. It's preliminary and not something that we have in the document right now and not something that the council will even look at in December.

DR. KELLISON: We previously made a recommendation on this and have no additional information on which to revise our recommendation, correct?

MS. MARTIN: That's right; this was originally from a meeting that the Coral Advisory Panel – the recommendation that came out of their meeting last year. This is one of the original recommendations that you have already seen.

MR. MERRIFIELD: I just want to ask a question. There is the potential that there will be other alternatives put together on all these different expansions; is that correct?

MS. MARTIN: Sure, this is a fluid document at this stage. The council's intent behind the joint AP meeting was to talk about some possible consensus for some of these areas, which we think we have. Even though they are not yet in the document, they are still kind of in the revision stage. I think that in itself would lend towards an additional range of options that may come out of your next advisory panel meeting.

We haven't gone through the public hearing stage for this yet. What Gregg presented was a little bit of a delayed time line for this just to make sure everyone has an opportunity to weigh in and provide input at the appropriate stage. The alternatives as they are in the document right now are not finite. I don't feel that is what will be in the final amendment.

MR. MERRIFIELD: That's just what I wanted to know; because if there are some other tweaks or some other opportunities that we have to look at this, there may be some other options; there might be an F or a G or whatever that might follow on or hopefully we can start reducing these down to a number, because there are a lot of options out here that really we need to get rid of.

MS. MARTIN: Right, and that is one of our intentions behind presenting this, the alternatives we have now, at the December council meeting; let's suggest parsing out some of the alternatives that are in there now that none of the advisory panels are specifically interested in further pursuing.

MR. MERRIFIELD: I guess this will be for the December meeting, but I would think that it would be a good thing to say can we get some real and some final options out on the table for everybody to look at. We keep adding options. I just think somehow we've got to start getting to something that we've all seen and we can say this is what we want to stand behind.

MS. MARTIN: I think that's the hard part about this process, but hopefully we will get there with all of the APs' support.

MR. WAUGH: That's what we indicated at the start that we're asking the council to do in December, to go over all the recommendations. They have yet to look at this in detail from the scoping. What we hope to get from them at the December meeting is here is a list of alternatives that we want analyzed in detail and those will be the alternatives that are in the document.

MR. MERRIFIELD: Plus the opportunity for new ones.

MR. WAUGH: Well, there is always the opportunity for new ones; but unless we want to stay in a do-loop and keep working on this for the next several years, then it has got to reach some conclusion. Typically the process is that what they tell us in December will be analyzed. That will be presented to all of the APs in one form or another, and then by June they will tell us what alternatives to take out to public hearing.

They'll look at it in March as well, but they need to wrap up what alternatives they want to go out to public hearing. There is always the opportunity to revisit this again in the future. But if we intend to bring this to some sort of conclusion next year, then we need to approve it for public hearings in June.

MR. MERRIFIELD: No, I think some of the things I just saw – that some of the changes they just came up with are probably fine, but I just kind of get thrown for a loop when it gets thrown at you right away. I just want to make sure it is not a finite set at this point, because we might be able to come to some terms on a lot of the stuff and avoid a lot of all these different options that we've got here on the table right now. I think we could really probably consolidate it down if we all sat down and worked it out.

DR. REED: Just from the Coral AP perspective; I think we as the Coral AP agreed on the Alternative 2E, which was tweaking 2C. Coral AP would agree with the 2E that we all looked at and Habitat voted on and agreed on. As far as the western extension, the Coral AP proposed that and there is no new data to suggest otherwise, so I say the Coral AP still approves this polygon that you see right there.

MR. WILBUR: Is there any further discussion from the Habitat AP on Alternative 3, which we have already endorsed back in May? Seeing none, I think we can now close the conversation about Alternative 3. If new information becomes available and the council asks this AP to weigh in on that new information for Alternative 3, we will do what the council asks us to do.

MS. MARTIN: Those are the existing alternatives for the proposed expansion of the Oculina Bank, northern and western. One other thing that will be presented to the council for consideration is a recommendation for an alternative. It is not an existing alternative right now simply because the council hasn't had an opportunity to talk about this.

This is a recommendation that came from the Shrimp and the Deepwater Shrimp Advisory Panel during their meeting last April. The Coral and Deepwater Shrimp also had an opportunity to talk about this. This is a recommendation for developing a fishery access area within the existing HAPC. We're talking about the yellow box, the area that is already the Oculina Bank HAPC.

The rationale from the Shrimp and Deepwater Shrimp AP has been an access area within the existing HAPC in an area where they feel is sand bottom, essentially lacking some of the hard-bottom habitat and the other high-relief features where the oculina is existing, would allow them access to productive shrimp bottom south of the existing HAPC to that which exists north.

We're talking about carving out a corridor within the HAPC. Again, this is a recommendation that they put out on the table. The council hasn't talked about it yet; but during the joint advisory panel meeting with the Coral AP, they did develop a specific recommendation for what such a fishery access area should entail.

Now we don't have a spatial representation for that recommendation, but we do have – this is a very general look at what we're talking about here. The red polygon within the yellow HAPC box is along similar lines to what the Deepwater Shrimp and Shrimp Advisory Panels have come forward with. What the Coral Advisory Panel recommended was consideration of this area in waters deeper than 100 meters.

A few of the scientists – and John can back me up on this – have identified that specifically oculina – we're not talking about any of the other benthic habitat or other habitat affiliations in this area – oculina does not occur in waters deeper than 150 meters. Well, the parameters that the Coral Advisory Panel endorsed during the joint AP meeting was allowing such an access area at depths between 110 and 140 meters.

That is something that will be presented to the council in December. Again, it is not yet an alternative for consideration because the council hasn't had an opportunity to talk about it. Essentially it would allow for fishing to take place within that access area. Now our Law Enforcement Advisory Panel representative that was at the joint AP meeting expressed some concern about allowing an access area within an existing HAPC that carries forward certain gear restrictions.

You can also see part of the recommendation overlaps with the experimental closed area. There are other implications in addition to deepwater coral habitat that the council will have to discuss and deliberate. Obviously, the Snapper Grouper Advisory Panel has not yet been closely involved in these recommendations and so they will have to weigh in on this as well.

The Oculina Experimental Closed Area was put in place under a snapper grouper amendment specifically looking at protections for deepwater snapper grouper species. I guess at this point I don't know if the Habitat AP wants to talk about that recommendation. There is some language for what the Deepwater Shrimp AP has come forward with on PDF Page 12 in the Options Paper. This is kind of the first grouping here of other considerations for the Oculina Bank.

DR. REED: As far as opening up a corridor through the current and long-standing OECA, the original Oculina HAPC, there is no new data to suggest or alter those eastern boundaries.

MR. MERRIFIELD: I'll just clarify something there is that the reason that it has an eastern and a western boundary inside of there is basically because rock shrimp don't occur out deeper than about 140 meters is about the maximum they live. The idea was just to create – the law enforcement didn't like the idea of the corridor, because they don't like the doughnut hole effect is what Otha said about that. He didn't like to have both boundaries.

That is the way we defined it, because that is the area where rock habitat is, is in about that 110 to about 140 meters. That is why we have both an eastern and a western boundary. If it was just from a western boundary at 110 out, that would suffice to be the same thing, because they are not fishing in deeper than 140 meters, anyway. But that was the reasoning behind that.

MR. WILBUR: We can continue to discuss this idea. We can even maybe have a motion that we could send to the council that might influence their decision about whether to take this idea and morph it into an alternative, but there is no alternative on the table right now.

MS. MARTIN: The motion that was passed at the joint Coral and Deepwater Shrimp Advisory Panel was that an alternative would be presented in response to what the Deepwater Shrimp AP recommended during their April meeting earlier this year. For the existing HAPC that evaluates the feasibility of a shrimp fishery access area within the existing HAPC at depths between 110 and 140 meters, so those are the delineations there, 110 to 140 within the existing HAPC. Now

we don't have that specific spatial representation yet. We're waiting until after the council has had an opportunity to talk about this recommendation.

MR. GEER: I have concerns about opening up a doughnut hole in the middle of the HAPC; primarily enforcement would be an issue. It is far out there and enforcement can be tough even with VMS.

MR. STREET: Approximately how wide, east west is that area; I mean one miles, three miles?

DR. REED: What depths were you talking about, 110 to 140?

MR. MERRIFIELD: 110 to 140. It looks to be a mile and a half, two miles; two miles probably.

DR. REED: As I said before, we have no new data or even old data to suggest changing the east border there or to open up a corridor for trawling in that zone and certainly within the OECA. The only new data is that the NOAA DEM chart, digital elevation model, which I have, which shows very probable low relief to moderate relief features in that zone.

MR. MERRIFIELD: Just to clarify on that; the reason this came up was because when the HAPC was first created, it was created in a straight north/south manner, and just a box put over it for easy enforcement. I think at the time they didn't really understand the power of using the VMS as an enforcement tool. It has very well proven itself.

Part of these expansions that we're looking into making now are to realign some of this protected area, so it covers a reef that was missed when it was first created. When it was first created, when they created that box, that went pretty far to the east and took out a lot of the rock shrimp bottom. If you look at the chart – and I'll display this in the back; but if you look at the chart, the tracks come up to the box and stop and at the top of the box they continue on.

At one point in time it was a straight-line fishery that has been interrupted. What we basically were doing was just asking if we are going to realign this to protect this habitat, let's also look at opening up some of it that was maybe taken and could be given back. That was the reasoning behind it.

MR. WAUGH: A question to the Habitat AP; are we no longer concerned about that habitat that is in there such that you all are willing to allow trawling to occur on that habitat? I think that is the question the council would be interested in hearing your expertise on.

MR. STREET: Will it be possible to acquire data on the bottom within the proposed access area insofar as are there or are there not oculina or other features that should be protected?

MS. MARTIN: I was just going to say that is a good question. I know that the data is limited. What John presented was from the Pisces, the June 2011, is that right? The Pisces research was funded from NOAA's Deep Sea Coral Research and Technology Program, where they focused their research and assessments on the South Atlantic for the past few years.

Now that focus ended in 2011. Many of these recent discoveries north and west of the existing HAPC were under the umbrella of that South Atlantic work. They have shifted their resources to

other areas. I can say there probably isn't going to be funding for new work in the Oculina Bank HAPC in the near future, but that is always kind of a tough question. I'll offer that to the discussion.

AP MEMBER: Basically at this point it is more of an exercise of drawing lines on paper. We have no data to support establishing the original HAPC in that area, and we have none to take it off either.

MR. WILBUR: That's your observation. Going back to Gregg's question, do we want to offer an opinion to the council on whether or not a fishery access area crudely approximated by the red line, as displayed on the screen right now, is something worth continuing to pursue and formulating, taking the resources necessary to formulate into an alternative that would get more close scrutiny later on or do we want to simply remain silent on the issue and see if this gains any traction in the council during their December meeting and whether they specifically direct us to answer that question in 2013?

AP MEMBER: I'll recommend silence just because it doesn't seem like we have information to push us one way or the other.

MR. WILBUR: Are you going to phrase that in terms of a motion? You don't have to phrase it as a motion. If there is no motion, there is no motion.

MR. STREET: If there is any action to be taken one way or another, I'd prefer to see it based on data of some sort. For example, are there historical data that productive trawling did occur there? Are people who did trawl there; are there logs of their activity there or anything of that nature, which might indicate hangs or things like that?

MR. WILBUR: I agree.

MR. WAUGH: There is no doubt that area was used as a fishery. When we first looked at extending this, the rock shrimp fishermen brought us charts that showed that they fished right down through the middle of this area. Yes, we can provide you information that shows in the past this area has been fished.

I thought John covered this in his presentation this morning, some of the historical information showing some of the original damage to bottom from various types of trawl gear, including roller rig trawl. That can be provided. I guess what you all are asking for is for you to formulate a recommendation on this you would like to see the underlying habitat information that we have in this proposed shrimp access area and documentation that this was an active fishing area in the past.

MR. WILBUR: Anna, my recollection from the meeting in October was that Clark Alexander noted several times during the meeting that the time was right for some sort of synthesis kind of paper about the Oculina Bank, its historic uses and current condition simply because of the opportunity to incorporate newer studies or newer thoughts about older studies. I thought that idea actually had traction and was even part of a motion, but I did not see it in the list of motions that was included with the advisory panel packet. Amber, you might remember how much traction Clark got with that suggestion during the meeting.

MS. MARTIN: I think that was in context of talking about a fishery access area overlapping with the experimental closed area and what are the provisions behind the experimental closed area. Then we talked about when the council put in the sunset provision for the Oculina Experimental Closed Area, which again is the green box within the existing HAPC, which carries additional prohibitions that the HAPC in entirety doesn't; such as prohibition of possession of snapper grouper species.

When they extended those regulations for the experimental closed area, they did so with the understanding and the mandate essentially that a reevaluation of the experimental closed area would take place every seven years, something to that effect. Well, at any rate the next evaluation for that area comes in 2014.

A report on an assessment of the experimental closed area is forthcoming. That will essentially be based on what is scientifically known to date, how that area has I guess performed essentially during the closure. A report will be delivered to the council in 2014. That is specifically talking about the experimental closed area. It is my understanding Clark's comments were in context of consideration of modifying the experimental closed area.

MR. WILBUR: Given the overlap between the green box up there, the experimental closed area, and the rough depiction of the fishery access area in the red polygon, it's, what, 40 percent or so overlaps, maybe; so would not that report that is due to the council in 2014 provide an opportunity to answer some of the questions that Mike has proposed as being relevant to the discussion about a fishery access area? Then it is just a matter of directing whoever it is who is preparing that report to think broadly about these other issues.

DR. REED: Unfortunately, since the last report was done, there was a full report done in 2007, and this is more about the OECA closure to bottom fishing, hook and line for grouper snapper, which was originally done in 1994, I believe, because of the complete decimation of the breeding populations of grouper, primarily gag and scamp grouper.

Seventies and eighties, early eighties, each reef literally had hundreds if not thousands of fish on them. By the late eighties primarily from hook-and-line overfishing, both commercial and recreational, it was down to almost zero. We're seeing that come back. In 2006 when the Coral AP had a complete thorough review of all of these available data was completed; since then there has been no new data out there.

The biggest problem the council has is this OECA, which is trying to protect that fishery and let it rebound, let especially the grouper come back and get to breeding populations. There is still a lot of poaching going on. I can go out there most anytime and see people poaching, fishing on the bottom. It's a big problem.

It is hard to get good data to say, okay, here is a closed area. This is how many fish are in it now compared to before. Basically nobody is collecting data anymore. There is no funding for it. There has been no funding to do any fishery-related research within that OECA since early 2000, when we did some ROV and submersible surveys. There has been nothing done since 2007, so there is not going to be much in the new report to offer that as far as the fish, unfortunately, and there is no funding on the horizon.

MR. WATTERSON: I was curious. Obviously, I wasn't involved in the process back when this original Coral HAPC was established. Knowing that there was fishing going on in that area, I would assume at the time when the established this HAPC they had very good rationale for placing this polygon where it is. Do we happen to know what that was at the time or what it was based on?

DR. REED: Actually just like now, there were several options placed. The original proposal was submitted to the council in 1981. The first option actually covered the entire area up to north of Canaveral and to the west to over those satellite zones. It had that closed in as Option 1. For various reasons, this Option 3 was selected, the southern area, which only saved a third of the area. Unfortunately, Option 1 wasn't picked, which would have protected it back in 1984.

MR. WATTERSON: Do you know how the east and west boundaries were picked?

DR. REED: Based on mostly from research at that time, submersible research.

MR. MERRIFIELD: I believe, too, there were some law enforcement issues at the time. They wanted straight lines and preferably north/south straight lines in square boxes for enforcement purposes. I think that using the VMS has proven – because if you look at like the lophelia coral, it has got 220 points and is very zigzagged. That 24,000 square mile area has a lot of very intricate lines to it. I think they found with VMS you get a little more flexibility in how you create these borders than they did at that time. There were a lot of thoughts at that time that it needed to be square and straight.

MS. COOKSEY: I just wanted to throw something in the pot for consideration. Oculina Banks was one of the areas where we did find low but a detectable level of persistent organic pollutants, and the consideration of what trawling activities with associated sediment reef suspension would mean in the middle of your protected area.

MR. WILBUR: Okay, it is 12:45; we desperately need a lunch break, Jenks.

MR. MIKELL: I'll be brief. If I'm not mistaken, it took us three or four years of our committee and the coral committee to even come up with something like that. I'd hate to see us throw it away today when it is going to be reviewed in 2014 anyhow. I'd like to see it left alone until that time. If I need to make a motion, I'll do it.

MR. WILBUR: It is up to you. If you wish to make a motion on that point, we are all ears.

MR. MIKELL: Well let's vote on it; I make a motion.

MR. WILBUR: It's been seconded by Mr. Jones. Okay, the motion is to not create a fishery access area until at least 2014.

MR. MIKELL: That's correct.

MR. STREET: You mean until 2014 or until after the reassessment of the area in 2014?

MR. MIKELL: The latter, after the reassessment.

MR. WILBUR: All right, the language for that will be cleaned up.

MR. MIKELL: Call for the question and let's eat.

MR. WILBUR: All right, any further discussion? All in favor of the motion say aye; all opposed. **Seeing no one opposed, it is approved by the Habitat AP.** We'll reconvene at two o'clock. Thank you.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Charleston Marriott Hotel, Charleston, South Carolina, Wednesday afternoon, November 14, 2012, and was called to order at 2:00 o'clock p.m. by Chairman Pace Wilbur.

MR. WILBUR: (Recording started here) – we need to go through, so, Anna, it's all yours.

MS. MARTIN: We have a few more actions to talk about with Coral Amendment 7. I just want to remind you that the table talking about the VMS analysis there and fishery impacts associated with each of those alternatives; that is what you will see again and that will be updated once we have the complete VMS data set from the earlier years once that data has been processed.

The next rendition of this document will have the new alternative after the council has an opportunity to talk about it, that 2E, and the percentages fishery impacts associated with that scenario too. It is just worth pointing that out. This table that is in the Options Paper you will likely see again with some updated figures.

Option 2; this will be Action 2 in the document. This is another issue that pertains to the Oculina Bank HAPC. It's something that has come forward from the Shrimp and the Deepwater Shrimp Advisory Panels. This was taken out for public scoping. The council has approved this for including in the amendment. This considers a transit provision through the Oculina Bank HAPC.

As you're aware, currently vessels cannot motor through the HAPC with possession of rock shrimp on board, so that is one of the current prohibitions for the Oculina Bank HAPC. The issue here is with a northern extension, which is what we talked about this morning. There is some concern about that prohibition of rock shrimp possession and the vessels realistically being able to travel the entire length of a northern extension to access those areas where they are currently fishing off of the eastern boundary.

The council here is considering a transit provision to allow these vessels fishing off of the eastern boundary that is not within the HAPC to be able to possess rock shrimp on board their vessel while transiting back through the HAPC to get back to areas off of the western boundary. We did present this at the joint Deepwater Shrimp and Coral Advisory Panel. Both of the groups actually came forward with a recommendation for what that transit provision should entail.

What you see here identified as Alternative 2 is language that came from the Law Enforcement Advisory Panel during their meeting last spring. Essentially that would allow for transit through the Oculina Bank HAPC, and it references existing transit provisions that pertain to the marine protected area.

The Law Enforcement Advisory Panel had previously recommended that a new transit provision for the Oculina Bank mirror transit provisions that are already in place. The provision that the Law Enforcement Advisory Panel suggested was what is here; a trawler try net may remain on deck, but trawl doors must be disconnected from such net and must be secured.

An update to this alternative, what was presented and came out of the joint advisory panel meeting – it is not in the Options Paper, but it will be presented to the council in December – was kind of some clarification for that alternative and what it should state. Essentially industry representatives on the Deepwater Shrimp AP talked about what it means to disconnect their try nets and the trawl doors. It is a very cumbersome process. It entails a good bit of time.

It is very heavy equipment and there are some safety issues that should be taken into consideration if the council were to proceed with what is already identified under Alternative 2. The motion that came from the joint AP meeting in October; a transit provision would allow vessels to cross through the Oculina Bank HAPC with rock shrimp on board at a speed of not less than six knots determined by ping rate acceptable by law enforcement.

Otha Easley was at the meeting and we had some discussion about increasing the frequency of ping rates. What's included in that recommendation is a five-minute ping rate while transiting through the HAPC, and also with gear which is defined as doors and nets out of the water, with a call-in provision in case of mechanical failure or emergency. This recommendation pertains to the entire Oculina Bank HAPC.

This was approved by both the Coral and the Deepwater Shrimp AP. Again, it is not in your Options Paper but it is in Attachment 11 in your briefing materials. I guess at this point I would open it up to the AP. If you have any discussion you would like to have about the transit provision, I guess now would be the time.

MR. GEER: I just have a question about increasing the ping rate to every five minutes. Is that going to be for all the time or just for boats transiting through?

MS. MARTIN: Right now the vessels are pinging hourly. The provision that is recommended by the Deepwater Shrimp AP and that the Coral AP also supported would be the increase would occur once inside of the HAPC. Mike, perhaps you can clarify this. All of the vessels, as you know, are required to carry that VMS technology. It is something that the VMS technology can accommodate.

MR. GEER: Is there an additional cost for that, too?

MR. MERRIFIELD: Yes. Right now at once per hour it is around a $40.00 to $50.00 cost per month. It is like six cents per ping rate currently. I've talked to I believe like four providers that are approved. They both have mechanisms for setting up a zone or a boundary within which the ping rate would automatically increase. That is what we're kind of moving towards trying to access and define what that technology is to be able to accomplish that.

MR. WILBUR: Any further discussion of the transit provisions? Seeing none, move on to the next part.

MR. WATTERSON: Just a quick point of clarification; the Coral AP actually not so much supported it as they didn't object to it. They were very clear about their wording for that.

MS. MARTIN: That's right. If you look at Attachment 11, the motion the Coral AP made in this discussion came up at the joint meeting was that the Coral AP has no objection to the transit alternative provision developed by the Deepwater Shrimp AP. Thank you for clarifying that, Carter.

Okay moving on to Action 3 in the Options Paper, this is PDF Page 18, here we are talking about modifying the boundaries of the Stetson-Miami Terrace Coral HAPC. This is a little further offshore than the Oculina Bank; and the fishery impacts here, we are talking about the royal red fishery. Oculina was specific to rock shrimp.

That just kind of put it all into perspective here. Again, this is a recommendation for modifying the western boundary of the Stetson-Miami Terrace Coral HAPC, bounded approximately by the 200 meter depth contour. This is something that came from the Coral Advisory Panel last year. Again, it is part of the research that the umbrella of NOAAs Deep Sea Coral Research and Technology Program where they focused their efforts in the South Atlantic for the past few years, and some additional surveys that were done where observations of a shallow water lophelia ecosystem occur. This was a new observation.

That observation was the impetus behind the Coral Advisory Panel making this recommendation last year. What you see identified under Alternative 2 was what was taken out for public scoping. I believe this was already reviewed with the Habitat AP during your webinar earlier this year. What has occurred since that time have been a couple of different renditions of Alternative 2.

Alternative 3 in the document is one that likely is now obsolete and so we'll have to have this discussion with the council in December. Alternative 2 was developed after the public scoping meetings when representatives from the Deepwater Shrimp AP attended these meetings and expressed some concerns about impacts; based on the VMS data, impacts that they would experience within the Coral Advisory Panel's recommendation under Alternative 2.

I'll show you those spatially here what we're talking about. This is Figure 9 in the Options Paper. This was the original recommendation from the Coral Advisory Panel. I believe the next chart will show you the specific area of the mapping data that we have. I believe the Navy was involved in providing some of this data. This was the original recommendation and it extends the western boundary by this 200 meter depth contour here.

It does overlap the North Florida marine protected area and shrimp fishery access Area 1. As a result of that presentation of that area during the public scoping meetings, Alternative 3 was developed. That is what this Figure 10 depicts. This is the revised Coral Advisory Panel recommendation. You can see the red dots there in the southern portion of the boundary.

Those are processed VMS points indicating where fishery activity for royal red fishing is occurring in this area adjacent to the existing HAPC. An alternative was developed to essentially carve out areas they have been operating based on the VMS data at hand. You can also see the multibeam bathymetry that was provided that we have here, showing the area that they've been

able to go out there and map. That is the basis for the Coral Advisory Panel's recommendation for extending this boundary westward.

What came of the joint Coral and Deepwater Shrimp Advisory Panel meeting in October is another new rendition, and we have that here. This will be presented to the council in December. They haven't yet had a chance to review this. At the joint advisory panel meeting, the motion that was passed by the Coral Advisory Panel was to modify the southeastern boundary of the Stetson-Miami Terrace HAPC Extension in a manner that would release the flat bottom region to the extent possible while maintaining protection of coral habitat.

That is what this redrawn version of Alternative 2 has been able to do. It incorporates the area of mapped habitat and the probable extent of habitat based on the bathymetry, while excluding a majority of the VMS points and known fishing activity. This here, the modification was along this line here.

The Deepwater Shrimp Advisory Panel representatives were specifically talking about this area being flat, sandy bottom. The new scenario that will be presented to the council in December is this one here, which is a revision of Alternative 2. Both the Deepwater Shrimp and the Coral Advisory Panel were in agreement of this approach.

This was a motion made by the Coral AP as a result of the discussion from the Deepwater Shrimp AP about that sandy bottom area in the southern zone.

(Remark made but was not recorded.)

MS. MARTIN: It's not, and that in addition to the northern Oculina, the 2E, those were what were circulated around. It was e-mailed by Roger to you all yesterday. Again, this is something that was recently developed. It hasn't been incorporated into the documents quite yet. It will be included in the documents that the council will review at their December meeting. Again, it is a revision of – based on the outcomes of the joint AP meeting in October, it is a revision of the Option 3, Alternative 2.

MR. MIKELL: Are you presenting this because you want us to act on it or is it for information only?

MS. MARTIN: Either/or. Obviously, as council staff, we are here to talk about what all are in these developing amendments. Previously the Habitat Advisory Panel endorsed the Coral AP recommendation, which was Alternative 2 as it currently stands in the document. It is up to you. If you would like to weigh in on this newly defined revision here, then I think now is the time for that.

What Gregg presented earlier was something the council will talk about as far as timing and having the advisory panels meet again in the spring to further comment on these specific areas once they are alternatives in the document. I suppose it is up to you if you would like to weigh in.

MR. MIKELL**: Well, if the council is going to look at it next month, I think we probably ought to piggyback on top of the Coral Panel and endorse what they want to do. I so move.**

MR. WILBUR: Thank you, Jenks; is there a second? We're going to get the wording exactly. Mr. Jones is seconding. Just for the discussion, this is sort of my take on where we're at. Back in May we followed the Coral AP's lead and adopted a slightly different version of the line than what we just saw on the screen. Since then a subgroup of folks have met to develop the new line that we just saw.

I don't know if it fair to say that that new line is the Coral AP's line or not, because that line is less than a week old. I don't even know if it's been e-mailed to the Coral AP broadly as it was e-mailed to us yesterday. The question I guess is do we take back our endorsement that we made in May for a different line and then make not endorsement now or do we endorse this line? Am I confusing you, Jenks?

MR. MIKELL: No, but I thought we were discussing it as it was an endorsement by the Coral AP, and now you're saying we're not.

MR. WILBUR: I'm asking for the Coral AP to clarify whether they view that particular line as endorsed by the Coral AP given that the line itself is less than a week old and any coordination with the Coral AP has only been through e-mail, although there was an endorsement of the concept of the line.

MS. MARTIN: That's right, so what the Coral AP did was kind of defer to Steve Ross, who is on our Coral Advisory Panel, for submitting the coordinates and working with Roger to delineate this specific line. What we reviewed during the meeting, we didn't have that GIS capability on site to redraw these areas while everybody was sitting at the table. We did talk about that.

There was a Coral AP endorsement of where that line should be and deferred to Steve to provide that to the council staff, which is what we just show-cased you. In my mind that is a bit of Coral AP endorsement with the understanding that the Coral AP is obviously going to be reviewing these areas again.

MR. MIKELL: Pace, what I don't want to happen is us be discussing this again this time next year.

MR. WILBUR: I agree.

DR. REED: I guess from the Coral AP perspective and as a deepwater coral research scientist, just in the matter of the last few years when the C-HAPC was drawn, the majority of that data was collected since 2000, really since 2002. In the last decade we've discovered more deepwater habitat than anybody had a clue was out there, these deepwater lophelia reefs in this particular instance.

At that time the state of knowledge was that the lophelia coral didn't grow deeper than – most of the west boundary of the C-HAPC is along – what depth is on there – 400 meters for the most part; the state of knowledge just four years ago, three years ago that the coral didn't grow shallower than 400 meters.

The reason this box was redrawn was the discovery of lophelia at a depth of 200 meters, which is why that box was redrawn. It is imperative from the perspective of the Coral AP and I would

think from the Habitat AP is to protect this coral as soon as possible and not later. It is just like the northern extension of the Oculina. We found it, we discovered it, and we've mapped it; let's protect it.

The reason it was redrawn was in deference of where – try to give some more points, the VMS points is the reason it was redrawn. All the MPAs, if we're going to start redrawing all the lines of all the MPAs and national sanctuaries, we're going to have a long, long process. I think that line we pretty much discussed during the AP meeting.

The only reason it was redrawn was for the shrimp. That's the very northern end of the deepwater royal red shrimp fishery. It ends right there. There are only a few hits up in that zone of discussion. The majority of it is south of there. That's why we redrew it, not because of habitat difference.

MR. WATTERSON: Yes, I was just going to point out for those that have access to it, if you look at Attachment 9, the very last page; it actually shows the bathymetry data within that area. You can see there is an area within there of sand silt that juts up in there, which is what the Deepwater Shrimp Advisory Panel still wanted access to. That was the impetus for redrawing those lines. The area they cut out really wasn't protecting any coral habitat.

MS. MARTIN: Right. This slide here, which is PDF Page 22 in Attachment 10, just shows you what John was mentioning. This is the northernmost range of the royal red fishery. The area proposed for expansion west of the boundary is right there. You can see that is the northernmost extent of where the VMS points lie and where they are operating. What was tweaked was to allow more access to those points in there and some of that sandy area.

MR. WILBUR: Okay, the motion on the table is to adopt the line, which is in my mind a half step in front of what was agreed upon in October, which is the direction to develop a line. Now if we're comfortable with endorsing the line, then by all means that is what we can do as a panel. That is the motion that is on the table. Any further discussion about whether we should adopt that line?

AP MEMBER: **Can we modify that to include if the AP agrees with the line – the Coral AP agrees with the line, that we support the line as it is presented in the slide that was done less than two weeks ago?**

MR. WILBUR: I think we can if Jenks will accept that friendly amendment.

MR. MIKELL: When does the Coral AP meet?

MS. MARTIN: Well, it will be next year; we don't know that yet. We'll have to get some guidance from the council. I think the intent of where the Coral AP was going with the motion was they knew where the line was to be drawn. What we needed was the GIS technology that we didn't have at the meeting, but they deferred to Steve Ross for providing those coordinates.

That is what we have been able to obtain and what was circulated to you yesterday. I don't know that your recommendation needs to wait for further endorsement by the Coral AP, because the

Coral AP will be reviewing this again, but essentially this is what they suggested the area be refined as.

MR. WATTERSON: I was just going to ask this is what is going to be presented to the council in December prior to the Coral AP seeing it again, correct?

MS. MARTIN: Correct.

MR. MIKELL: I'm for taking the lead and taking it to the council in December and let the Coral AP follow suit.

MR. WILBUR: Okay, any further discussion? **That's what we're going to call it; adopt new Alternative 4 for Option 3; that's correct? All in favor aye; any opposed? Please note for the record it was unanimous.**

MS. MARTIN: We just have one more area to talk about in the Options Paper. This is a modification to the northern boundary of the Cape Lookout Coral HAPC. This is off of North Carolina. This is the area we are talking about here. This has not been modified since this was taken out for public scoping.

Essentially this lightly shaded green box here is the recommended northern extension of the Cape Lookout HAPC. The inset here is the high-resolution bathymetry that the Coral Advisory Panel based their recommendation off of. They were able to obtain new data that indicated occurrence of lophelia mounds lying north of the existing HAPC boundary.

They felt it was warranted to recommend to the council to expand the northern boundary of the Cape Lookout HAPC. That is what is identified under Alternative 2. That is Figure 13 in the Options Paper. This is something you did review during your previous webinar session and endorsed the Coral Advisory Panel's recommendation here as a preferred.

That simply would incorporate that deepwater lophelia mound that was discovered north of the boundary. Now, we did discuss this at the joint Deepwater Shrimp and Coral AP meeting in October. The Deepwater Shrimp AP did not have comment about this particular area seeing as it doesn't impact any of the deepwater shrimp fisheries in that region. I guess for the Habitat AP, do you have any further discussion about this area that you've already seen and commented on and are you interested in changing your endorsement of Alternative 2?

MR. WILBUR: Seeing no hands raised; I think we can close that discussion.

MS. MARTIN: Well, that takes care of Session 1, the morning session.

MR. WILBUR: Moving on to Session 2, which was another one that Roger was going to lead, we are going to tweak that a little bit.

MR. WAUGH: Yes, John Reed has a short presentation that we can go through. As far as status, we are receiving a presentation from the NMFS Southeast Regional Office at our December meeting, looking at modifying existing MPAs to address speckled hind and Warsaw

grouper. They are going to look at reorienting those existing MPAs to maximize protection for speckled hind and Warsaw.

From that, we will get guidance from the council on how to move forward with what alternatives and with what timing. We'll have some more information for you and a better idea at your next meeting, but that is where we stand right now. Given where we are timing-wise, I'd ask John and you to decide if you feel it is productive to go ahead and have that presentation now. We're not really looking for any recommendations at this stage. The MOU, that is something that you can look at at your next meeting based on what the New England and Mid-Atlantic Councils do. This may be an opportunity to get back on schedule or close to it.

MR. WILBUR: Session 2 is several little unrelated items that at some point in the recent past the council has asked this Habitat AP to either comment on or make sure that we're staying informed about, because the council expects us to provide some serious comments at some time in the future.

Some of these things may not really warrant an action right at the moment, but this is an opportunity for us to gradually assimilate the information from which we will have to make a serious comment on at a later AP. I think it's worth taking advantage of John being here; because, first off, not being a member of the Habitat AP, we don't always get to have him at one of our meetings. I think we should take advantage of this opportunity.

DR. REED: I would just like to start off saying that Roger forced me to do this. No, actually this was supposed to be presented by Andy David, who is with NOAA Fisheries in Pensacola, I believe, and Stacey Harter. This project was funded in part through the NOAA CRCP, the Coral Reef Research Program, and through the South Atlantic Fishery Management Council.

It is part of a three-year grant looking at these shelf-edge MPAs, which are basically mesophotic reef zones or these deepwater reefs, both coral and hard bottom, rocky bottom that occur at the shelf edge at depths of 50 to 150 and even out to 200 meters. This is just summary of that. I'm not a fish biologist.

Andy David did provide a report to the South Atlantic Council regarding his previous research on these shelf-edge MPAs over the last several years primarily from the fishery standpoint. The overall goals for this deepwater coral research and mesophotic reef shelf-edge MPA sites is to characterize the ecosystem, using ROV and multibeam, and providing these data to the council, the NOAA Deep Sea Coral Program, the NOAA Mesophotic Program and NOAA Fisheries, as well as the sanctuaries involved such as the Florida Keys Sanctuaries. This is the region that we're looking at.

I know you can't see up there very well, but there is a series of I believe seven blue polygons up here from North Carolina down to North Florida and even into South Florida off the Florida Keys, which are the shelf-edge MPA sites; 50 to 150 meter depths. Then you have this red polygon, which is the Deepwater Coral HAPC, which was designated by the Secretary of Commerce and NOAA in 2010. This research is in both of those areas.

In particular this report is about two cruises; the cruise we had in 2011 off the Florida Keys, and this was funded by the NOAA Deep Sea Coral Program. We selected sites based on our

previous historical work down there with their submersible, which is part of this grant through the South Atlantic Council to look at these deepwater sites off of Southeast Florida Shelf.

The second dive or the second cruise happened this year, specifically on the shelf-edge MPA sites. The first cruise or expedition that I submitted the cruise report to the council was 2011 on the NOAA ship Nancy Foster off the Florida Keys on this big deep-water terrace. I can't see the plateau, but you have the Florida Keys coming down from Miami.

Where all those dots are is Portales Terrace. It's a deep-water terrace about 200 to 400 meter depth on top and then drops down in the Straits of Florida to a depth of 1,000 meters. Within this terrace you have two protected areas. You have the Deep-Water C-HAPC, that deep-water coral protected area, which is the yellow polygon.

The blue polygon is the Humps MPA, a newly designated MPA that came into existence just a few years ago. Both of these are quite new. From this cruise we did multibeam and ROV. We looked at sites inside of the C-HAPC, inside of the MPA, and this is the first time dives were ever made inside of this MPA site – this is all new data – and few sites outside of both protected areas.

In total in this cruise we covered about 400 square kilometers with multibeam sonar. Again, although we call it high resolution, it is like 5 to 10 meter resolution. You are not picking up things the size of this room, but it is better than what we had before. We covered 16 kilometers of ROV transects and video tapes and mock nest trawls and CTD.

This is one example of one site where we discovered a deep-water lophelia reef that we had no idea was there. This is the southernmost lophelia reef known in U.S. waters. They weren't known south of Miami before this. It shows up as a minor bump in the multibeam. It is 48 meters tall, so it is a large feature, and it is covered with these thickets of lophelia.

The coral itself grows to about a meter high, about three feet tall, and grows in hedgerows on the current facing part of the reef, on top of the reef and the south facing part that is into the current. You have black coral. That picture there is about six feet across. You have black coral, snowy groupers. This site here was actually outside of the HAPC called Jordan's Site F.

This is off Key West. It is outside of both the MPA and C-HAPC. What we are trying to do with these cruises are compare sites inside and outside of the HAPCs adjacent, inside and outside to get both data, both of the habitat and fisheries. Within this coral and reef habitat, we see commercially fished species such as the golden crab that lives directly in the coral, as well as sponge species that are being actively looked at for potential anti-cancer compounds.

The sponge on the lower right in the lab, it is being worked up at Harbor Branch Oceanographic, has very potent, the most potent anti-pancreatic cancer compounds yet discovered, which would be an amazing discovery. This is another site within the HAPC called Alligator Mound. This is a hard-bottom habitat with very low relief, a lot of Stylaster coral and sponges, various fish.

We will be working up analysis of the photos and the video transects, quantitative analysis of the cover of the habitat, the dominant species, coral sponges and so forth. The fish analysis is being worked up by NOAA Fisheries, Stacey Harter and Andy David; basically using the ROV video,

dividing up the transects into five-minute intervals where they counted all the fish and calculated the cover or the density of the fish.

There were nine commercially fished species observed; snowy grouper, what's called the slimehead or roughy, tilefish, snapper, porgies, amberjack and barrel fish. This is just the densities of some of these species within and outside of the MPAs. What she is going to be doing is comparing sites inside of the MPA and adjacent to it.

Of course, this is very early data. These were just enacted as protected areas a couple years ago. There certainly is not going to be any – this is just background data for all these sites. We do see differences such as the snowy grouper here, the queen snapper. There are more within the MPA. The blue tilefish were within the C-HAPC and the roughy also higher densities within the MPA site.

Other work from this cruise was looking at biodiversity. We're looking at the diversity of sponges and corals and looking at the genetics of these as well as the coral health. We've come up with about 100 species of invertebrates, 60 species of fish. We also did mock nest trawls. A mock nest is where you sample from the surface to near the bottom and you have a series of nets.

They are fishing each level about half a dozen levels from top to bottom, trying to figure out your understanding the trophic level and the trophic structure of these deep water reefs; what are the corals and the invertebrates living on the bottom eating? For the most part, it is this plankton falling out of the Gulf Stream. This work will be in new data for this type of research.

From this cruise we covered about 7 percent of Portales Terrace was mapped with multibeam. We covered about 0.001 percent with ROV. It's ripe for more exploration. The second cruise, this is kind of a spinoff of all of these deep-water cruises. This is a paper that is coming out showing the distribution of these deep-water habitats.

This is not the Oculina but deep-water lophelia and so forth from the Carolinas to the Keys. You see there is this wide expanse of lophelia coral, and even off Cuba and the Bahamas. The result of this research was the C-HAPC in 2010. The habitats provide essential fish habitat, as well as this habitat for the golden crab and so forth.

About 70 percent of the deep sea coral habitat off Florida has been protected as the C-HAPC. About 30 percent remains unprotected at this point. The next cruise;, this happened this summer, part of the NOAA CRCP Grant looking specifically at the MPA sites. This is North Carolina to North Florida, the seven new MPA sites where we did ROV transects. Each ROV transect was about four hours where we took downward photos as well as video and CTD and multibeam. We had 37 ROV dives, 4,000 photographs, and covered about 200 square kilometers of bathymetry with the sonar. There are many targeted reef fish species in the MPAs including snowy grouper, speckled hind, blueline tilefish and Warsaw grouper.

Unfortunately, we also saw over a thousand lionfish. All the way up and down the coast we are seeing lionfish from 50 meters to 150 meters, 200 meters. They are out in the sand. They are on the reef. Unfortunately, they are everywhere. The big worry is they are eating machines and reproducing machines. It is going to be impossible to get rid of them at this point.

This cruise report was submitted to the South Atlantic Council. These are just the two different cruise reports. There is a separate report that Andy David supplied the council, which I will not go into here, but his six-year evaluation of these MPA sites also has further details of the fish populations and fishery aspects of these deep-water MPA sites.

In conclusion, these very new sonar maps and groundtruthing by ROV dives has provided a lot of new data for both the MPA sites off the Southeastern United States, as well as the deep-water coral HAPC and the Oculina HAPC. These data are certainly important for managers, scientists, the council and NOAA Fisheries.

I think the discovery of that 200 meter lophelia site; the new Oculina sites, as well as the southernmost lophelia site are incredible discoveries in this day and age; that we can go out in the year 2012 and discover new things right out in our backdoor here. In fact that new southernmost lophelia reef was at a depth of 180 meters.

That was over half of what we thought three years ago. We thought it grew to 400. Now we know it occurs as shallow as 180 meters. Certainly in the Portales Terrace area there are regions of extensive essential fish habitat, coral sponge habitat both inside and outside the C-HAPC. These regions should be priority for future research.

MR. WILBUR: Are there any questions for John? I'll ask one short one, hopefully. I'm asking you to forecast the behavior of others, which I know is an impossible task. Do you feel this is all sort of headed toward another large round of HAPC designations?

DR. REED: No, I don't. Right now those cruises and that research; the funded research was trying to provide the council and NOAA information about these new HAPCs and the MPA. Basically these are the first times anybody has been underwater and seen these sites. It is good data, new data.

We knew there was habitat there from the fisheries and that is why the boxes were drawn to protect the habitat and give some areas protection for spawning aggregations for a variety of species. This is just providing that data to the council. This is what we do know is there. I don't see any changes right now.

MR. WILBUR: Just your guestimate; how long before these things morph from cruise reports into peer-reviewed papers?

DR. REED: That is difficult. Right now it's a two step; the cruise reports are two step. The first step was like that 700 page report I gave you, 700 pages of data and research from – I believe that was from the 2012 cruise that we had in July providing a heck of a lot of data. From that we are going to be spending the next year or so quantifying that data, looking at the photos, the video and actually making quantified analysis, percent cover of coral, sponges and the densities of the fish, which is very, very time consuming.

In itself that will be what's called a NOAA Sea Desk 2 report. That is what they require; what NOAA requires the deep sea coral program for what we provide them. That's what they want. It is a dive-by-dive analysis of the habitat, the fauna, and the fish. Then publishing it will be further down the road.

MR. MIKELL: Marine protected areas; are they no fish zones or no bottom fishing zones?

DR. REED: As far as the shelf-edge MPA sites, I believe – maybe Anna knows better.

MR. WAUGH: It's no bottom fishing. You can pelagic fish in those areas.

DR. KELLISON: There are a number of different methods of classifying these deep-water MPAs. Some are totally restrictive; others, as Gregg pointed out, allow trolling for pelagics and so forth. But the one that we are talking about the East Hump Deepwater Marine Protected Area allows for pelagic fishing.

MR. KELLY: I would get into a discussion of lionfish, but I believe that may be taken up at another time later in the meeting; is that correct?

MR. WILBUR: Yes, we're going to talk about policy statements tomorrow morning. Invasive species will be a good place to bring that discussion up. There will also be a sort of general open session tomorrow as well to close the meeting where that could come up as well. You have at least two options.

MR. KELLY: Our experience in the trap fishing industry, particularly in deep water, reflects exactly what John just said; extensive amount of lionfish present in the Florida Keys and up both coasts. There may be some opportunities to be aggressive in capturing them in some trap methods that I would be willing to discuss.

MR. WILBUR: Okay, moving on, this morning we talked about just tweaking the agenda a little bit to move the discussion slated for tomorrow morning to this afternoon. The kickoff for that is a simple one slide. Unfortunately, it is a little truncated on the left, but you know that is how it goes sometimes.

The general question is what does the Habitat Panel want to work on in the next year, two, three year's kind of a timeframe? In my kind of take on how we've gotten to the current day is several years ago the panel was pretty much immersed in developing certain components of what eventually became the fishery ecosystem plan.

That consumed a fair amount of panel time and it also consumed an amount of resources in between meetings. With the completion of the FEP and its publication in 2009, we've kind of gone through this little cathartic kind of respite a little bit. We've been responding directly to requests from the council, which I list up there as an external driver. Our internal stuff has kind of been a little bit here a little bit there, but not really part of any focused kind of plan.

One of the things that Roger and I would like to do is see if the panel is ready to come up with some panel-driven objectives for what it wants to do. In coming up with a set of objectives that the panel would pursue, we need to keep an eye first on workload between meetings, the expertise of the panel and the staff and also keeping in mind that about half of our time as a planning tool would be responding directly to requests from the council to help them prepare for council meetings.

This kind of like who are we and what are we all about kind of question; for the few people that are on this panel that are also on the Atlantic States Commission Habitat Committee, know that that committee has just gone through the same exercise, too. Roger and I will be real interested to hear from the panel members what it is they think the panel should be doing.

There are no constraints on this discussion. It can be pretty different from what we've done in the past. It can be very congruent with what we've done in the past. This is really just sort of a brainstorming kind of exercise. Are there any ideas?

MR. MIKELL: What aquaculture is being done in the southeast?

MR. WILBUR: I saw the aquaculture numbers several years ago, but my understanding is it is a dwindling industry in the southeast.

DR. WHITTLE: I know Florida is having a pretty big push with our sister agency. They are trying to put together fish hatcheries. I know of several different avenues that they are trying to put more fish hatcheries out there.

MR. MIKELL: Inshore of offshore?

DR. WHITTLE: Inshore.

MR. MERRIFIELD: There was a news article last week about a farm going in Fellsmere, Florida; a shrimp farm going in Fellsmere, Florida, with a lot of foreign investment money. I don't know where it is at in the planning stages, but it is out there.

MR. MIKELL: I could be wrong, but the only one that I know of that has been semi-successful in South Carolina is way inland in those freshwater ponds. I think most of the shrimp farms on the coast have gone.

MR. WILBUR: You know that old story about how housing developments are named after what was wiped out to build it. I've noticed that there are some names of some condo developments on the coast in South Carolina that are named after the aquaculture facility that used to be on that line. Actually in Charleston there is a place called Condos by the Shrimp Farm or something like that.

MR. GEER: It's just not economical for shrimp aquaculture in this country because of the cost. We can't compete with China and Thailand and some of these other countries because of labor cost and the regulations we have. In our state we had a bunch of Cuban investors come and talk to us about it. They wanted to buy land on the Barrier Island. I said, "Do you realize how much that is going to cost?" They said that is not an issue; but after finally looking it over, they fell off the face of the map. They just stopped calling us, because it is just too expensive in this country to do on the coast.

MR. MIKELL: Well, let's strike that.

MR. PARKER: I don't know whether anybody here is aware of what goes on over at the Waddell Mariculture Center down in Bluffton, South Carolina, but they are trying to stay alive.

The state was going to close it but the Hilton Head Sportfishing Club, along with the Hilton Head Reef Foundation, which is a 501©3; people came together and that added to reduced state funds kept it going.

The main projects that they are in right now; they are raising, and have been doing this, cobia in their ponds and adding probably I think somewhere near 100,000 or 200,000 cobia a year, maybe not quite that much now; but striped bass; also red drum, about a quarter of a million to a half million red drum fry.

Red drum was released in Beaufort County waters for quite a few years. It was so successful they have now started up Charleston and northward to try to get it go get it going good up there. We are also at Waddell doing quite a bit of research on the cobia DNA at our dock, which is kind of adjacent – it is on the north end of Hilton Head Island.

It is adjacent to Port Royal Sound, which is actually in the habitat area of particular concern, Broad River and Port Royal Sound. That is where most of the cobia is being released but we've been keeping racks and carcasses for study by Waddell for about seven or eight years. There have been some pretty amazing discoveries recently about our group of cobia.

We used to think they came up from Florida, migrated up from Florida. There was a lot of work done by Mike Denson of South Carolina DNR. It was presented at cobia SEDAR back last February here in Charleston. Our cobia that are in that particular sound estuary during May and June spawning – and that was the question, too; are they spawning?

We have found out they do, but they just move offshore. Albemarle Sound and Pamlico Sound have the same type situation, they just move offshore and then back. There is very little mixing with the cobia from Florida. That's just a couple of bits of news from the Mariculture Center, Waddell Mariculture Center. They were doing shrimp and right now they've got a shrimp plant that they have developed. They say they can sell it to you if you live in the deserts of Arizona. It produces a million pounds of shrimp a year. I don't know how many of it is sold.

MR. WILBUR: Bill, is there a product that the advisory panel could produce to help further aquaculture? Would other AP members think that's a good idea? I'm just throwing it out for thought.

DR. GEER: Correct me if I'm wrong, people in South Carolina, but Waddell is more of a research aquaculture facility. The purpose of what they do is to raise animals to do exactly what you were saying. It is not an aquaculture facility to produce a product that could be used for food, per se. I mean what they are doing is releasing these animals to try to get, just like what you said, genetic markers and things like that. They've had great success with some of those species.

Whenever you talk about aquaculture with those kinds of things it is like what's the return? What kind of return are you going to get on that? You might release a million fry. Well, what is the actual return? What percentage of those animals are going to be seen as adults in the future?

MR. PARKER: We had some figures recently from Mike Denson on the return of cobia and it is quite remarkable. I don't know the exact figures, but it was quite high; cobia carcasses that came

through the system and back to Waddell. They are identified with otolith dye and a couple other ways, and DNA, of course.

It was pretty remarkable, supplementing the natural stocks with those cobias that were raised from natural stock. Usually they are about ten inches to a foot long when they are released, both with a visible tag, a pit tag, DNA tagging, and otolith dye. It is pretty interesting stuff.

DR. WHITTLE: I have two comments. My first one is Mote Marine in Florida, they have been raising sturgeon. The way they've become profitable is by the caviar. They sell the sturgeon off secondarily. But we in Florida also have – our marine nursery tends to be more research based also. We've had mixed results with it, for sure. But maybe if people are interested in aquaculture and having more information about it, we could compile the information that we have from our different successes and failures within our states to help people.

DR. ELKINS: My comments are only about shellfish aquaculture. In North Carolina we have very little modern shellfish aquaculture, some of the most pristine waters on the east coast in areas such as Core Sound, which is pretty much closed to shell fishing for political reasons. You asked about what we could do to help the habitat.

Well, speaking strictly for oysters, I understand that about 95 percent of the world's oysters are cultured; yet in North Carolina where we have decimated our oysters, our deep-water subtidal oysters by destructive oyster dredging, if there is any way that we could help those recover through alternative methods of harvest of the deep water or even designating some of those deep-water reefs that still have some vertical height to them, to encourage North Carolina to designate them as essential fish habitat, which we all know they are for things like gag grouper, which we are intimately involved in here; I think looking at a long-term improvement of the subtidal oyster reefs would be a good goal for us to do.

I noticed in the materials for today's meeting we had extensive talk about seagrasses in North Carolina. Our saline seagrasses seem to be doing quite well right now, at least in my area and according to Anne Deaton, who is a member of this panel. Yet we continue to – and they're protected – yet we continue to destroy these oysters.

Pete Peterson, a researcher from UNC, has done some extensive work to show that the habitat value of these oysters is about 100 times what their dockside market value is. I think we have a lot in our favor to push the agenda as oysters being more important as habitat than as food. I think this is something that is a void that we need to fill.

MR. WILBUR: How about some of the other states? I know Georgia sometimes is struggling with having friendly policies for oyster restoration.

MR. GEER: We're golden now; we are doing much better. We're moving forward. We will probably be putting in three or four new restoration sites next year at least. The permitting process, we've got that down to a point where we are doing well. It has gotten a lot better in that regard. I think just about every state in the southeast, probably on the Atlantic Coast has some kind of oyster restoration program going on. In some states it has been defined as essential habitat. I'm surprised in North Carolina it's not.

DR. ELKINS: These restoration projects, which I've been part of, are very, very expensive. Most of the oyster restoration and that type of money has been slashed from our budgets in North Carolina. It just makes sense to me prevention is a lot cheaper than restoration. The places that we're putting these subtidal deep-water oyster sanctuaries are right adjacent to where they're doing the oyster dredging, dragging a hundred pound steel-toothed dredges over the bottom. They are killing two oysters for every one they harvest. It just doesn't make sense to me when the entire oyster harvest of North Carolina is about a million dollars, including hand tongs; that we allow this to continue.

MR. WILBUR: I'm trying to think what could this Habitat Advisory Panel do to further a more sane approach to oyster reef protection and restoration? The good side is oysters are an important habitat both ecologically as well as an important thing economically in all four of the states that the South Atlantic Council touches, which in my mind puts it at an advantage over seagrass, because seagrass is not that big a deal in South Carolina or Georgia.

It is a habitat that we all can kind of get in on. As Pat mentioned, all of the states have some kind of oyster habitat restoration program; federal government restoration center type grants all kind of have a fair amount of oyster-related money in them. Atlantic Coastal Fish Habitat Partnership down here at the corner has oyster habitat as one of its priority habitats I believe for certain types of waters.

There is definitely something in all of our day jobs that could benefit from something that came out of the council in favor of oyster habitat. Then you have all of the federally managed fishery species that use oyster habitat during some part of their life cycle, too. Again, it is relevant for the council to be working on this issue. The question is what is it that we produce? Is it some kind of set of best management practices? Is it some kind of clear recommendations? What are your ideas on what that product could be?

MR. MIKELL: Pace, bullets five and seven address estuarine economics and so forth. I just think oyster restoration to me is very, very important, but we don't need to be talking about it in aquaculture. We need to be talking about doing estuarine maintenance.

MR. WILBUR: Okay, but part of what Chris talked about was protection and conservation of existing oyster habitat, but also having a restoration component to that as well.

DR. ELKINS: Well, I guess one would be to protect the deep-water oyster habitat, but at the same time encouraging mariculture of oyster using modern techniques where floating cages and things, where the oysters reach marketable size as a substitute for the fishermen to have something else to do in that context. You had brought up what we could do during the aquaculture. I didn't finish my thought, I guess.

MR. MIKELL: Let me ask you a question; does North Carolina do anything with floating oyster cages? Does Georgia do anything with them?

MR. GEER: They call them oyster gardens, and, no, we do not because there is the health concern.

MR. MIKELL: There is a permit pending, if it hasn't already been passed, okaying to put one in the middle of the ACE Basin down just south of him. I don't know what's going on with that thing, but I think the guy has backed off of it a little bit because of the expense involved.

AP MEMBER: Jenkins, there is at least one person of whom I'm aware in North Carolina that is growing out oysters. I'm thinking of Jay Styron, but I'm sure there are others.

AP MEMBER: James Morris on Harpers Island?

AP MEMBER: He's doing oysters, too.

AP MEMBER: Yes, and Jim Swartzenberg.

AP MEMBER: There is a good amount of shellfish culture going on.

DR. ELKINS: We have an extensive lease program, which is not a very productive way of doing it, just throwing shell on the bottom and allowing natural spat fall. One gentleman we mentioned, Jim Swartzenberg has a hundred acre lease on the bottom and one acre of floating cages, column lease. He grows more oysters on the one acre floating cages than the entire other 99 acres bottom leases.

That is the modern aquaculture I was referring to. Those shellfish, within 18 months or even sooner now, are ready for market, and it takes three years for the bottom leases. They're singles; they are perfect for the half shell market. He gets much more for them than the traditional bottom leases. With the large amount of clean water we have at least in the central and northern part of the state, I think North Carolina is very ripe for making that transition. We just need a little push, I think.

MR. PRATT: I believe there is a fellow over on Saint Helena Island, the other side of Beaufort, that is growing oysters on ropes and so forth, big singles, charging big money and getting it. I can only see that growing. The natural, as far as what the AP could do, I can't see how we could do any better job than the states are doing, especially Beaufort County.

We've got laws, a storm runoff group that keeps a good eye on things. There are development ordinances that are very sensitive to non-point pollution. I can't imagine doing anything other than backing up the states with a pat on the back.

MR. WILBUR: All right, we'll keep oyster something kind of on the list of things to maybe double back on later on. Are there other ideas on products that the advisory panel could produce to further council objectives?

AP MEMBER: This is not going to be helpful, but a relatively new member of this advisory panel; I just have a few years on board; could you give me an idea of some of the things that in the past the panel has tackled? I'm not sure what to consider when you asked that question.

MR. WILBUR: The things that I know of that the Habitat Advisory Panel has produced; one is the set of habitat-related policy statements that we'll go through in more detail tomorrow. We can crank out more policy statements and view that as really what our task is. Another task we

can do or that the AP was very instrumental in was completing large parts of the Fishery Ecosystem Plan, which was done several years back.

I don't know if anybody on the current panel was part of the FEP days, but that spawned a whole series of panels and subpanels that were tasked with reviewing parts of the council's habitat plan and then updating that habitat plan and adding information to it, and eventually morphing all of that into what is the Fishery Ecosystem Plan today.

That is another example of something that was produced. As far as ideas that I have heard some of you express in the past year or so is some sort of assessment of the condition of our coastal fisheries. Exactly how one would go about doing that and how it relates to how onshore activities affect offshore production and things like that; that is an idea that has come up.

I don't know of anyone else in the southeast that is working on that. Those are a couple ideas or the one new idea. I am not sure that there is a real niche out there for the council's Habitat AP in promoting oyster conservation and restoration, but I think it is worth exploring that to see if there is some sort of a niche out there that we could fill constructively. Any other ideas? Pat.

MR. GEER: Pace, what about artificial reefs. It seems like we kind of always – we know they are there, we know we are still putting things out there, but are any of the states actually assessing what they put out there? Are there any guidelines in how it is being assessed? What is the best methodology? How do they fit into the whole plan of the ecosystem? They are creating habitat, but I don't know how much we are taking them into account.

DR. WHITTLE: In Florida we have an entire artificial reef group at FWC. The Southeast Florida Coral Reef Initiative, they funded a grant to look at exactly that. It is actually quite scientific. It talks about from announcing where they are to not announcing where they are to recruitment to different species, to how it affects benthics and demersals and cryptic versus sportfish. It's actually an excellent report that I could send a link to. It's the Atlantic, the Southeast corner.

DR. KELLISON: Amber, I'd be interested to know if this is part of what is going to happen in Florida, too, but an interesting part or something that I think is interesting about artificial reefs is that they tend to not be monitored in terms of fish abundance in the same way that we monitor other habitats.

We have fishery-independent surveys both at the state and federal level that feed into assessments of our economically important species. To my knowledge, reefs typically get left out of that equation and from a federal standpoint. We run a survey out of my group in Beaufort and we sample reef habitats, but we don't sample – we sample natural reef habitats, but not artificial reef habitats. We make the assumption that the trends aren't the same between the two. If red snapper increasing on natural reefs over time, then they are increasing on artificial reefs over time. I'm not aware of any like sort of long-term artificial reef monitoring programs that could be linked to fish monitoring programs in other habitats that you could test the hypothesis that the trends between the two are the same. I said that in a really garbled way, so I'm not sure that made any sense.

AP MEMBER: Just to speak to that real quick; I know at North Carolina Division of Marine Fisheries they were doing some studies of the artificial reefs they have been putting out to look at fish densities and comparing it to other areas. I think Greg Bodnar there was doing the work, but I'm not sure. I think recently I heard they were losing their funding toward that kind of work, but you might want to check with them.

DR. KELLISON: Sure, I think there are a tremendous amount of studies, probably in the Gulf more that look at or assess what kind of fish are coming to, like different kinds of reef, how artificial reef profile affects the fish communities there, with some comparisons to maybe specific natural reef.

There are studies where say I compared an artificial reef to a natural reef and compared densities. I just mean as sort of a broader program, including a bunch of artificial reefs and monitoring those over many years, and comparing those changes to changes over natural habitats over many years would be informative, I think.

It's a huge issue in the Gulf right now. It's a big discussion with red snapper, because there is so much artificial reef habitat in the Gulf. Some of it is just put out there, but a lot of it is based on oil platforms. People are arguing that those don't get sampled and it's a tremendous amount, and there is habitat limitation and so the assessments are all wrong because there is all this biomass of red snappers on these artificial reefs and they are not getting really monitored in their fishery-independent monitoring programs.

MR. MIKELL: Pace, you mentioned it and last year we talked about this same thing. We talked about the state of our ocean off the southeast coast. I really thought that was going to be an agenda item some time in the near future. We've got reports on habitat, we've got reports on oysters, we've got reports on grouper, we've got reports on all kinds of stuff. It seems like to me we could pull all of that stuff together and say whether the coast is good to go or not good to go. I've been trying to get South Carolina to do it for years. It keeps falling on deaf ears. Maybe this is where the lead needs to come from.

MR. WILBUR: Yes, that is a topic that is near and dear to my heart. I was hoping it would be on the agenda for this advisory panel. What basically happened I think was the whole Oculina Bank HAPC discussion, which was pretty far out of our mind last November, all of a sudden kind of reared its head during the December and March council meetings and really pretty much consumed what energy I could put in between meetings and what Roger was able to do between meetings too.

Just me personally, I would totally support some sort of state of our southeastern ocean kind of report. The bits and pieces of information available needed to do that probably exist, but have yet to be kind of compiled. We would need to come up with some kind of a plan for compiling it, digesting it, and then cranking it out.

At some point in putting together that plan, I think we would have to run the concept and the plan through the council to make sure that they are on board with the advisory panel devoting some effort into that, because it will also mean some of the council staff putting effort into that. Do other folks think that would be a cool product to produce?

MR. GEER: Pace, you're talking about almost like a southeast report card, coastal report card?

MR. WILBUR: In a sense.

MR. GEER: It's a great idea. I think it is a lot harder than you think. I've been trying to do that for our state just for the fisheries data. Then when you start bringing in water quality and land use and contaminants and everything else that you have to do, it gets pretty involved. Just doing fish should not be that – just doing populations might not be that hard, but you've still got to collate all the data. But once you do it, you get on schedule of getting it done each year, it is just getting over that first hurdle.

MR. WILBUR: Yes, I've been part of the development of a couple of report cards and the amount of work is substantial. This kind of comes down to one question. We, as advisory panel members, are we willing to do AP work in between meetings or do we view our service to the AP limited to the two days a year or four days a year that we actually get together as an AP in a room like this?

Again, this is one of the issues that the Atlantic States Commission's Habitat Committee also wrestled with. It really kind of came down to finding a couple of handfuls of members who were able to do work in between meetings to start doing some of this fair amount of work. Then eventually with Atlantic States Commission, it got to the point where they were making enough progress as a Habitat Committee that the commission was willing to help them out by funding some contractors to take some of their initial products to the next level.

Now, I'm not by any means implying that the council has said that they would do that kind of stuff here for us. If we show the value of the product and our willingness and our enthusiasm to produce it, we can cross our fingers and hope that others will share in that enthusiasm and either support us directly or support us indirectly in trying to take some of these basic kinds of report cards to the next level. I see Mr. Cupka would like to probably weigh in on that.

MR. CUPKA: I'm just sitting here listening to your conversation and I just want to make some remarks as a member of the peanut gallery. I've been going to council meetings since the councils were set up in 1976 and then a sitting council member since 1991. I may have some perspective that some of the new members don't have.

I can tell you that this particular AP is very different from the other APs that we have. The other APs are pretty much review groups. This AP has had a history of not only being a review group but also a work group. They have put together a number of products, which have been very useful to this council.

But I can tell you that this isn't the way most of our APs or even the other ones work. As I say, they've been mostly review groups. Having said that, this group does have a history of providing input and work products to the council which have been very helpful to us in the past like the policy statements. A lot of those have been pretty much developed strictly by the work of this AP, which is a good thing.

I certainly don't want to discourage that, but I can tell you if it was a different AP sitting here, I don't think they would be having this kind of discussion. But the history of this AP is such that

indeed you do both things, not only review but provide products, like I say, that have been very useful to the council. We certainly don't want to discourage that, but again I just want to let you know it is a little bit different than the way most of our APs work.

But having said that, I think this AP is to be commended, because they have certainly been very proactive in the past in the policy statements that the members have developed as well as the habitat plans and whatnot have been extremely helpful to the council, and we appreciate that. If you have any other ideas on policy statements that you think would be useful, we would certainly be glad to entertain them. I just wanted to give you a little bit of perspective of how this AP is different from the other ones and different in a good way.

MR. WILBUR: Okay, we will focus some on the policy statements tomorrow, for sure. It is good to know that the council has found them useful. We do have some preliminary comments that I was going to make tomorrow morning about the policy statements and how myself and my day job as a habitat manager and regulator that we find those policy statements useful as well.

Making sure that they're up to date and current and focused is really a good maintenance task for this advisory panel to do. Again, do we want to at least explore putting together offline from a particular meeting, putting together a plan for how we might produce this Southeastern Ocean Report Card?

Is it something that folks would want to participate in? I've seen a few heads kind of nodding a little bit. If we were to put together a group that might meet, say, a couple of times on the phone to crank out this plan; can we see some hands for folks who might want to be on that work group?

Okay, we have our state leads all raising their hands, Pat Geer and Amber Whittle. We have Fish and Wildlife Service in the form of Mr. Ellis. We have the NOAA Beaufort Lab, Dr. Kellison; Jenks, I saw him raise his hand; all right, Terry, another folk form North Carolina. Well, Terry is here speaking for Anne too, right?

We have the nucleus of a group and Roger and I will put together a conference call and we'll try to have an organizing meeting before the holidays, maybe just a quick one, and then like maybe a serious kind of meeting some time in February or so. Then we'll be able to report back to the Habitat AP as a whole what it is we think this report could look like and our guestimate at the amount of labor it would take to do it and see if we're still on a track that folks think would be useful.

MR. MIKELL: Pace, I want to volunteer Patricia for this committee. I stand corrected, because South Carolina in 2008 put together what they called SEA CAP, with DHEC, I think Fish and Wildlife, NOAA and who's that?

MS. WENDT: DHEC, DNR, NOAA, EPA.

MR. MIKELL: Anyhow, she's got a game plan.

MS. WENDT: It's not my game plan, but it is one approach to assessing the health of coastal environments. For the DNR, Bob Van Dolah pretty much headed up this effort. They classified,

based on a number of metrics, benthic invertebrates. I'm not sure to what extent they sampled the fish populations, but they looked at contaminants.

They looked at other sediment quality parameters, water quality parameters. Then they classified habitats based on those parameters as either good or fair or – I forget what the not so good category was – yes, bad category, at risk. That might be worth looking at. There is a website. Unfortunately, it was all based on random sampling, too of tidal creeks, larger and smaller tidal creeks.

It didn't really extend out into the ocean to any great extent, I don't think. There were statistical comparisons from one year to the next. I think they started in 1999 and lost their funding, I think, and 2008 is the most recent report. There is nothing more recent than that that I'm aware of. I could send that link to that website and you could see what the metrics are that they looked at.

MR. GEER: Pace, I think Cindy is biting at the bit, but she wants to talk about NCA and some other things.

MS. COOKSEY: This is right in my ballpark. You are talking about the stuff that my group and I have been working on for a very long time starting with Jeff Hyland back in EPA's e-map days developing report card systems. The South Atlantic Bight data that I was referring to is a subset of our larger regional coastal assessment work that is all geared doing that broad-scale habitat ecological assessment using a multi-parameter approach and probabilistic sampling design.

As a consequence of the South Atlantic Bight sampling, I worked in conjunction with the EPA to develop a report of ecosystem assessment for the South Atlantic Bight Estuaries to the open ocean environment, which I think would be useful. It does not have a fisheries component, but it would be of use to you kind of as a starting point in combination then with individual state programs.

South Carolina DNR has done a fabulous job in state. I know other states have also had programs that have grown out of their historical e-map and EPA's National Coastal Assessment Program. What I just want to do is show you that SAB report and kind of that report card idea of good, fair, poor.

The idea of using that multi-parameter assessment, you have weight of evidence in order to determine if your system is good, is healthy or you have areas of concern. It utilizes what we call a sediment triad approach traditionally, which is the benthos, the benthic communities. It looks at sediment contaminant levels and it also looks at a variety of toxicity measures.

As you talk about estuaries to the coastal ocean, one of the issues that you may run into is we have for estuaries, especially estuaries in the southeast we have a lot of what we call cut points, a way of saying if you have contaminants above this level, it is impaired, below this level it is not impaired.

The same with toxicity, if you are familiar with the benthos, we have what is called an index of biotic integrity or an IBI for our estuarine systems that help us determine if a benthic community is healthy or not. Those cut points don't exist for the coastal ocean environment. We actually in

some cases lack the ability to develop them at this point, because to develop them you need healthy areas and impaired areas. We just don't have enough data in order to develop that.

What we discovered when working with the EPA – and here you've got this initial map. You can see the site coverage in the center there that went into this report – that while we had lots of good and bad that we were able to do for the estuarine portion. we were a lot more limited in the coastal ocean portion, because they just have not been developed anywhere in the country.

Ecological conditions, coastal ocean estuarine waters, the U.S. South Atlantic Bight, 2000 to 2004, lots of good and bad. Percent of survey area with mean ERMQ levels; that is a way of taking a lot of sediment contaminant data and compiling it down very quickly. You can see that we found that 95 percent of the coastal ocean environment of the South Atlantic Bight was healthy in regard to that in comparison to the estuaries with 1 percent highly impaired, 10 percent high impairment, 30 percent moderate impairment.

When we talk about report cards, that is the kind of report card assessment. And just kind of again getting back to the issue of if you want to take this approach and move it out into the coastal ocean environment and not having the cut points, you can see looking at a whole suite of different parameters where we are able in the estuaries to call them good, fair, poor, we just weren't able to calculate that in many cases. If you do decide to pursue this as a panel, you've got this kind of as a starting point, I think.

MR. MIKELL: How could you say the ocean is healthy when we can't eat the king mackerel? The kids can't go swimming at Myrtle Beach because of pollution. I can't east the oysters in my creek because of human feces or animal feces, who knows. It is not healthy. These are things we are going to be eating in the future, maybe.

MR. WILBUR: Maybe by putting this report card together is some way we can help draw attention to that issue and point towards some fixes. It seems like it is worth a shot. If you'll kind of go back to Roger's Digital Dashboard as basically being a series of cubby holes, and each cubbyhole is basically a portal into a certain kind of information, one of those portals is an assessment of the quality of coastal habitats. This could be fleshing out that cubbyhole for the Digital Dashboard. Terry.

MR. PRATT: One thing, Pace, that sticks in my mind; I think this is a good idea and it is a very sound concept. I know for a fact in North Carolina the Coastal Federation does a State of the Coast Report every year, but that is geared towards developmental practices. When we get this report card going, Jenks, it ought to be a working document not a concept, idealistic statement. We find out why you can't eat your oysters and we'll go fix it.

We find out why you've got chloroform counts above tolerable levels and go fix it. Instead of just sitting back here and piously making recommendations and saying we ought to do it this way, make that report list item by item if you realize what the problem is, what we deem to be the cause, and what we recommend to be the fix. If we had that, a good example would be the northern migration of lionfish.

If we knew the parameters of the water where they are native and we track those parameters farther north, we'll find out that they are not out of place; their place is moving. I don't think we

can fix that, but it would make us aware of why something is happening rather than sitting here and expanding on concepts that we can't implement.

We need to be able to physically touch what it takes to fix Jenk's creek. So far, whether it is councils or states or national, we've not been able to touch that link. We haven't been able to put it together where, okay, Pace, you screwed this creek up, we're going to get you. Oh, no, you are bothering somebody's political idea or personal fortune in developing something. We need to take this concept into reality and look at system by system what we are doing. If we had this type of background, it would give us a sound platform from which to launch a regulatory process if it required it.

MR. WILBUR: Well stated. Amber.

DR. WHITTLE: I was just going to say in Florida we're sort of the guinea pigs for numeric nutrient criteria through the EPA. I think it is a little stalled right now, but it is exactly that. It is trying to take the nutrient pollution within a watershed and assess who is going to fix what. We've been doing that in Tampa Bay since the early nineties with the Nutrient Consortium. It is agriculture, industry, homeowners, municipal, and that has actually been fairly successful. But doing it on a wider scale, it is going to be very difficult and there has been a lot of resistance to it, but it has to be done.

MR. WILBUR: I would just add in the first iteration of this report card we stick to our roots and our strength and focus on the fishery side of it, recognizing that others are dealing with water quality and land-use development and things like that. We don't need to reinvent those wheels. By focusing on the fishery component to it, I do think we would be preparing ourselves for the next round of EFH five-year reviews, which I believe the South Atlantic Council is required to complete by December of 2016.

By December of 2016 the council is supposed to have assessed sort of the effectiveness of the EFH program that it implements in cooperation with the Fishery Service and identify the habitats that need extra special protection and tying that back to the fishery resources. That is sort of the whole goal of these five-year reviews.

A spin-off result of this report card, if we complete it before then, is that we are positioning the council to do well during that next round of EFH five-year reviews, too. I think it sounds good. Are there any other ideas people want to throw on the table? It is four o'clock. I see a couple heads kind of nodding; people are kind of getting a little tired. I think we'll break for the day and we reconvene tomorrow at 8:30. The first agenda item for tomorrow morning is going to be to assess the cadre of policy statements.

What I'm hoping we can do tomorrow, when we do the policy statements, is that we can basically break up into two or three groups with each group given three or so policy statements to focus on and work as a small subgroup and then come back together and report on sort of your assessment of how current and relevant that policy statement is and what actions need to be taken to fix it.

We'll work with Roger in between meetings to actually do the fixes that the AP kind of recommends. If you are able to take on a homework assignment for the evening, it would be to

identify two or three policy statements that you would really like to participate in the discussion of tomorrow.

We'll try to break out the little workgroups based upon that. Also if there is a policy statement that you feel is kind of mish-mash, too many issues together into a single one and needs to be broken out into some separate policy statements, that might be a good thing to do. I do believe we have highways and hydropower linked together in the same policy statement here. It seems a little odd.

Maybe some kind of breakout like that would be also kind of a recommendation to think about. I think you guys have done really well today. You got through the Oculina discussion much better than I thought it was going to be. I appreciate that and your patience dealing with the computer glitches is also really well, too. I'd like to thank the council staff for solving all the computer glitches. Carter.

MR. WATTERSON: I just had a quick question in reference to essential fish habitat that we were talking about a minute ago. Is that something that is generated and initiated through the FMP process or do we have the leeway here to work on different designations ourselves?

MR. WILBUR: The practice has been in this council to go through the FMP process, whether it is FMP by FMP or through a comprehensive amendment which touches multiple FMPs to designate EFH and habitat areas of particular concern. The exceptions to that have been some tweaks that were done to the snapper grouper designations as part of CE-BA 2.

But in terms of what is available as an option, basically at any time the council can make adjustments to its EFH and HAPC designations. Now there is a process for going through it. I think Roger refers to it as the framework process. It is kind of codified in the original habitat plan. It is kind of given status in the original comprehensive amendment. It is available for use, although it has not been used, but it would allow basically tweaking of those designations to occur whenever the council is ready to do it.

MR. WAUGH: I think part of your question was can this AP develop recommendations and the answer is yes.

MR. WATTERSON: Yes, I'd like to see this council work more toward that as well – or not council but AP, and look into maybe redefining some of the current existing EFH or even clarifying it better. One thing I do like, in having worked with EFH from a lot of different councils, is I like that EFH was designated by particular habitat types within this council.

It makes it easy coming from my viewpoint of trying to determine what kind of impacts somebody might have on those essential fish habitats. However, that being said, one thing that the South Atlantic Council didn't do for a lot of their essential fish habitat designations was do it by life stage or look at all aspects of a life stage. That is something we could look into further as well. The other area is they did classify a lot of different habitats as essential fish habitat, but one thing that is lacking is really identifying where those habitats occur.

There is a lot of new data out there since this was already done, and I know Roger has worked on this and a lot of other people at the council in putting together their EFH map or website and everything else. There may be some people around here that could add to that as well.

MR. WILBUR: My response back is the council in 2011 completed its first round of EFH five-year reviews. That resulted in a letter from Dr. Crabtree; the regional administrator of NOAA Fisheries in the southeast, accepting the council's five-year review and giving the council three things to focus on for the next five-year review, which needs to be completed in December of 2016.

You touched on two of those three things in what you just said, better spatial technology to identify the locations, more discussion of life stages and their essential fish habitat, and the third part that was touched on in that letter is that the EFH regulations talk about four levels of information in EFH designation.

Those levels basically we've talked about before, and Mike Street grilled me on it, was going from presence/absence to fishery production in a gradual kind of process. The council has been nudged by Dr. Crabtree to focus on improving its EFH designations along those lines as well for 2016. Basically in theory the council has already headed in that direction. It is a question of the speed at which it is going to get done and whether it would get done faster than 2016 or some time sooner than that.

MR. WATTERSON: In response to that, I guess I would ask what do we want this Habitat Advisory Panel's role to be in that process or what do we think it should be?

MR. WILBUR: That's something we should discuss, whether that is a today discussion or a later discussion. I think it probably is a later discussion. There is a companion discussion to that and that is what is the role of the Southeast Fisheries Science Center in that review? If you are part of any of these national meetings, the Southeast Fisheries Science Center, in all deference to Todd being the Southeast Fisheries Science Center representative here, but the Southeast Fisheries Science Center participated far less in the EFH five-year reviews in the South Atlantic and the Gulf of Mexico and the Caribbean than what you saw from the sister science centers in the Northeast, Southwest Alaska and Northwest.

Part of that is just sort of the whole politic of regional science center kind of relationships. The discussion you posed about what is the Habitat Panel's role is one that we also are slated to have at sometime sooner than later inside NOAA Fisheries about what the Science Center's role is? I think the outcome of that discussion is going to – well, actually the outcome of both of those discussions are going to influence each other.

DR. KELLISON: I wasn't going to defend the Science Center, but I was just going to say that maybe for clarity, because before I started working with NOAA I wouldn't have been able to tell you what that was, you could clarify or I could clarify what that means. Is anyone in this room not familiar with what Pace means by the Science Center? Everyone knows.

The National Marine Fisheries Service, its regions are – and I probably won't explain this very well so please correct me, Pace – but its regions have sort of two components. One is a regional office, which handles more of the policy side of things, and one is a science arm. In the

Southeast National Marine Fisheries Service in their Southeast Region, there is a Southeast Regional Office, which is based in St. Petersburg.

Then there is a Southeast Fisheries Science Center, which is the research and science arm of fisheries, which is based in Miami but includes laboratories in Beaufort where I work – I am going to miss a bunch of them – in Galveston, Texas; Pascagoula and Panama City. The Science Center is just a research and maybe the stock assessment part of fisheries. They are the people that provide information to the regional office who then make decisions about management from it. Hopefully, that was a little helpful.

MR. WILBUR: Okay, we can have more discussion about that kind of stuff later, too. Anything else; comments for the good of the order? Seeing none; 8:30 tomorrow morning.

The Habitat and Environmental Protection Advisory Panel of the South Atlantic Fishery Management Council reconvened in the Charleston Marriott Hotel, Charleston, South Carolina, Thursday morning, November 15, 2012, and was called to order at 8:30 o'clock a.m. by Chairman Pace Wilbur.

MR. WILBUR: Welcome back. What we're going to do this morning is spend about an hour and a half reviewing the existing cohort policy statements; identify generally speaking the ones that need to be fixed and the kind and nature of the fixes that need to be done to them. We are going to do that by breaking up into some individual groups.

I think we are going to do three small groups. We have leaders for each of the three groups and you guys will be able as members to join whichever group you want; and if you want to bounce from one group to the other, that will be fine. I've asked the leaders to kind of take notes during their groups on the focal questions, which I'll put up on the board.

Those focal questions are listed down at the bottom and that is to identify missing and obsolete policies, identify the major elements of the existing policies that need to be tweaked and then eventually to establish some workgroups that will by e-mail over the coming year update the set of existing policies and develop some drafts of any new ones that are necessary.

I think Roger and I roughly had a goal of trying to have this next set ready to go to the council for sort of review and their blessing a year from now. Now, just going back to the list of the existing policies, they are listed here. The way we're going to divide up is Amber Whittle, who is our Florida Subpanel lead, is going to lead the review of the aquaculture and the SAV policy statement.

Priscilla Wendt, who is our Subpanel Lead for South Carolina, is going to lead the review of the beach nourishment and the two invasive species policy statements. I've been told that the Fish and Wildlife Service will be happy to lead the review of the energy, hydropower and water flows policy statement since that seems to be right up your alley, and I know at least one of you is on internal to the Fish and Wildlife Service workgroups that do this kind of stuff pretty often.

The way I envisioned this unfolding is that we'll go into different sections of the room. We already know where those three groups are going to meet inside the room. We'll have paper copies of the policy statements for each of those groups to look at; so that individuals can pass

those paper statements around, if you haven't had a chance to look at them in your briefing package.

I would say at 9:30 we would get back in large forum here and have a brief report out from each of the three groups, and then we will move on to the remaining session for the day. Is it all clear? Is everybody okay with this? I will put the questions back up on the board.

(Whereupon, the AP held a breakout session.)

MR. WILBUR: All right, do I have a group that volunteers to do the report out first? Okay, our colleagues from the U.S. Fish and Wildlife Service.

DR. LANEY: Mr. Chairman, this is what we came up with. Just a general comment first; John and Alice kind of led our discussion here. We didn't really have enough time. I think that will be an issue with all the groups. What we would suggest is that maybe the group would like to try and work with staff to reconvene through conference call and have some further discussions after we have a chance to thoroughly review these things.

But here is what we came up with as a list of action items Mr. Chairman, and I'll send these to you so you don't have to write them down. For the flow policy, number one, update the background information, especially that on essential fish habitat. In other words, red drum is no longer one of the species that has EFH at least on the Atlantic side.

Does this policy include flow alterations due to coastal structures, groins, jetties, bridges, et cetera? We didn't see it in there so we wondered whether or not we should roll that into it. Two, compile all the state flow policies which have been developed since the policy was written to see what they have said; three, gather updated information on FERC hydropower projects and core projects within the council's jurisdiction and consider whether to roll hydropower policy into the flow policy.

Four, find out what the Southeast Aquatic Resources Partnership Science and Data Workgroup is doing with regard to water flows; five, get current information on the hydropower proposal for the Gulf Stream and any other hydrokinetic proposals. For example, we've heard about one proposal in South Carolina with regard to putting turbines in the AIWW.

Also we thought it would be useful to just update ourselves on what has been happening with the East River turbine projects in New York. Six, members of the group will further review the current policies and send suggestions for change to the entire group; seven, was just a question for us to think about as how to deal with water demand in the southeast.

What is predicted for the future relative to climate changes in terms of water patterns, precipitation and so forth and so on; number eight, add any conditions associated with inner-basin transfers of water relative to how it affects fisheries and flows. Number nine, make sure that entrainment/impingement issues are addressed in both of these policies.

That takes us to the second one we had, which we didn't get into as deeply as we did the first one. That is the energy exploration, development, transportation and hydropower relicensing one. Number one, the group will review this one and convene a call to discuss it further with a

view toward whether we should separate out the hydropower and/or develop a separate policy for transportation infrastructure, in other words, highways in general, aquatic connectivity issues due to culverts, bridges, noise impacts from pile driving and so forth.

Number two; add any concerns relative to nuclear energy to the policy. Those could include water flows, temperature issues and habitat issues. Then number three; we have the same need to update all the background information for this policy, and Alice asked that we include Mark Caldwell in our group discussion since he had come yesterday to participate in this and wasn't able to be here today. Mr. Chairman, that constitutes my report and the rest of the members of the group would be happy to answer any questions.

MR. WILBUR: Any questions for the group? Excellent report. Okay, Amber.

DR. WHITTLE: We'll start with aquaculture. We had a lively discussion and then broke it down in to six aspects. The first thing we thought we needed to update the distribution and current technology, types and success of different aquaculture facilities even internationally. From our discussion yesterday, it was pretty clear that we don't even really know what is going on in our states in terms of what type of aquaculture or where it is, type success.

A lot of our current policy talks about destruction of essential fish habitat for aquaculture, but we don't even know if that is a concern now. We wanted to look into more offshore what is going on, and if we should support it, what are the issues with it? Chris Elkins agreed to lead it. We'd also like to use James Morris and Mark Torono on our committee.

We wanted to discuss further whether we wanted to expand it past just habitat issues to genetic issues, diseases; is that appropriate for us? Update the policies, as I said, and we were going to start by e-mailing the statement around and vetting it through our different agencies. We didn't get into quite as much detail as the previous group.

Then for SAVs we wanted to start with a needs' statement and just discuss whether or not having SAVs are mostly nearshore; if we still felt that was appropriate for us to be involved in. We wanted to have a definition of SAVs, because currently it is just focused on seagrasses, and SAVs obviously extend to macro algae sargassum. Do we want to have any sort of policy statements on those species?

There is quite a bit of obsolete data in there and some of the policies are obsolete, too, so it certainly needs to be updated. We were thinking maybe Anne or Anne and I could lead it together. Again, we were going to start with an e-mail statement and vet through our different agencies who have more SAV expertise than we do. Question?

MR. WILBUR: Excellent; any questions for that group? Chris.

DR. ELKINS: Just one comment; since SAV is primarily Florida and NC, having Amber and Anne co-lead that group would really bring strength to it.

MR. WILBUR: I'm sure Anne greatly appreciates that acknowledgement in her absence today.

DR. ELKINS: She told me to let her know what happened.

MR. WILBUR: Well noted. All right the last group, Priscilla.

MS. WENDT: Okay, most of our discussion focused on marine and estuarine-invasive species. Our discussion of those two pretty much overlapped, because there are a lot of similarities in the policy statements regarding those two groups of invasive species. Obviously, we saw a need to update the species list by consulting experts in each of the various states to see whether there are additional species that should be added to the list.

There was a lot of discussion about lionfish. As a matter of fact, that took up most of our time. Bill Kelly knows way more about lionfish then I could ever hope to know. He's going to send me some additional information that could be incorporated into the policy statement. Regarding lionfish, some of the recommendations that our group came up with was that we should be promoting research, cooperative research programs, particularly looking at trap design and investigating market plans, promoting a fishery for them possibly, investigating control methods.

It was generally acknowledged that eradicating them is pretty much not feasible. Updating their habitat preferences, distribution, life history and diet requirements, and there was also some discussion of having some additional text on algae, red tides and other kinds of toxic algae, whether or not there are species that might be considered invasive – I don't think anybody was really sure – and pathogens were another thing that people suggested should be added to the list and expanded upon.

Did I pretty much cover invasive species stuff from the folks who were in my group? Bill, did you want to add anything to that? There was virtually no discussion on our beach dredging and filling and large-scale coastal engineering projects except there was some discussion about an issue in South Carolina regarding inshore open water disposal of dredge material; and whether that is a problem in other states, nobody seemed to be sure.

Whether or not we want to develop a policy statement on it was also a question, but that is something we're grappling with in South Carolina. We've had some large projects proposed and we've historically opposed inshore open water disposal as an agency; The South Carolina Department of Natural Resources has. We're trying to determine whether there is an appropriate way to do that or whether it should be even allowed at all. I think that was pretty much everything.

MR. STREET: I was concerned with the beach-fill policy and did some thinking about it last night. Specifically to your open water dredge disposal, in North Carolina there are guidelines set up for the Corps of Engineers to do it just in the throats of inlets and just a little bit.

MS. WENDT: That is exactly what is being proposed in South Carolina as well.

MR. STREET: There is a policy in North Carolina with the Corps that was worked out with the state.

MS. WENDT: Has anybody monitored that?

MR. STREET: No. Another issue which I didn't hear you mention with that is as federal funding for inlet maintenance, especially small inlets and for beach nourishment – well, beach

fill, mining and deposition is what it really is – as federal funds disappear, there are issues of state and local funding.

Sources of those funds are under discussion. A proposal in North Carolina that any Fish and Wildlife Service people here will recognize, and that will be patently illegal, is to use fishing license funds, fishing license income to partly support that kind of dredging, since, of course, recreational fishing boats use those small inlets.

That is a very clear violation of allocation of license funds under the D/J Program, federal aid and sportfish restoration from the Fish and Wildlife Service. That has been proposed and we'll see. I know in North Carolina if the state legislature tries to go forward with that, when they get their nasty letter from the U.S. Secretary of the Interior, we'll see what happens.

The impact of funding; in looking for funding it could well end up diverting funds not just from those licenses, but from regular appropriated funds for fisheries management agencies. Those are high-priced items. That is something that I think the state agencies needs to be aware of and on the lookout for. Then there was another thing.

In the policy it talked about effects of the so-called borrow sites. They are mines; they are not borrowed; it is not put back. These are mine sites. It talked about the effects on nearby bottoms of material drift and all. I don't think it mentioned the mine site itself, because it becomes deeper, it goes from coarse materials, which is what they were looking for, to fine.

There is a fundamental habitat change that will take decades at best to restore. It talks about being able to offset damages at the mine site and the deposition site. You can't. It cannot be mitigated, because you're digging it up; it's gone. When it is placed on the beach, Mother Nature is going to rearrange it.

But when you get into a regular nourishment cycle, whether it is two years, three years, five years, and ten years; and they say, well, the beach restores itself in X number of months or years, well, as soon as you dredge it up again or cover it again, you are starting over again. There is long-term fundamental loss of the productivity of that area.

It will never come back as long as that activity is repeated over and over. People say, well, the beach will be gone. No, it won't. It will just be different and it will be moved. The water is always going to meet the land. That's your beach; that's your shoreline. It just may not be the way people like it. That's enough preaching.

MR. WILBUR: What I basically heard, all of the policy statements need a significant amount of work. We'll get together with Roger and the state subpanel leads, as well as the folks who identified as interested in these policy statements, to sort of come up with a prioritized action plan for how to accomplish this stuff.

Hopefully, we can get a big slug of it done in the coming year. One of the other tasks that we wanted to accomplish was to identify any missing policy statements. I sort of hear I think two brought up. One is would it make sense to have a policy statement focused only on open water disposal? That is something worth exploring.

Also, a policy statement that touches on the mining of the shoals associated with inlets as borrow material for beach nourishment as opposed to the more common practice of digging a hole somewhere offshore, outside of a shoal complex. Now, as a person who manages folks who do EFH consultations every day, I can tell you both of those policy statements would be very much appreciated by the folks in the trenches.

And again we talked about also taking some of the policy statements like the energy one, which has probably too much stuff under the same umbrella, and breaking that out into some separate ones as well. Are there any other comments on new policy statements?

MR. STREET: To the policy statement dredging from inlet shoals, it is being done in a lot of places, but there has been research done on that and I'm trying to remember. He's a geologist at UNCW.

MS. WENDT: Was that Orrin Pilkey you're talking about?

MR. STREET: No, no, he was Duke. Wilson.

DR. LANEY: At UNCW?

MR. STREET: Yes. He published the book on North Carolina inlets. No, Stan is ECU. This is at UNC Wilmington. No, some of the Duke people went there at Western Carolina. Anyway, he has done research on the effects of the shoals and dredging the shoals and the importance of the shoals in the system, and not only to currents and things but also the importance of the shoals to the nearby beaches and the life history of the shoals, for want of a better term, how they attach, detach and come and go naturally and then as influenced by dredging.

DR. LANEY: Martin Posey?

MR. STREET: Yes, Martin Posey at UNCW.

MS. WENDT: I just wanted to also add that Bob Van Dolah has done some pretty extensive research on borrow sites and how they fill in with fine-grain sediments over time. I think he had some recommendations regarding the depth to which borrow sites can go without long-term changes in sediment composition.

MR. STREET: There was a lot of information from him that went into the ASMFC policy statement, which is cited in the council's policy statement.

MR. WILBUR: Okay, any other thoughts about policy statements? Pat.

MR. GEER: We talked a little bit yesterday, but I'd like to see something on artificial reefs. I think maybe we get these other ones done first, but start putting that in the hopper to get something done with that.

AP MEMBER: Did you pick up on the one that Wilson mentioned about possibly breaking out transportation development projects separate from the energy and not energy transportation?

MR. WILBUR: Yes, I did.

DR. WHITTLE: What about water quality?

MR. WILBUR: We can add that to the list of things to talk about as the subpanel leads. I'll use a bad pun here, but if we can flush out what that water quality statement might look like, sure, we can put it on the list of things to do. Okay, to keep us on schedule we'll move on to the next session with a presentation by Tina on the ecosystem atlas.

Now what I would ask is the folks who did the report-outs, if you could send me an e-mail with just a list of the items, that would be great. I have to work with Roger to prepare a report that hopefully he will present to the council at its Wilmington meeting in a few weeks. Usually the transcript of the meeting doesn't get produced that fast. If you could send me that list it will help me a lot in the report out. Just before Tina starts, my question for Gregg; Roger's presentation on the Ecospecies Online System; is that going to be punted to a later meeting?

MR. WAUGH: That will be at a later meeting.

MR. WILBUR: I guess after Tina's presentation Mr. Terry Pratt has asked to address the group on some recent observations he has about corals, correct?

MS. UDOUJ: My name is Tina Udouj and I work for the Florida Fish and Wildlife Research Institute. Today I'm going to talk about a new atlas that I've been working with Roger to develop, the South Atlantic Fishery Management Council's Habitat and Ecosystem Atlas. Just a little bit of background; I've been working with Roger and the council since 2003 to compile and create and host GIS data that are relevant to their management issues.

We've done this using the latest technologies. As you know, technology is changing rapidly and it is kind of hard to keep up with. We started out with the Esri ArcIMS to serve GIS data across the web. Then Roger was very keen on getting more non-spatial data out to people. We looked at creating a habitat and ecosystem homepage. This was many years ago.

We used this DNN portal software to create a content management system where there were user groups that were assigned and people basically worked on the fishery ecosystem plan together via that mechanism. Ultimately the council chose that software for their website. Another interesting technology we used – and it really didn't take off but I still kind of like it – is the GeoPDF. It is just a PDF document that is basically geospatial enabled where the coordinates would display and you can turn layers on and off in a map.

The problem with that technology in suiting the council's need is that their jurisdiction is so large and it was hard to get all the data in one map document. It was more suited for smaller areas; say you just wanted to look at a particular marine protected area, the GeoPDF was a good format and there are a couple examples of those on the council's website.

Next came the ArcGIS server; we transitioned from ArcIMS. That software is being deprecated. We had to make the jump and it was a lot of growing pains switching to that platform. Now we've got a few years under our belts and we're feeling pretty comfortable. The last tab there is

about Flex, and that is what I'll be talking about today. Most of our web applications now for the council are built using Flex technology.

The big core of our project is, as I mentioned earlier, serving GIS data across the web. We're doing that with map services that we create. A map service, just to refresh you guys, is a way to make maps and their features and any attribute data associated with features available in different clients.

Those clients include web browsers; software GIS software such as ArcMap, ArcView, and Esri has free software called ArcGIS Explorer. There is one for the desktop and there is one for the web that I am going to show a little bit later. That is a free avenue way to consume a map service and add different map services across different agencies.

Now we are even seeing capabilities to pull in map services on your Smartphone. You can also view map services in Google Earth as a KML or KMZ file. For the council we've developed several map services based on different management issues. We have one for essential fish habitat, which displays the EFH and EFH-HAPCs for them, and fisheries managed areas.

We have one for habitat and just recently created one for multibeam bathymetry. This is a compilation of a lot of different data sources where the providers have shared their data on the web for us to grab and make a map service. That one is pretty new and interesting. We'd like to see more of that data available; I know Roger would.

Then nautical charts, which there are other versions of nautical chart map services available, but specifically for the council's needs, this past spring and summer when they were talking about new MPAs, they found it very useful in talking to the fishermen to have the older nautical charts with certain soundings and markings on them. We had that map service available for distribution.

This is an example of what that map services contain. This is the Fisheries Service. I know it is not very easy to read. There is lots of data available within a map service. You can get information – let's see if it will go to the web for me – there are different ways – I was talking about these earlier – different clients that you can use.

There is the ArcGIS JavaScript option, and it will pull in the map service. You won't be able to do much with it, but you can kind of see what information is there. This is the fisheries map service. There is also – you can pull it into ArcMap if you have that software. Google Earth, a lot of people are familiar with Google Earth; that is available here through this service implant and clicking on it where you can get more information on what fields and attributes are available with that data.

We started off trying to figure out the best way to share those map services that I just explained. Initially we chose Esri's out of the box solution, because we are low on programmers in our section, but ultimately we found when they made it available that the viewer for Flex was really easy to work with, and to add your data and to customize pretty quickly without being a programmer.

Another reason we chose Flex is that it uses Adobe Flash and that is really, really common on most desktop PCs. We went ahead and chose that route. It was a quick way to get started. We have a web application for essential fish habitat that contains this kind of data. This is the screen grab for the entry point for it.

You get a flash page that explains what the application is about and some of its data sources. The initial map shows the Snapper Grouper EFH-HAPC and some data from PACE, the Atlantic Public Notices for the fiscal year 2011. You also have options within this viewer to look at different services that are hosted from other agencies.

There is estuarine bathymetry that is available through the NOAA Coastal Services Center. You can view that within this application, and there is also another service called the DEM hillshades, and that is an interesting service that contains information for TOPO – they are called Topo Bathys, a fusion of topographic and bathymetric data for coastal areas. That is available through this application.

For another web application we have developed for them is the fisheries application. This is being used to serve data that has been collected from the SEAMAP South Atlantic components. We have species data for that database. We have some data from MARMAP for a species occurrence and different gear types.

We have some new data layers that were created in house that show local species distributions, and this information came from a workshop that the council hosted. We took some of that information that the experts agreed upon and made a publication of and made GIS data from that. And then you also have options to use bathymetry and other federal geo-regulations.

AP MEMBER: What information is available on the website in terms of mapping?

MS. UDOUJ: For the council's main website?

AP MEMBER: Yes, that is open to the public.

MS. UDOUJ: Yes, they have the links to these different applications on the council's website. I'll also provide them at the end of my presentation. This is the interface for fisheries; it is very similar to EFH. They are all built on the same technology and they have different tools and different data that they are displaying.

Finally, the managed areas application has all the council's GEO regulations that they have worked on. This is the entry page for that and the data that is displaying initially is the Deepwater Coral HAPCs, the marine protected areas, special management zones and the Oculina C-HAPC is there. With the recent issues concerning Warsaw grouper and speckled hind, we've added – that's all the points that you see in the map.

We've added those to help facilitate their MPA discussions this spring and summer. Each web application provides a quick and easy way to view data related to a specific management issue. The Flex viewer easily lends itself to the mash-up approach where I can grab different map services from Coastal Services Center or the National Geographic Data Center and display them with the council data.

Roger just kept asking all the time, well, I want to see this layer with that layer. One would be in the Fisheries Service and one was in the management service, so he said let's combine them all and that is where we have the habitat and ecosystem viewer. After the presentation, we can do a live demonstration if you guys are interested, but I just have a few screen shots to go over some of the core functionality for it. The map, you can zoom in and out.

There is a navigation widget that occurs in the map on the left side. I find that I always use my mouse scroll wheel to zoom in and out of the map. It is very easy and quick to move around. The options to turning different map services and layers on and off is available through the layer list. Map services can be moved up and down within the viewer.

You can adjust their transparency; and there are links to go to a description, which shows you more information about that map service. This is the initial display and we're only looking at the managed area service and the data that is available through it. You have options; you can turn on the fisheries data and the EFH data and the habitat data.

Roger is out here swimming around and loving all these data. He is really happy that this has all come together, but, of course, this is just an example that you can get a lot of information in one place. This is just a close up of the tool bar and the different tools that are available. I'll talk about a few of them in the presentation; and if you guys want, we can look at more tools in a live demonstration. The first one is just to find a location.

There are two different ways you can enter your X Y coordinates. If you want to zoom to a particular area or this one, you locate address. I chose our hotel address and it gave me two options, but the first one had a higher score, and that is the one that I think represents the hotel pretty well.

You can search the map using these different graphics. You can just draw a line; you can draw a rectangle, circle, freehand polygon to return features that are within that area. This just shows that we are selecting the Deepwater Snapper Grouper MPAs with this circle. You can't see it very well, but those MPAs are red on the map and you get a table of results.

That particular layer has embedded hyperlinks. If you were to click on the arrow there, you would get an image that was associated with that feature. Another tool and search widget is – and this is just an example of how you can tweak tools to help suit a particular question. If you wanted to find all the danger zones within this area, you could type in danger.

If you were to put a percentage sign after danger, that is kind of like a wild card. It would return all the features that had danger in their attributes. Click search, then you see those areas that are danger zones are returned in your map. If you scroll on the results in this window, you would get – you could zoom to that particular feature.

This one is pretty neat. It is the select features tool that I think Roger and the council found useful this summer with their MPA discussions. It is a way to do a little bit of simple GIS. There are options here to select different data sources, and we are going to select the speckled hind points that fall within the MPAs.

It gives you the results of that selection, and it shows you all of the speckled hind points that fall within the MPAs in a table format that you can export to a text file and you can sort the data based on their attributes. In this particular one, it was the source of the data point itself are sorted based on that.

This was a really neat way for them to see how many points fell within the MPAs during their discussions. Really quickly, there are some tips if you are going to try out the viewer. The more you use the maps and the more you zoom around, your browser caches that data and so then it will be faster the next time you come back.

You should zoom in to your area of interest before you start clicking a lot of layers on and off and probably limit how many layers you choose to display so that draw time is faster. If you press F5, F5 will take you back to the beginning of the initial view. You can refresh everything and kind of start over.

We'll save the demo for later and move on to the Digital Dashboard that we're developing. This came about; Roger and Cathleen, who is my boss, were talking one day at a different meeting about how they wanted a way to kind of highlight the different regional projects and partnerships that are going on in the region.

They heard this cool word; they heard dashboard; and that is what they wanted to do. I really never got to sit down with either one of them and figure out what they wanted. This has been a back-and-forth effort, but this was our first attempt at it. I liked the look and feel of it; I thought it was pretty neat. We can go check it out.

The problem with this particular format and approach, it is slow to load all those images. But clicking on a particular square would give you more information about that project. This is a link to get to the managed areas web application, and on and on. Another thing that was weird, you kind of had to scroll around to see everything. My boss didn't like that.

You know, looking good and working well are two different things sometimes. This would be a great way to showcase if you are a photographer maybe, all your pretty images. I think what we'd like to do is go back and redesign the dashboard and make it easier to find data. The biggest problem with that dashboard I just showed you is that it would be very difficult for me to send you the link to the EFH Project.

You would just have to go to the dashboard and find it yourself. It wasn't a long-term viable solution for us, and limited expansion capabilities, difficult to maintain, so we are going to redesign the dashboard. I've found a free template to work with, which is always nice to get you started, which is a lot easier to manage and modify, and it is a clean and simple interface.

Also, as the web changes and moves forward and more people access information on their Smartphones, this particular framework also works well on mobile devices. It has got that built-in responsive design to it. That is a really neat feature of this next project. This is the screen grab of what that dashboard could look like with a neat toolbar and footer information for quick links to council pages or partners' pages. We keep working – the technology is always changing. We hope to have a new version of the dashboard out maybe next year, early next year. The Esri ArcGIS software continues to improve with each release.

We are at a version behind the current release. We'll be going to the next higher version pretty soon, and with that there will be options to attach documents, images, and our text files with a feature. When a viewer goes to the site and they're interested in getting regulations associated with a polygon, that information could be downloaded with the polygon itself, so that is going to be nice.

Another new feature that will come with the next version of the software is the ability to expose, relates and stand-alone tables with your GIS data. That is something that has been lacking for a long time. That will be a great way to take some more information that is available through the SEAMAP or MARMAP programs and make that information available on the web as well.

Security for map services should be coming with the next version or we could look at an ArcGIS online subscription to cover security issues. Another thing that we're going to be working on is creating cache services for some of those services that are very heavy image based like the multibeam and the nautical chart service; they're all images.

If you can cache those images and tile them in a service. then their draw time is a lot faster. More widgets, lots more tools available. There is a great community of people who share code on the Esri website. That is all available for free on the Flex viewer community page for Esri, so more tools and widgets.

Just real quick, the ArcGIS online is a new approach that Esri is offering. A lot of people can't afford ArcGIS server, so this is a way that you can share geographic information. Right now it is free, but I think in the future they will be charging for this service, which an annual subscription running $2,500 for a small workgroup with five people in your office, up to very expensive, close to $40,000 for perhaps an agency to use that service. It is pretty neat. They're doing a lot of cool stuff online where you don't have to mess with that server back in.

You can just take your data, put it up there and share it with whoever you like. I have my own personal account. As I mentioned, it is free right now. I've created just a few trial runs for the South Atlantic Council services and applications. There are different ways to view services. There is ArcGIS Online and there is ArcGIS Online Explorer, and I believe a lot of agencies are using this ArcGIS Online Explorer to serve their data.

I think the BOEHM Website serves their data this way. It is pretty cool, because you have capabilities to add data to a service. You can add your own ship track, your GPS log file, add it to the map. You could take your own SHAPE file or a comma delimited file, add it to this service through this interface and display data that way.

There are different base maps. You can change up your base maps on there. You can share your map that you create through social media or just an e-mail link. I was experimenting with this. You could take the code that the map makes and then embed it in your website. I apologize again, it is hard to read, but there is a mapping tab and a presentation tab. You can actually make slides through this interface; make a PowerPoint presentation to share maps that way. Then you could zoom in and out of this slide.

Once you share this slide, the user unless you lock it – there is a lock feature up here – unless you were to lock it, the user could zoom in and out and manipulate the map through a slide

presentation. It has got a lot of fun features and I think it will be neat to see what comes as that capability expands. I just wanted in my presentation to provide all the links for the dashboard and the different web applications that we're working on and take any questions or suggestions for moving forward.

MR. WILBUR: I have a couple questions. First, for the online GIS stuff now that is available through the council's website; is the council keeping any records of the frequency that those websites are used and maybe even who is using them?

MS. UDOUJ: We do keep track of that information. The web applications are kind of tricky in and of themselves to monitor traffic, because every zoom and pan counts as a hit. The numbers are difficult to interpret, but we do keep those log files from the web server. As far as how and who looks at it, I think you can get a general idea, maybe, based on the IP address, but not very specific for audience use.

MR. WILBUR: I'll ask a question I don't know the answer to, which is always dangerous, right? Of the folks sitting at the table, how many of you have accessed the council's GIS services through its website in the last year? If you have, raise your hand. Five people; not bad. Of the five people that raised your hand, what was your feeling; were you a satisfied customer once you got there and did you find what you were looking for, or do you have any suggestions on how to improve things?

AP MEMBER: I'll start off with I'm frustrated with using any computer or internet so I am not in that great age of – I went on the website looking for things to help me with this committee meeting a couple months before we had the meeting. I found it to be 60 to 80 percent useful; 20 to 40 percent frustrating.

Once I found what I was looking for, it made sense to look for it that way; but with my limited level of knowledge, I don't think the same way that the designers of the website think, just simple input. I still can't find all the maps you were talking about and I'm on the website right now. I still have that frustration going.

MS. UDOUJ: I think that's where there have not been a lot of updates. I think the council is in a transition stage with their home website. I'm surprised; I thought that those links would be available. Maybe the atlas is not on there just yet. That is one thing with the Dashboard that I want to do is have a GIS data catalogue and make it easier to search and find a particular data source that you're interested in.

It's one thing that we're just getting it all together, get it all together, get it all together, but then how do you find what you're looking for easily and make it useful? I appreciate those comments. I just look at it all day, every day. I am not a good person to critique it. We need feedback from users.

MR. WILBUR: I'll just add I know the council is aware that their website is less well organized than it should be and that some kind of makeover and reorganization of it to make it easier to find things and to go through fewer layers to get to where you want to go is at least on Roger's priority list. Hopefully, we can do some things to kind of elevate it on the council's priority list so maybe it can be cleaned up sooner than later. Any other comments from the users? Did you

find what you were looking for; is the quality underlying data what you expected it to be and that kind of stuff?

MR. WATTERSON: I've only worked with the website in terms of essential fish habitat and trying to access information about where it is and so forth. I think one of the great parts about the website is making that data available for downloads. That is great for us. Rather than using the site to actually map the data, we actually physically download it and we can use it to generate images and stuff for our environmental documents.

One other thing I have noticed is that a lot of the EFH that is designated, the information about those habitats and where they are isn't always available on the website even though a lot of that information is available to the general public, depending on where you go. We had to search for a lot of that data on where these different types of habitats are, because it wasn't available through the website. That would be my main concern.

MS. UDOUJ: That has been a data need is to revamp what we do have and make it better.

MR. WILBUR: Maintenance of the data is often neglected as the newer technologies come out and people want to embrace and focus on the newer capabilities. If the quality underlying data isn't sufficient to support these newer capabilities or support the value these newer capabilities could lead you to, eventually you end up with a disconnect.

I know the council is aware that many if not all of the GIS data for the essential fish habitat designations are well more than ten years old and really don't match what a lot of folks expectations are about what the underlying spatial resolutions and things are these days. Hopefully, we can work with the council to elevate that as a priority issue as well.

On the other side, we saw a lot of really new capabilities here. If we ask the same question a year from now as to who has been on it; of the folks who didn't raise their hand, how many of you expect to be raising your hand a year from now?

For the record, we'll note nearly everyone raised their hand. That's really good. Now you said you had some online capability here. And to build on one of the comments; can you go to the council's website, SAFMC.net and not your little shortcut to Florida Marine and show me how to get to some of these links. Todd.

DR. KELLISON: Tina, I'm not sure if we communicated about this, but a few months ago I was asked to give a presentation at a meeting that Pace attended that had something to do with essential fish habitat. I used the integrated map server to try to build some maps of that. It was really informative to me, but it also raised some questions about why certain areas weren't covered. Did I discuss this with you?

MS. UDOUJ: I don't think so.

DR. KELLISON: Okay. I tried to get some feedback from Roger, somewhat unsuccessfully. I wonder if we could use this as a case example, and specifically I was just trying to create a map of the distribution of essential fish habitat for the snapper grouper complex in the South Atlantic. It turns out there is what appears to be like down off the Florida Keys a big gap in the layers and

in what I feel like is just the Florida Keys coral reef track. I was just curious about that. Maybe we could demonstrate how you can indicate EFH coverage for a specific fishery management plan, the snapper grouper complex, and at the same time we could look at that issue.

MS. UDOUJ: I'm thinking about your question and we'll zoom into that area. We made this EFH layer many years ago. We were just trying to find what data sources were out there and put them together. It could be that what is described in the documentation and what EFH is not represented in this layer, there should be probably more disclaimers. Our IMS site had a good disclaimer on it like this is not the final rule this is just a representation of existing sources. But we'll go check it out.

DR. KELLISON: The feedback that I did get, like from Myra, was like it appears that those are the layers and it is not clear why those gaps are there.

MR. WATTERSON: Maybe we could establish a working group to focus on that. I'd be happy to sit on it. I don't know if Todd would be willing to sit on it as well, I don't want to speak for him, but, sure. It is something we could definitely help with. I know a lot of the federal agencies that have to work with this data are frustrated with the lack of available data.

I can't speak for other federal agencies. I know BOEHM has done a lot of work and maybe we can incorporate them as well, but I know particularly on the Navy side we've compiled a lot of these data and where these different habitat types are, just so we can meet our regulatory requirements. That is data we'll be happy to provide and share.

MS. UDOUJ: Great! Yes, I know Pace has been frustrated forever.

MR. WILBUR: While Tina is trying to reload the data, I'll just put out a question to the group. One thing that Roger and I have talked about that you saw just the tip of the iceberg on is that we do roughly a thousand EFH consultations each year in the South Atlantic Region. You know, 150, 200 of those result in some sort of detailed kind of comment letter back to the Federal Action Agency. All of that stuff is done electronically and can be tied to a map.

Is there any value to having those 200 points a year that result in a comment letter displayed on a map with the idea that you could then click on the dot and see the comment letter? Is that something that you think would be broadly useful for people or is that just sort of cluttering up the internet with spam? Do you want all our comment letters to be downloadable from a map on the council's website?

MS. UDOUJ: Roger does.

MR. WATTERSON: Only if you include the action agency's response letter with those.

MR. WILBUR: Okay, there is no reason we can't do that.

MR. WATTERSON: I mean it would help. I know a lot of federal agencies it is always nice to be able to go and look at other consultations to see what has been done and what the outcomes were. It would be helpful or us, but I don't know about everybody else.

AP MEMBER: It may help you in terms of cumulative effects and looking at things spatially.

MR. WILBUR: Internally we already have the GIS layer. We produce it and use it ourselves. The question is do we then go to the next step to work with Roger to put it on a GIS server so that people now outside of the Fisheries Service have access to what we inside the Fisheries Service have or are we really still talking about a fairly small boutique kind of use?

MR. STREET: One of the questions that Anne asked me to ask, and I forgot to earlier, when we were talking about the policies; are they being used, are they being applied, and are they getting any results? This gets to what comments have the council sent; what have been the results? Have they said, oh, thank you for your comment and you never hear from them again?

Has the project been modified in response to the comments or anything like that? Since all comment letters for X number of years has been electronic, those files, given a little bit of time for someone to do it, can be attached. I know similarly the Division of Marine Fisheries database is all tied to specific locations. Every sample has a location.

This goes back to the old stuff that was entered in it. It is supposed to go back way into the seventies, maybe even into the late sixties where every sample you can click on a site and get down and get to a given sample. Then there is a layer of the catch, the measurements if the fish were measured, weighed, whatever information goes with essentially an individual fish.

That's I guess why there is four and a half, five and a half million records in the database. A weakness of the Division of Marine Fisheries database is it is not available online. You have to contact them, ask for it and you can get it. But specifically for habitat, it might be useful to see if there are comments and if there has been any results from those comments. Because if we have these policies in place and they are either not being used or their use is not generating anything, then there are some problems to be evaluated.

MR. WILBUR: All right, I'll answer that question and then turn it back to Tina. We do periodically do those assessments. We do not do as much as we should about sharing the results of those assessments with this group, the corresponding group, the Atlantic States Commission and other groups that I think are kind of the stakeholders in the coastal management world.

That is something that I can take as an action item for me to essentially produce a report card on the EFH program and its execution in the South Atlantic and provide that back to you. Since we are just coming off of our end of FY-12 reporting process, I can tell you what we reported up the chain.

The caveat I will keep in mind is that while there is a requirement for federal action agencies to report back to the Fisheries Service on the result of what they did with the EFH conservation recommendations they received, the actual compliance with that requirement is spotty. To be kind of, I guess pleasantly situation, North Carolina is probably the core district that is in least compliance with that reporting back.

But I will also tell you from our testing of the missing compliance letters; they have by far the highest rate of doing what we tell them to do compared to the other core districts. The basic

view in North Carolina is they are doing exactly what we told them to do so they don't need to send us back a letter on that point.

We are working to kind of close that kind of data gap with the Wilmington district. When you look at it across the four districts that represent the South Atlantic, Jacksonville, Savannah, Charleston and Wilmington, there are two metrics that the Fisheries Service regularly uses to report on how well things are going, one metric is was the project changed in any way as a result of the consultation?

That number is typically in the 80 to 90 percent kind of range is answered yes. Now, of course, you can jury rig that system like can you say something like put in a turbidity curtain when you dredge, which is what the Corps would do, anyway, whether they were told to do it or not, so it is easy to kind of fluff that number up a little bit, not really intentionally, but just the process itself lends I think to that number being fluffed a little bit.

The more stringent measure is when you ask the biologist at the end of the project are they totally satisfied in every way, shape and form with how the Corps responded back, or the Navy, or whoever the federal action agency is to those EFH conservation recommendations, that level of total satisfaction is in the 50 to 60 percent range.

Those numbers of 50 to 60 percent, which is what the FY1-2 number was, that has been pretty consistent for at least the last five years; as far back as we're maintaining those kinds of records. It is generally higher than people suspected. What we're not doing well enough at all is pulling this together into some kind of cool, slick-looking report card and distributing that externally.

That is something we could work on. Now the more difficult metric that we get asked to do is go from this qualitative assessment and turn it into quantitation, such as acres conserved or protected, acres restored kind of a thing. The acreage numbers are very difficult to do, because the regulations that the Corps of Engineers must operate under do not require them to receive an accurate description of the project in order for the project to go out on public notice and initiate a consultation.

While we'll know fairly accurately the acreage of impact by habitat at the end of the process, we don't know what the acreage is by habitat at the start of the process unless we start making a whole lot of suppositions and staring at maps ourselves and drawing polygons and whatever GIS software we choose to draw it in. We don't have that kind of baseline to build off of. Again, we are under pressure to try and fix that process, but that seems like a difficult one to fix. Focusing more on these qualitative assessments I think is something we could do. All right, Tina, back to you.

MS. UDOUJ: Todd and I had a discussion about his question. What he is perceiving as data gaps with the particular layer is true. The data could be in a different layer and it should be incorporated into the Snapper Grouper EFH or EFH-HAPC. But I've gone in and turned on the SEAMAP data. He was concerned that the reef tracks weren't populated. The red cells are indicating hard bottom and the green not – or the green is, I'm not sure, because there are so many layers turned on.

This should be revamped with the best possible data available. Pace has mentioned scale before, and that is not really defined well for EFH either. Todd, there is some more data than appeared, but it is not in that particular layer.

DR. KELLISON: Right, the points everyone can see just so the Keys are running south and then over to the west and there is this sort of oval area that is blue right in there that I think is reef track and a little deeper than that. That is just part of the main Florida Keys Coral Reef Track. Then if you look up a little bit higher from that, the area off of – right at the bottom of the screen right there; that is like the area off of Key Largo, which is also prime reef track. If you go up even higher up there farther north, just north of Canaveral, you can't see it now because it is all – maybe you can it will take a second for this to fill in. There you go; what are all the squares?

MS. UDOUJ: That's the SEAMAP stuff.

DR. KELLISON: If you took away the SEAMAP database, you would see that inshore just north of Canaveral there is a big gap also. I think a lot of that area is low-relief hard-bottom. That is important, like red snapper, black sea bass habitat as well. Anyway, it was just curious to me.

Also an interesting thing is if you plot this essential fish habitat for the snapper grouper complex for the South Atlantic, the message that you get mostly is that you see two big layers. One is the Gulf Stream layer and the other is – I've forgotten what it is called, but like continental margin/sand habitat. It looks like the entire South Atlantic, which goes way out past the Continental Shelf onto the slope. It is either just Gulf Stream or sand, which is interesting. Part of it I think is because layers of all the different categories of EFH maybe were lying on top of each other, I don't know.

MS. UDOUJ: Yes, there is that, too.

DR. KELLISON: Those were just some interesting issues, but the good thing is that I was able to very quickly like just Google South Atlantic Fishery Management Council IMS, find this, figure out how to – like it took me just a few minutes to get EFH layers to show up. Then the time I spent really was trying to figure out why it looked like it did. I thought it was really pretty easy to use, but then it took me a while to interpret the results, which we're still sort of doing, obviously. Thank you.

MR. WILBUR: Maybe you've got a bunch of different web services here. It may be useful that a fairly simple and focused web service that did nothing more than display the EFH designations would be a good one to add to the portfolio. That could allow you to kind of in a very focused environment have the GIS layer and the text kind of there at the same time so you can sort through the complications that sort of arise at times when you have the Gulf Stream current tied to the same layer that also is showing hardbottom and things like that.

MS. UDOUJ: Good idea.

MR WILBUR: I guess someone did suggest that there was at least some interest maybe in establishing some kind of little workgroup to kind of examine the GIS layers a little more carefully and suggest some things. It was Carter, okay. For the record, the Navy has

volunteered to do that. I know Roger used to have a workgroup that did do – I went to a meeting in St. Pete one time where we all talked about data layers and IMS services and stuff like that. It has been a while since that group has met.

MR. WATTERSON: Like I say, we've already pulled a lot of this information together and we've identified whatever issues are in the database currently for the South Atlantic. We'll be happy to work with whomever. We just need a list of people that are interested in being on the workgroup and working in that and points of contact.

MR. WILBUR: Are you done?

MS. UDOUJ: Yes, I'm done here; thank you.

MR. WILBUR: Terry is next on deck, right?

MR. PRATT: All right, what I'm going to do is provide you with a few moments to step outside your computer-generated box and walk in my world. I don't own a computer. I will probably take Pace's and totally wipe it out if I tried to work it. But what I've got are some samples out of a layer of strata that comes from the western bank of Chowan River, which is on the northwest corner of Albemarle Sound in northern North Carolina.

The pictures, if you'll look at them, will give you the relationship of where this strata lies and the river. I've been at this point since I was five years old; I'm 69. During those 64 years I have been a commercial fisherman, a farmer, a building contractor, and I've been on more environmental advisory committees than I can count, before Mike Street even started.

I'm going to send this around and if you would look at the pictures first and then send them on and look at the samples that come from this layer of strata, the two clam shells in here hold the material that this level is made of. I would tell you that piece of coral, Pace, and those shells are, plus or minus, as two million years old. They are plentiful. If you drop one and break it, don't worry about it. It's not going to hurt this thing.

But it will give you an idea hopefully of how I think and where my opinions come from on different things. I understand the benefits of computer-generated data and the ability to pull a wide array of data together at one time. However, I think you should temper any decisions you make with knowledge that can be gained from where I get mine, from looking at that basis and from getting my hands wet and being involved in fisheries for a very long time and looking at that fishery from a standpoint of utilizing it in a sensible manner.

I don't like the word sustainable. Sustainable means in council terms we're going to put everything here and by rules and regulation it is going to stay there. Well, it's not. You can't have bluefish and herring at the same time. They are going to do like this, so are other species, so are some shellfish, so are a lot of things, so are seagrass; submerged aquatic vegetation in the estuaries in all our states.

A couple of those pictures of the beach and the bluff face show material on the beach. That is submerged aquatic vegetation that washes up every time the wind picks up. When I grew up, that river was devoid of submerged aquatic vegetation. It only appeared 15 years ago

somewhere and it is steadily increasing. But when it appeared, the clarity of that river system was such that in 12 feet of water you could look down in the summertime if the sun was directly overhead, and you could tell which side of a quarter was up.

Now, that triggered that water clarity, I don't know. I've never found out and never could figure out because most of the land-use practices remain the same. I don't know why it did it. But in the past few years, that trend is reversing itself. That river system has gone back to a naturally black water river system. It is tan in color, it is a dark brown.

That is probably going to trigger a decrease in that vegetation. If that is a natural process, then it doesn't make sense to me to make rules to preserve submerged aquatic vegetation. I'm just picking on this because it is handy. The same thing is true with that coral. That piece of coral is two million years old; and if you look at that picture of the river and the bluff face, there is a difference in color. At the top of that dark layer is where that strata is.

That bluff face is about 70 feet high. A hundred feet below that layer is another layer straight down, and two hundred feet below that one is another layer straight down. Climate change is coming, people. Neanderthal didn't burn petroleum products. The world didn't get involved in industrial processes, but those changes occurred.

That change of strata in that level, when it went from blue mud to white sand, that was a rapid change, because in a lot of places above that strata of blue mud is a layer of limonite, which is a sorry grade iron ore. It ranges from a foot to ten feet thick. It's horizontal in that bluff face. On top of that layer of limonite in a lot of places is a material that I've never had anybody tell me what it is, but what it was is a mud flat, a tidal mud flat, because you can see root tracks, you can see burrow holes, you can see a lot of things.

From the time that ocean bottom was there, there is maybe that much to the limonite and on top of that limonite is that layer of mud. Now that change occurred probably in thousands of years, not millions. What we're living in, the period of time we're living in we are at the end of that change process. We are seeing changes develop rapidly.

Rapidly means probably hundreds of years, not thousands. If you don't think sea level is rising, that bluff face loses on an average probably 15 feet a year straight in. That river at that point is about two miles wide. It is getting wider. On the eastern bank is swamp; and from there to the coast, the highest place is probably 15 feet above sea level on the northern shore and 8 or 9 feet.

MR. STREET: At most.

MR. PRATT: At most on the southern shore. When that sea level rises, it is going to definitely affect that system. What I try to incorporate in my decision-making process is the knowledge that we deal in a specific timeframe. We make rules effecting within a hundred year time span. Sometimes I think we go overboard in the regulatory process that limits our ability to be a fisherman, to be a scientist, to be a developer, to be a carpenter, whatever.

When a species is listed on the endangered species list, it totally curtails a lot of activity. The bottom-line fact is that species may no longer be acceptable in the system. If the system is going to change itself, then I think we spend an awful lot of time in a futile effort to save something

that is not going to be accepted. A sturgeon is a good example. We have in North Carolina had a ban on sturgeon for 20 or more years.

MR. STREET: Since the eighties it has been illegal to possess a sturgeon in North Carolina.

MR. PRATT: Possess a sturgeon, but that fish has maintained its population level at the same or better than it was when I started fishing. There are a lot of historic records of sturgeon caught, just as there are historic records of striped bass caught in the same fisheries in Albemarle Sound of over 100 pounds. That is true; but if you go back and look at those records, they count three fish.

Why would you strive to manage a system to produce hundred pound fish when it is not the norm? Striped bass went under management. They were declared fully recovered in 1997. They are very prolific and very abundant; yet we have never relaxed the rules to allow that fish to be targeted again in North Carolina.

I preface that by saying that is my opinion, overabundance. We don't control that really, but the overabundance of striped bass could be a factor in why there are less shad, less herring, less trout, less small fish. If you have that viable a stock of fish, you have got to feed it with something. If it disturbs the balance, then maybe we caused it, I don't know.

But what I am doing in my opinion here is qualifying my judgment calls on what I see and how I'm involved in it, and how I work to hopefully put common sense into regulation space and not just, oh, my God, we've got to save it regardless of what it does. Like I've said, I've been at this a long time. When I started, Mr. E. C. Hubbard was the director of water quality. I don't know whether you remember him or not. That was a long time ago.

MR. STREET: Yes, he left shortly after I started.

MR. PRATT: But, we were at a hearing, and I think it was Roanoke Rapids and on something to do with pulp mills, and discharging effluent and how it was discharged and what it affected. Mr. Hubbard asked, "Well, does anyone have a recommendation that would solve this problem?" I said, "Mr. Hubbard, I've got one that will fix it." "All right, Terry what's that?" I said, "You require that any discharge be 100 yards upstream from any water intake."

If he's going to get back what he's going to put in, that will fix the problem. Well, needless to say, they didn't do that. But that reasoning is sound, it makes sense, because anytime any entity comes before a board to request a permit then, oh, yes, we are going to clean up what we've got. It's going to be good. It's not going to hurt anything.

But that doesn't prove true, and sometimes our thinking process gets caught up in that same thing, Pace. We get caught up; we're involved in developing this database. We're involved in getting it set up; we're involved and look at that and we fail to look outside that box. I don't mean to belittle or demean anyone for using computers; it is a good tool.

In today's world it is required. It would be nice if it was not. If I could go get in my truck and it had a carburetor and a distributor and a set of points, I could fix it. But now it doesn't and I've got to ask the computer what is wrong with it if it doesn't run. We sometimes get so involved

and wrapped up in technology that we lose touch with reality. I think that is what I'm saying to you today is that because I think outside the box; and as my girlfriend, Cathy, says you live under a rock. I do, but I can crawl under that rock sometimes and it is safe. But I'm asking you to consider my line of reasoning when you make decisions; to look at it from a standpoint of the total picture.

When we dig out an inlet for a beach, Mike, what does that do when the bottom line is in a hundred years that beach probably isn't going to be there, anyway? Why should the taxpayers have to pay for fixing that beach or paying for Pace's beach house when it gets blown in the ocean?

MR. WILBUR: I do not have a beach house, for the record.

MR. PRATT: Okay, but the principle is the same, Pace. I'm just attempting to make you aware, Jenks, of how I think and why I think that way and what I use as parameters when I make a decision on am I going to support this or not?

MR. WILBUR: Just out of curiosity, does North Carolina Department of Transportation seek your input on the repair of NC12 and the Bonner Bridge?

MR. PRATT: Well, I think North Carolina is going to utilize those banks as long as they exist. If they're going to do that, they are going to have to build a short bridge very quickly. NC12, you are going to have to accept the fact that nature is getting rid of those banks. They are going to not move; they are going to disintegrate. They are going to sink. They are steadily moving westward and they have been for a long time.

I've got a good friend, Stan Rig, who is a geologist. Stan, he comes to my place with his class and he's due back in December, but he brings them down because that is a classic example of how timelines can be stratified. I got him confuddled the other day; that's a word means he doesn't know what he's looking at. A little bit south of that point, as these bluff faces keep sloughing off and sloughing off, you see more and more different things.

Now John Reed referred to diversity on a coral reef. The diversity in that strata level is amazing, but the smaller shells are very fragile. If I brought to them to you, all you would have is a handful of mush. I walk that river shore on a regular basis. I was walking the other day, and at one point that layer of limonite is about as thick as this table.

The limonite is probably five feet above those strata of blue mud, and a foot below the limonite, between the limonite and the blue mud there is a tree trunk that is about 20 to 22 inches in diameter. It lies perpendicular to the face of the bluff. There is no way that piece of wood could have gotten there except that it was there when that layer of limonite formed.

I asked Stan how old is that? He said, "Damned if I know." I said, "Well, can't you carbon date it and all that? That don't go but 30,000 years and you're a whole lot older than that." There are a lot of things that occur in nature that we can't explain. Underneath that limonite there is a lot of wood; because when it falls off and comes down to the beach, it gets turned over and you can see imprints of limbs and trees. John knows what I'm talking about, because he sees it at Roanoke. That river and the Roanoke, one bank is high, the opposing bank is swamp.

Stan said that is right along the Suffolk Escarpment so that tells me the land faces either up or down. My grandmamma told me that the Lord always dug a river going upstream so he didn't have to work with water coming down in the mud, and he was left handed so he threw all the dirt – that's just as good an explanation as I know of.

But I hope I've provided you with a few moments of lighter entertainment, if you will, and given you a deeper insight into how I think and how we can broaden our perceptions and our rule-making abilities to include looking after the people first. That's what we need to do, Bill. We need to look after people before the critters and the creatures and the fish and the coral. Thank you, Mr. Wilbur, for that few minutes.

MR. WILBUR: Thank you, Mr. Pratt. All right, any other comments for the good of the order? Okay we are done.

(Whereupon, the meeting was adjourned November 15, 2012.)

Certified By: _____ Date: _____

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Habitat & Environmental Protection Advisory Panel

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November 14, 2012
N. Charleston, SC

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Habitat & Environmental Protection AP Meeting
November 15, 2012
N. Charleston, SC

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Attendee Report

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General Information

Webinar Name
SAFMC Habitat Advisory Panel

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Nov 14, 2012 07:21 AM EST

Actual Duration (minutes)
241

Clicked Registration Link
51

Opened Invitation
60

Total Attended
12

Session Details

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Attended Yes

Registration Date Nov 14, 2012 11:21 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest: 0

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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Attended Yes

Registration Date Nov 13, 2012 01:56 PM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 08:32 AM EST	Nov 14, 2012 11:20 AM EST	168.1

Interest Rating

Attendee's In-Session Level of Interest: 39

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

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Registration Date Nov 13, 2012 02:09 PM EST

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In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 08:29 AM EST	Nov 14, 2012 11:21 AM EST	172

Interest Rating

Attendee's In-Session Level of Interest: 56

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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Registration Date Nov 14, 2012 11:06 AM EST

Organization

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In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 11:06 AM EST	Nov 14, 2012 11:20 AM EST	12.43

Interest Rating

Attendee's In-Session Level of Interest: 4

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Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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Organization

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In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 11:19 AM EST	Nov 14, 2012 11:20 AM EST	1.53

Interest Rating

Attendee's In-Session Level of Interest: 0

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Reid,Richard	seamar82000@gmail.com

Attended Yes

Registration Date Nov 13, 2012 07:51 PM EST

Organization Deepwater AP member

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 07:50 AM EST	Nov 14, 2012 11:21 AM EST	210.78

Interest Rating

Attendee's In-Session Level of Interest: 56

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Mehta,Nikhil	nikhil.mehta@noaa.gov

Attended Yes

Registration Date Nov 05, 2012 12:34 PM EST

Organization NMFS

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 09:07 AM EST	Nov 14, 2012 11:21 AM EST	133.7

Interest Rating

Attendee's In-Session Level of Interest: 37

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

beckwith,anna	annabarriosbeckwith@gmail.com

Attended Yes

Registration Date Nov 12, 2012 10:13 AM EST

Organization safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 08:42 AM EST	Nov 14, 2012 11:20 AM EST	158.57

Interest Rating

Attendee's In-Session Level of Interest: 18

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

c,m	mec181@yahoo.com

Attended Yes

Registration Date	Nov 14, 2012 09:33 AM EST
Organization	SA
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 09:33 AM EST	Nov 14, 2012 11:20 AM EST	107.07

Interest Rating

Attendee's In-Session Level of Interest: 5

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Merrifield,Michael	mikem@wildoceanmarket.com

Attended Yes

Registration Date	Nov 14, 2012 08:43 AM EST
Organization	Cape Canaveral Shrimp Co.
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 08:43 AM EST	Nov 14, 2012 11:20 AM EST	157.28

Interest Rating

Attendee's In-Session Level of Interest: 54

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

ODell,julie	julie.odell@safmc.net

Attended Yes

Registration Date Nov 14, 2012 07:48 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 07:49 AM EST	Nov 14, 2012 11:21 AM EST	55.47

Interest Rating

Attendee's In-Session Level of Interest: 52

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Pugliese,Roger	roger.pugliese@safmc.net

Attended Yes

Registration Date Nov 14, 2012 08:00 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 08:00 AM EST	Nov 14, 2012 11:20 AM EST	199.68

Interest Rating

Attendee's In-Session Level of Interest: 23

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Newton,Robert	rnewton@tnc.org

Attended No

Registration Date Nov 13, 2012 08:25 AM EST

Organization The Nature Conservancy

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Farmer,Nick	nick.farmer@noaa.gov

Attended No

Registration Date Nov 05, 2012 01:17 PM EST

Organization NOAA Fisheries

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

g,a	andrea.grabman@safmc.net

Attended No

Registration Date Nov 14, 2012 11:46 AM EST

Organization sedar

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Pugliese,Roger	toger.pugliese@knology.net

Attended No

Registration Date Nov 13, 2012 01:16 PM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Reichert,Marcel	reichertm@dnr.sc.gov

Attended No

Registration Date Nov 05, 2012 11:47 AM EST

Organization SC-DNR / SSC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

lederhouse,terra	terra.lederhouse@noaa.gov

Attended No

Registration Date Nov 05, 2012 01:40 PM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Jones,Nancy	diveindude@comcast.net

Attended No

Registration Date Nov 12, 2012 10:51 PM EST

Organization Deep Water AP

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Duval,Michelle	michelle.duval@ncdenr.gov

Attended No

Registration Date Nov 05, 2012 02:43 PM EST

Organization NC Division of Marine Fisheries

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Attendee Report

GoToWebinar

Generated

Nov 15, 2012 11:12 AM PST

General Information

Webinar Name
SAFMC Habitat Advisory Panel

Webinar ID
151475074

Actual Start Date/Time
Nov 14, 2012 12:36 PM EST

Actual Duration (minutes)
219

Clicked Registration Link
51

Opened Invitation
60

Total Attended
13

Session Details

Barile,Peter — **abaco711@hotmail.com**

Attended Yes

Registration Date Nov 13, 2012 01:56 PM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 01:35 PM EST	Nov 14, 2012 03:16 PM EST	100.37

Interest Rating

Attendee's In-Session Level of Interest: 60

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

c,m — **mec181@yahoo.com**

Attended Yes

Registration Date Nov 14, 2012 09:33 AM EST

Organization SA

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 01:27 PM EST	Nov 14, 2012 03:40 PM EST	132.95

Interest Rating

Attendee's In-Session Level of Interest: 43

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Merrifield,Michael	mikem@wildoceanmarket.com

Attended Yes

Registration Date Nov 14, 2012 08:43 AM EST

Organization Cape Canaveral Shrimp Co.

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 02:15 PM EST	Nov 14, 2012 03:08 PM EST	53.02

Interest Rating

Attendee's In-Session Level of Interest: 47

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

lederhouse,terra	terra.lederhouse@noaa.gov

Attended Yes

Registration Date Nov 05, 2012 01:40 PM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 01:45 PM EST	Nov 14, 2012 01:47 PM EST	2.23

Interest Rating

Attendee's In-Session Level of Interest: 28

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Hudson,Russell	dsf2009@aol.com

Attended Yes

Registration Date Nov 13, 2012 02:09 PM EST

Organization Directed Sustainable Fisheries, Inc.

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 01:09 PM EST	Nov 14, 2012 04:13 PM EST	183.73

Interest Rating

Attendee's In-Session Level of Interest: 48

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mehta,Nikhil	nikhil.mehta@noaa.gov

Attended Yes

Registration Date Nov 05, 2012 12:34 PM EST

Organization NMFS

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:36 PM EST	Nov 14, 2012 04:05 PM EST	151.2

Interest Rating

Attendee's In-Session Level of Interest: 57

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Mahood,Robert	robert.mahood@safmc.net

Attended Yes

Registration Date	Nov 14, 2012 11:22 AM EST
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:36 PM EST	Nov 14, 2012 04:17 PM EST	220.37

Interest Rating

Attendee's In-Session Level of Interest: 30

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

g,a	andrea.grabman@safmc.net

Attended Yes

Registration Date	Nov 14, 2012 11:46 AM EST
Organization	sedar
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:36 PM EST	Nov 14, 2012 04:13 PM EST	203.28

Interest Rating

Attendee's In-Session Level of Interest: 30

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

ODell,julie	julie.odell@safmc.net

Attended Yes

Registration Date Nov 14, 2012 07:48 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:39 PM EST	Nov 14, 2012 12:47 PM EST	7.3

Interest Rating

Attendee's In-Session Level of Interest: 59

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Reid,Richard	seamar82000@gmail.com

Attended Yes

Registration Date Nov 13, 2012 07:51 PM EST

Organization Deepwater AP member

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:36 PM EST	Nov 14, 2012 04:15 PM EST	219.1

Interest Rating

Attendee's In-Session Level of Interest: 60

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Pugliese,Roger	roger.pugliese@safmc.net

Attended Yes

Registration Date Nov 14, 2012 08:00 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:46 PM EST	Nov 14, 2012 04:13 PM EST	207.25

Interest Rating

Attendee's In-Session Level of Interest: 42

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

DeVictor,Rick	rick.devictor@noaa.gov

Attended Yes

Registration Date Nov 14, 2012 11:18 AM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 12:48 PM EST	Nov 14, 2012 04:16 PM EST	202.93

Interest Rating

Attendee's In-Session Level of Interest: 37

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

beckwith,anna	annabarriosbeckwith@gmail.com

Attended Yes

Registration Date Nov 12, 2012 10:13 AM EST

Organization safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 14, 2012 01:35 PM EST	Nov 14, 2012 03:28 PM EST	112.38

Interest Rating

Attendee's In-Session Level of Interest: 52

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

schnitzlehiesen,pooky bear	kari.maclauchlin@safmc.net

Attended No

Registration Date Nov 14, 2012 11:06 AM EST

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Pugliese,Roger	toger.pugliese@knology.net

Attended No

Registration Date Nov 13, 2012 01:16 PM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Duval,Michelle	michelle.duval@ncdenr.gov

Attended No

Registration Date Nov 05, 2012 02:43 PM EST

Organization NC Division of Marine Fisheries

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Newton,Robert	rnewton@tnc.org

Attended No

Registration Date Nov 13, 2012 08:25 AM EST

Organization The Nature Conservancy

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Farmer,Nick	nick.farmer@noaa.gov

Attended No

Registration Date Nov 05, 2012 01:17 PM EST

Organization NOAA Fisheries

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Reichert,Marcel	reichertm@dnr.sc.gov

Attended No

Registration Date Nov 05, 2012 11:47 AM EST

Organization SC-DNR / SSC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Jones,Nancy	diveindude@comcast.net

Attended No

Registration Date Nov 12, 2012 10:51 PM EST

Organization Deep Water AP

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Mahood,Robert	robert.mahood@safmc.et

Attended No

Registration Date Nov 14, 2012 11:21 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Mahood,Robert	robert.mahood@safmc.net

Attended No

Registration Date Nov 14, 2012 11:22 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Attendee Report

GoToWebinar

Generated

Nov 15, 2012 11:10 AM PST

General Information

Webinar Name
SAFMC Habitat Advisory Panel

Webinar ID
572124402

Actual Start Date/Time
Nov 15, 2012 07:30 AM EST

Actual Duration (minutes)
261

Clicked Registration Link
26

Opened Invitation
51

Total Attended
14

Session Details

Bell,Melvin	bellm@dnr.sc.gov

Attended Yes

Registration Date Nov 05, 2012 11:47 AM EST

Organization SCDNR

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:03 AM EST	Nov 15, 2012 09:09 AM EST	5.35

Interest Rating

Attendee's In-Session Level of Interest: 62

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Jones,Nancy	diveindude@comcast.net

Attended Yes

Registration Date Nov 12, 2012 10:52 PM EST

Organization Deep Water Shrimp AP

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:32 AM EST	Nov 15, 2012 11:28 AM EST	176.17

Interest Rating

Attendee's In-Session Level of Interest: 44

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

beckwith,anna	annabarriosbeckwith@gmail.com

Attended Yes

Registration Date Nov 12, 2012 10:14 AM EST

Organization safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:32 AM EST	Nov 15, 2012 11:29 AM EST	176.48

Interest Rating

Attendee's In-Session Level of Interest: 40

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Pugliese,Roger	roger.pugliese@safmc.net

Attended Yes

Registration Date Nov 15, 2012 08:36 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:36 AM EST	Nov 15, 2012 11:30 AM EST	173.77

Interest Rating

Attendee's In-Session Level of Interest: 63

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

jolley,john	jolleyjw@yahoo.com

Attended Yes

Registration Date	Nov 06, 2012 09:06 AM EST
Organization	WPBFC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:44 AM EST	Nov 15, 2012 09:20 AM EST	35.97

Interest Rating

Attendee's In-Session Level of Interest: 37

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Smart,Tracey	smartt@dnr.sc.gov

Attended Yes

Registration Date	Nov 15, 2012 09:31 AM EST
Organization	SCDNR
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:32 AM EST	Nov 15, 2012 11:15 AM EST	96.25

Interest Rating

Attendee's In-Session Level of Interest: 28

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Iverson,Kim	kim.iverson@safmc.net

Attended Yes

Registration Date	Nov 15, 2012 10:31 AM EST
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 10:31 AM EST	Nov 15, 2012 11:43 AM EST	72.27

Interest Rating

Attendee's In-Session Level of Interest: 50

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Hudson,Russell	dsf2009@aol.com

Attended Yes

Registration Date	Nov 13, 2012 02:13 PM EST
Organization	DSF, Inc.
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:32 AM EST	Nov 15, 2012 11:29 AM EST	176.67

Interest Rating

Attendee's In-Session Level of Interest: 65

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Pugliese,Roger	roger.pugliese@knology.net

Attended Yes

Registration Date	Nov 13, 2012 01:16 PM EST
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 07:59 AM EST	Nov 15, 2012 08:36 AM EST	37.03

Interest Rating

Attendee's In-Session Level of Interest: 54

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Newton,Robert	rnewton@tnc.org

Attended Yes

Registration Date	Nov 13, 2012 08:24 AM EST
Organization	The Nature Conservancy
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:26 AM EST	Nov 15, 2012 11:52 AM EST	121.57

Interest Rating

Attendee's In-Session Level of Interest: 28

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

buscher,deb	deb.buscher@safmc.net

Attended Yes

Registration Date Nov 15, 2012 08:41 AM EST

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 08:42 AM EST	Nov 15, 2012 09:05 AM EST	23.48

Interest Rating

Attendee's In-Session Level of Interest: 23

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mahood,Robert	robert.mahood@safmc.net

Attended Yes

Registration Date Nov 15, 2012 09:10 AM EST

Organization safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:10 AM EST	Nov 15, 2012 11:29 AM EST	139.15

Interest Rating

Attendee's In-Session Level of Interest: 32

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

c,m	mec181@yahoo.com

Attended Yes

Registration Date	Nov 15, 2012 09:09 AM EST
Organization	SA
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:10 AM EST	Nov 15, 2012 11:52 AM EST	162.02

Interest Rating

Attendee's In-Session Level of Interest: 43

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

lederhouse,terra	terra.lederhouse@noaa.gov

Attended Yes

Registration Date	Nov 05, 2012 01:40 PM EST
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Nov 15, 2012 09:46 AM EST	Nov 15, 2012 11:10 AM EST	82.58

Interest Rating

Attendee's In-Session Level of Interest: 37

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Duval,Michelle	michelle.duval@ncdenr.gov

Attended No

Registration Date Nov 05, 2012 02:42 PM EST

Organization NC Division of Marine Fisheries

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mehta,Nikhil	nikhil.mehta@noaa.gov

Attended No

Registration Date Nov 05, 2012 12:33 PM EST

Organization NMFS

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Barile,Peter	abaco711@hotmail.com

Attended No

Registration Date Nov 13, 2012 03:14 PM EST

Organization abaco711@hotmail.com

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Pugliese,Roger	toger.pugliese@safmc.net

Attended No

Registration Date Nov 15, 2012 07:26 AM EST

Organization SAFMC

Unsubscribed Bounce

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

Reichert,Marcel	reichertm@dnr.sc.gov

Attended No

Registration Date	Nov 05, 2012 11:47 AM EST
Organization	SC-DNR / SSC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)

Interest Rating

Attendee's In-Session Level of Interest:

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.