SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Crowne Plaza Hotel
North Charleston, SC

October 23-25, 2012

SUMMARY MINUTES

SSC Committee

Dr. Luiz Barbieri, Chair
Dr. Marcel Reichert, Vice-Chair
Dr. Jim Berkson
Dr. John Boreman
Dr. Jeff Buckel
Chip Collier
Dr. Scott Crosson
Dr. Churchill Grimes
Dr. Tracy Yandle
Anne Lange
Dr. Sherry Larkin
Dr. Eric Johnson
Dr. George Sedberry
Dr. John Whitehead
Dr. Doug Vaughan
Dr. Carolyn Belcher
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Dr. Doug Butterworth
Kenny Fex
Rusty Hudson
Mark Brown
Katelin Shugart-Schmidt
Dr. Rick Hart
Dr. Nick Farmer
Dr. Kyle Shertzer
Sean Gillian
Lew Coggins
Dr. Alec MacCall

Other Attendees Attached

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The Science and Statistical Committee of the South Atlantic Fishery Management Council convened in the Crowne Plaza Hotel, North Charleston, South Carolina, Tuesday morning, October 23, 2012, and was called to order at 8:30 o'clock a.m. by Chairman Luiz Barbieri.

DR. BARBIERI: Good morning everybody. Welcome to the October 2012 South Atlantic SSC Meeting. My name is Luiz Barbieri, and I'm the Chair of this committee. We are going to start by asking folks if you are not a member of the SSC, would you please go here to the council desk and sign in. We have a book there to record all attendees to our meeting.

We have a full agenda, as I'm sure all of you have seen, but also exciting agenda. We have a lot of interesting items to discuss. Beginning this morning, let's start by having our voice recognition for the administrative record.

DR. VAUGHAN: I am Doug Vaughan. This is my first full meeting of the SSC other than the Data-Poor Workshop that I attended in August. I'm from Beaufort, North Carolina.

DR. BERKSON: Jim Berkson, NMFS Southeast Fisheries Science Center.

MS. LANGE: Anne Lange.

DR. YANDLE: Tracy Yandle.

DR. BUCKEL: Jeff Buckel.

DR. GRIMES: Churchill Grimes.

DR. JOHNSON: Eric Johnson.

DR. ERRIGO: Mike Errigo, council staff.

MR. CARMICHAEL: John Carmichael, council staff.

DR. BARBIERI: Luiz Barbieri.

DR. REICHERT: Marcel Reichert.

DR. CADRIN: Steve Cadrin, University of Massachusetts.

DR. BELCHER: Carolyn Belcher, Georgia Department of Natural Resources.

MR. COLLIER: Chip Collier.

DR. BOREMAN: John Boreman, North Carolina State University, and I just want to set the tone for today. I just read this morning that an Italian Court convicted seven scientists for manslaughter and sentenced to six years in prison. The reason is they were accused of giving inexact, incomplete and contradictory information. We probably will not have any of that here.

DR. WHITEHEAD: John Whitehead.

Dr. Crosson: Scott Crosson, NOAA Fisheries.

DR. SEDBERRY: George Sedberry.

DR. LARKIN: Sherry Larkin.

DR. BARBIERI: Thank you. First order of business for us is approval of our agenda. Jim.

DR. BERKSON: I'd like to make an addition to the agenda or suggest an addition, and that is we need to have a discussion on our process dealing with third party assessments. We have I believe two on our agenda at this meeting, and we don't have a process in place to really know what it is we are supposed to do with them. I think we need to have a formal discussion about that prior to actually reviewing them or discussing them.

DR. BARBIERI: Thank you, Jim. Are there any other suggestions, comments, discussion points regarding the agenda? Jim, given the length of our agenda and the fact that we have a lot of items to cover, I would suggest that we leave this for discussion at the end. This is something that – unless we have strong feeling from the committee not to do this at the very end, I would rather wait until we can handle this through general comments at the end. Jim.

DR. BERKSON: Well, , once again I'm just not sure what we are supposed to be doing with those assessments, what questions we are being asked. I think we might actually spend more time dealing with the two assessments if we don't know what our job is, if we don't have that discussion first. That is why I think we need to have that discussion, but I'd like to hear what other committee members have to say.

DR. BARBIERI: Yes, I would, too. My understanding from the overview document, our roadmap document was clear that our intent here is to review and comment. There are two analyses on the wreckfish stock that are being presented as supplementary analysis to the DC-AC analysis that we went through earlier.

The idea is let's check on this analysis as whether they are appropriate to represent the status of the stock and if we have any technical comments or issues regarding the agenda. I understand, Jim, and I agree that the next time we need to be a little more explicit about how those items are added to the agenda, discussion of how those items are added to the agenda. I ask John Carmichael to clarify. My impression is that those documents were sent to the council. The council accepted the document and is asking the SSC for technical review; is that correct?

MR. CARMICHAEL: Well, they were submitted to the council and through the regional office and various other avenues, so, yes, the council is asking for you to comment on them. You discussed this at your last meeting. In April you discussed this in response to looking at some assessments the prior November and didn't really come up with a clear process.

You made some comments about everything coming through SEDAR in terms of assessment, which hasn't been the policy of SEDAR in the past. That is sort of a contradictory point between what you guys have recommended and how SEDAR has operated within the region. I was just looking back at the notes and you made a comment that SSC is not obligated for a full review, just an initial screening.

That is the way SEDAR has viewed this in the past, that SSC should provide initial screening. In the case of these documents, as we said we are asking for you to review and comment and consider if there are ABC implications; give us recommendations for how to move forward. Do you think the documents you have are sufficient for you to support or change your ABCs.

I don't know – that is up for you to decide – or do you think that there needs to be more work in these offer intriguing approaches and it needs to go out for a more rigorous, multi-step, independent peer-review-type analysis treatment so that you can then get an ABC that you have greater confidence in and you think exhausts the opportunities to assess these stocks. That's really all we're asking for.

DR. REICHERT: I agree with that although Agenda Point 8 does ask of us under 8.4 to consider ABC implications, so that goes a little further than a review and a comment. I think we probably need to discuss that a little bit and see if we strictly restrict ourselves to the review and comment.

MR. CARMICHAEL: I thought I did comment and added in the ABC implications when I was discussing what you were asking. It says the implications. That is kind of an open ended question to you to decide how to handle it.

DR. BERKSON: Yes, with SEDAR assessments we decided a long time ago that it was necessary to have SSC oversight, because there were so many decision points along the way such as what data is used, what assumptions are made, what models are considered. We thought those decision points were critical to have SSC oversight throughout so we'd understand the decisions that were made and why they were made.

We are now getting documents that are five to ten pages long, and we haven't had that kind of oversight and yet they are critically important documents, critically important work. We have on our roadmap the question what are the ABC implications and I don't know – I mean, I don't feel like I have enough information to comment on that given the fact we didn't have oversight and there isn't enough information provided in the documents. That is why I'm thinking that the precedent we are setting by looking at these, our first external assessments I think is so critical that we not just blaze new ground without thinking about how we are going to handle this in the future and what the implications are.

MR. CARMICHAEL: I think if that is the SSC's opinion, those are appropriate comments to make when we get to that agenda item. If you don't think you have enough information, well, that is a perfectly legitimate comment and that could dispense with that topic right there, and you could give us some advice to what the people who have done that work could do to give you the type of information that you need. It may help to go through that agenda topic and then decide if the information you have in your rules of doing business are inadequate and then have the discussion of what it takes to make those rules adequate.

DR. BARBIERI: Right. Jim, the issue is – and I think that this is why we are going to have to have further discussion at the very end under other items if we add this to the agenda – is the issue of whether we evaluate this. Well, the way I see our role as the SSC is we serve the council.

If the council receives documents that are submitted through legitimate means, legitimate avenues, and asks us to review those documents, I really don't see a problem with that. Now how we react to those documents given the amount of information that is there, whether we feel comfortable making some kind of more serious recommendation, I don't have a problem fulfilling that role of providing the scientific advice for documents that are submitted legitimately through the process the council has established to have those documents submitted. We can discuss this further and expand more at the end. Steve.

DR. CADRIN: Yes, a couple thoughts on it; I think it is definitely worth us considering. I think one thing to keep in mind is that it is probably a council decision as far as policy. I think that we should have dialogue with the council that if we feel that there is a policy modification that is needed, we could recommend that to the council.

For the time being, it appears as though they've asked us for ABC recommendations including this information. I think for this go-around we are obliged to do that for the council, but I recognize Jim's question that this is something that we need to address in the future. The bigger picture I think the system is understaffed with expertise, and that is why we don't have annual assessments of everything that is peer reviewed.

In my opinion having experts like Alec MacCall and Doug Butterworth here for a relatively data-poor resource is a resource to us and I hope that we could take advantage of it. The next question I have is really what is external? Last spring I think we had a break-out group on wreckfish to go over a regional office analysis. Is that external – it is certainly external to SEDAR, but is it external?

I think for some of our data-poor resources, Jim's students have had some assessments for us, which I would like to be able to consider even though they are external to SEDAR. It is going to take some discretion, and I hope we don't have to be black and white about this; that we can use some discretion as an SSC to consider just information if it helps us for the reliability so we don't get sued for manslaughter for false recommendations that we can consider it. It is going to take some discretion. That part of Jim's comment I really agree with.

DR. BARBIERI: With that, any additional comments regarding the agenda? Well, seeing none, I would say we proceed to our next order of business; approval of the minutes from our April, 2012 meeting. Any comments or concerns regarding our minutes; no additions, no additional comments? Hearing none, the minutes are approved as presented. Now we proceed to our next item, public comment. Do we have any requests for public comment? Okay if we have four, I think we can do this right now fairly quickly.

MR. CARMICHAEL: Please state your name. You can come up here to the microphone at the corner and please state your name when you make your comment.

MR. FEX: My name is Kenneth Fex; I'm on the South Atlantic Grouper Advisory Panel. I go to a lot of council meetings. John does a great job communicating you guys' opinion and everything. My comments are on two management tools we use for trip limits. The SSC, from what I understand, thinks it limits the ability for the fishing vessel to make the best of the trip, and I understand that part right at the present time.

Well, there are other limits you have got to understand. There are limits in your fuel, the bait, ice. That is one of the main limits, your space. Right at the present time when we open in January, we are limited, because we can't keep B-liners, black sea bass and certain other fish and go all the way until March and April. The only fish we can keep are triggerfish, grunts and joltheads. We are really limited then.

May comes around, grouper opens, and then we can catch them. The red porgy is open. We still can't keep the B-liners and the black sea bass. Then finally July comes around. We can keep everything. That time when we can keep the most fish is actually the best time, because then we can catch the fish and we don't have to discard them.

We can fill the box easier, we are not limited on the ice, we are not going to burn the ice and not make the best of the trip. It is going to take us less time to make the trip. It ain't going to take us four days; it will probably take us two days. Then we go towards the end of the year. This year is a fine example, triggerfish slowly cutting out, almaco are cutting out, black sea bass finally closed, vermilion closed, grouper finally closed. Now we are really limited, two months without fishing completely.

My point is trip limits will work. It makes you diversify your catch. It makes you not target one species. A lot of times when people target one species you get the supply and demand effect. Too much of one fish, the price drops on it; so when you have more of a diversified catch, the price of the fish is higher. The market handles it better.

I am just making this point for the trip limits. Another one is spawning closures. I understand you guys somewhat don't believe in them. You believe a dead fish is a dead fish. Well, actually a stock assessment is an educated guess of what the stock is by data that you guys use, and I respect that. Don't take me wrong, but that is a guess. The fact that you are leaving the fish alone while they are spawning is a fact. The typical public, when I talk about spawning closures, why we have closures during spawning closures, they understand.

They say, well, that's good, at least you are helping rebuild the stock. That's why I think spawning closures are good. That is why the advisory panel agreed on trying to regulate around them. I just want to make that point to you guys. I respect you; you are all highly educated, but that is the way I look at it from my perspective. Thank you for the time.

MR. HUDSON: Rusty Hudson; president of Directed Sustainable Fisheries, and also representing the East Coast Fisheries Section. I did submit a written comment by the October 16 deadline of the SSC. You should have already had a copy of it so I will not sit here and belabor the point of reading the different situations I brought up.

Some of these things you've possibly dealt with in the past and possibly a couple of them you may have to deal with at the next meeting. I would like to say with regards to the wreckfish; this year was the first attempt at fishing wreckfish under the 90 percent reduction from the two million pounds. It took two trips to catch an entire year's worth of allocation. That destroys a business.

Second, the red porgy and the vermilion snapper have been updated. Of course, we did not get to participate publicly. That is something that I still have a little bit of a desire to want to see the

inner workings; but if it is just the addition of the terminal year, that is one thing. But when it is a little tweaking and stuff like that going on or maybe results that don't resemble what the fishermen see on the water, that is another discussion point that could have been helpful during the scientific period, but it will probably have to come out during the actual public comments dealing with the council and the management decisions of that.

With that said, vermilion snapper, the results appear that overfishing is not occurring, it is not overfished, and at the side of the boat the testimony from North Carolina down to Florida indicates a very strong robust stock of vermilion snapper.

Second, red porgy indicates that it is still overfished, has a rebuilding plan that is going to go on for another couple decades. Then it is not overfishing occurring. I felt like I was sort of reading in that update that there might be even a tendency of underfishing, but that might just be my opinion.

But based on things of knowledge about red porgy and historical fishing for them, whether it is inshore, 100, 200 foot or if it is offshore of 200 foot, we've had a lot of history of fishing them into the deeper waters. I asked the guys do you all still fish the red porgies purposely offshore? No, because we can catch plenty inshore now and very nice size up and down the coast.

It's a testimony that might be backed up as time unfolds, but again I know that Dr. Crabtree was a little worried about it all at the last discussion, that I heard him talking about red porgy and that they have penciled in a benchmark, a full benchmark for red porgy because of the fact that the Center of Independent Experts had not actually had a full review of SEDAR 1, which was the original red porgy assessment.

At the last update there was actually an increase I believe on red porgy allocation. I'm not sure what is going to come out of this, but we'll stand by and see how the discussion goes. Boyles' Law; the Comprehensive ACL Amendment that basically had to be finished by December 31, 2011, and some changes that occurred earlier in 2011 to the ABCs that were chosen by the SSC due to different pressures have caused a problem.

Almaco jack and banded rudderfish are two examples that have been put into a jack complex that were unassessed stocks and essentially the third highest landings drove a lot of stuff. Now some of your stuff in the Comprehensive ACL Amendment had a start date of 1986. Some of it had a start date of 1998. Then, of course, Boyles' Law kicked in with us outside of the SSC at the management level.

That created another problem because they stopped at '08 even though we were at the end of 2011 when we could have inputted '09, '10 data. That also affected our greater amberjack assessment. It caused an early closure of almaco jack, which has historically been mixed in with greater amberjack. These type of things need to be fleshed out, but we're told we have to do a full amendment. This body here will eventually have to deal with those choices.

We feel that Boyles' Law may have some arbitrary nature about it. We believe that it actually reallocated a significant portion of commercial in some of the stocks into the recreational component. Of course, we are not filled with pockets full of money and we can't litigate against all of that and challenge it within 30-day deadlines.

I'm sorry about that situation, but we are going to have to appeal to you all to kind of listen to the fishermen a little bit on this. As far as the P-rebuild, the black sea bass, we have an explosion of those. I keep getting testimonies of we couldn't catch red snapper during the little opening we had this year because the black sea bass are so thick.

Whether it was divers, whether it was fishermen, it is a reality that I hear from North Carolina and South Carolina. Once we got down to our area and we got south of Cape Canaveral, then with our red snapper opening we had problems there, too, but we've got black sea bass everywhere. The best black sea bass fishing in my Uncle's opinion, fishing since 1940s; he has seen since the 1940's.

That is a big testimony, but as a predator they are eating all these baby vermilion snappers like crazy, coughing them up all over the deck and stuff like this. These testimonies could be brought to you if you needed to have that kind of a view from a fisherman. I'm sure you are not going to be dealing with Oculina HAPC at this moment in expansion, but that is creating another problem for us; because whether it is the MPA discussion with speckled hinds and Warsaw grouper or whether it is a pseudo MPA with an Oculina expansion, which has not been discussed with our snapper grouper people, and the impacts are very noted and the fishermen are up in arms about that.

Without getting into a whole bunch more stuff with MRIP, I guess I'll finalize that. We are back to '04 data right now. In a lot of those conversions were supposed to go back to '98. Unfortunately, your Boyles' Law and everything goes back to '86, so we have a problem there. I've always had a problem with MRFSS. It doesn't matter whether it is sharks or whether it is bony fish, or whether it is mackerels or whatever, the MRFSS stuff is so spiky in the early eighties to the late eighties it creates an effect that I believe the NRC had a problem with overall.

I'm not sure if MRIP solves that effect since it doesn't go back far enough. With all that said, I just hope that this is a great day; that we have actually public comment and we were able to submit a written comment, we were able to do verbal at the beginning and verbal at the end. It would be nice to be able to submit a written kind of testimony at the end of everything, but again this is a good step, so thank you very much.

MR. BROWN: I'm Mark Brown; I'm from here in Charleston and I own a charter headboat. I'm actually the last of the headboat fleet here in Charleston. We used to have three or four other boats, but most of them went out of business due to different situations. I fish on a regular basis and I'm able to kind of observe what has been going on with the fisheries on a daily basis.

I've been involved with the fishery management process for many years, coming to different meetings and trying to put input into helping with an understanding of what is going on and what would help with fishery management. Please understand that most of the fishermen that I know are in favor of good fishery management.

We would like to see it, because that is what we do for a living either commercially or recreationally, and we do want good fishery management, but we would like for it to match what we see at boat side. I just wanted to talk real briefly on three different topics that would impact me. The red porgy fishery off of most of the coast has increased.

We've seen a real good increase in red porgies in different depths of water. In the shallows we've seen quite a bit in water that is like 60 to 90 feet of water. We've seen more red porgies in the last few years than we have seen in a long time. We are seeing red porgies that are of maximum age and weight and size.

I notice that in the Executive Summary for the SEDAR Assessment that it says that the assessment indicates that the stock is overfished but is no longer undergoing overfishing. I think that some of that might be because a lot of people have gotten out of the fishery. There are not nearly as many people in the charter or headboat fishery in our area, anyway, and I know that in a lot of areas up and down the coast it has been reduced.

We just don't have people. Even in the recreational sector, I take people fishing all the time that tell me that they sold their boat because it is too expensive for them to keep their boat and they would rather go fishing with me because it is cheaper, and I hear that all the time. The overfishing part is possibly reduced because you just don't have as many people accessing it with their own boats or with the for-hire sector.

On the overfished part of it, right now with the way that it is with the catch limit for red porgy and with the current regulations, I don't have any problem with that. I would recommend just leaving it at status quo for the recreational sector; but if the overfished part reaches to a point to where it can be increased for the commercial sector, I would recommend and would ask that you would consider increasing the commercial sector; to move the catch up to more than 120 fish per trip so that they could at least be able to supplement their income with so many other closures and things.

With the vermilion snapper, the new SEDAR update assessment says that the estimated fishing rate has exceeded only rarely and never since 1992 – it has only exceeded the FMSY rarely and never since 1992. It says thus the assessment indicates that the stock is not overfished nor is it experiencing overfishing. I'm speaking on terms of what I'm seeing, too.

With the for-hire sector as a charter headboat, we have seen quite a few vermilion snapper over the past few years and an increase in size. But one of the things as Rusty mentioned that we are seeing, too, is that a lot of small vermilions are being spit up by the black sea bass. We are seeing a good juvenile population that we can't actually see at boat side, but we are seeing them from the inner workings of catching other fish. We know that there are a lot of them there.

Also, if the stock is not being overfished or overfishing is not occurring, I would ask that you would consider recommending an increase in the ACL for that species across the board so that the fishermen can benefit off of a longer fishing season commercially and that it wouldn't stand to close any type of access for the recreational sector either.

My last topic that I'll talk about briefly is the black sea bass, and this is probably the most important one for me to speak on because black sea bass impacts our fisheries more than any other species on the east coast. I think that the black sea basses may be the most important species to a lot of the fishermen because there are so many of them.

I know that the assessment history from the 2011 SEDAR 25 assessment concluded that overfishing was occurring during the eighties and it continued through the nineties and that the

stock was overfished, and that the rate of overfishing continued to increase into the two thousands.

But as I mentioned before, a lot of people have gotten out of the business or the price of going fishing has impacted a lot of people. I think that the rate of overfishing is going to be seen as decreased here very shortly with this new assessment. Also the stock of fish, the black sea bass that we are seeing at boat side are a lot larger. I know that I have talked to people in regards to what MARMAP has seen, and they are seeing a lot more bigger fish and a lot more fish.

The black sea bass are so thick on some of the reefs that we have even inshore shore so close – this past March I was offshore fishing with a group and the black sea bass came up around the boat like a cloud and the water was black with them. We couldn't get away from them and they are impacting a lot of our fishing by trying to fish for grouper and you drop bait down and you catch black sea bass.

When they are closed we have a lot of discard because we are just constantly having to throw fish back. That is a big impact; and what I am asking for you with the black sea bass is that in regards to the current set ACL for the black sea bass under the rebuild plan, I would really like to see if the assessment comes back and it shows that there is a progress in the black sea bass rebuild that you would consider recommending a higher ACL and leaving the current status of rebuild the projection at 50 percent.

The reason I say that is because if you increase this probability of percentage on the rebuild plan and we're seeing this increase in the stock, even if we do get an increase in the ACL it is still going to harm the fishing community. The fishing community from the Carolinas to Central Florida depends on the black sea bass to really help to keep their business going. If you take that away from them, it destroys their business. You really don't have anything -- and then like I said you are just going to have constant discards. It is massive.

DR. BARBIERI: Mark, excuse me, but we are going to have to wrap up. We got the message, thank you. I think you are now stepping into a lot of the discussion points that would be more relevant to the council then really to the SSC. Thank you for your comments. I think we are ready to move on. I appreciate your comments, Mark.

MR. GILLIAN: Sean Gillian; I'm here on behalf of King Seafood and Sea Farmers of America. I'm speaking relevant to the discussion you have already had this morning. I can certainly appreciate the concerns and certainly the need for an ongoing policy and process for reviewing third party work, because I think regionally this process is obviously very important and increasingly important in management and resources in terms of information and data are limited.

To the extent there is a process and a means for outside science to come in and approve the way we're managing all our stocks, it is a good thing. But I'm not here for a general purpose; this is very specific. I would like to point out that this is not the first time. Actually, it was at this meeting last year, as alluded to before, that this body utilized its authority under the Magnuson-Stevens Act to act as a review body.

It was with respect to wreckfish and an ABC recommendation was made on the basis of outside science. John Carmichael was sort of kind when he alluded to why this was on the agenda today. It was a result of litigation and agreement with the government that either this information would be reviewed and looked at in a similar process.

Last time what we had envisioned is what happened last time, which was there was a general discussion, a smaller group. There were additional runs made and then a report back and a recommendation. Our understanding isn't that any particular recommendation would be made or even that one would that the data was good enough; but that at least the attempt would be made. That was our understanding coming in.

Obviously, both Dr. MacCall and Dr. Butterworth have traveled a long way. I certainly hope they would get a hearing, a respectful hearing about the opportunity to present the results. Then obviously it is in your hands as to how you want to move forward. But in conclusion I just would like to ask and remind people, because I realize that this is a five-page report but there are substantial work going in; but at the end of the day you shouldn't hold – if there is any chance of making a recommendation, if we think that the data upon which this assessment is based may be more rigorous, a higher tiered level assessment than what the current wreckfish ABC is based on, the DCAC analysis, it shouldn't be held to the standard you would if it were a full-blown SEDAR or anything and just recognizing that this is considered a data-poor stock, consider what the basis of the current ABC recommendation is on, and that was exactly the spirit in which this body had made its recommendation last year. We moved up a bit of a tier and maybe we can do so again this year. Thank you very much.

DR. BARBIERI: Any other requests for public comment? Seeing none, I think we are ready to move on to our next order of business, SEDAR Activities Overview by John Carmichael.

MR. CARMICHAEL: We have a couple of action items here related to SEDAR activities and an update on our plans for the future. I just wanted to start with looking here at what the Steering Committee has last recommended for 2013 and 2014 and to bring your attention to the black sea bass update which is planned for 2013.

The intention is that this will be done this winter and come to you at your April meeting. Snowy will come to you in the fall along with the two benchmarks. Then looking ahead to 2014, the Steering Committee and the council support doing a red snapper benchmark in 2014 and putting that on the schedule firmly. We had discussed doing a preliminary evaluation of red snapper in 2013, but the thought was that it would be much better to just do the benchmark and not put the resources into kind of looking at the data to think about a benchmark; and knowing that we just really need to do it, especially with the council starting to allow some harvest this year.

With black sea, if you'll recall we had discussed having some updated projections or some type of analysis to support you giving ABCs late next year. In response to the need to do that amount of analysis and a desire to get the updated survey information which shows very good things for black sea bass, the council really wanted to get the update done and to allow that to incorporate the new survey values. That is why we have made those changes.

Red porgy is penciled in sort of in 2014 as a possible benchmark. Those are really based on looking at those assessment outcomes as you have now; and not to be a spoiler, but the

somewhat stalled rebuilding of that stock and concerns of what consequences that may hold and maybe we need to look at that stock again.

What happens there will depend a lot, obviously, upon what your recommendations are relative to the red porgy stock. If we come to need something else, we will probably ask you in April or maybe later at this meeting if you have something else you would do there if you don't believe a red porgy benchmark is necessary.

We've penciled in things down the road, 2015, 2016, 2017, and beyond. Those are as you know very preliminary but just to give an idea of things that the council has as long-term priorities. You'll probably notice a lot of those stocks seem to always be a year away in terms of priorities, but it is in response to trying to keep up with things like black sea bass and red snappers and red porgies and such. That is the general SEDAR plan. Any questions on that before we move into some of the particulars?

DR. REICHERT: In the past we've mentioned scamp, and I don't see scamp on the schedule at all. Was there discussion on that species?

MR. CARMICHAEL: There wasn't a lot of discussion on that species, no, not in the last time we discussed these stocks because the other ones that you see mentioned have been considered a higher priority at this point.

DR. BARBIERI: In terms of our workload next year, it would be black sea bass update in April, and then we'll see gray trigger, blueline tile benchmarks plus the snowy standard at the October meeting. Okay, thanks.

MR. CARMICHAEL: The action items here on SEDAR; first of all, we'd like a review panel chair for SEDAR 32. We had a couple participants identified at the last meeting, but is anyone interested in possibly chairing that workshop?

DR. BARBIERI: John, can you remind us again of the timing for that workshop.

MR. CARMICHAEL: It's coming to you in October, the review is August some time. I think it is late August – August 27 through 31; thank you, Julie. The SSC is asked and expected to give us a chair. I understand it is a ways away, but we would like to have one identified; if not, definitely in April.

DR. CADRIN: You want a chair for the Review Workshop and that would be in October?

MR. CARMICHAEL: A chair for the Review Workshop and that is in August.

DR. CADRIN: In August, the dates again.

MR. CARMICHAEL: The 27th through 31st or 30th. Okay, thanks Steve. I think you are on there actually – yes.

DR. BARBIERI: You already signed up as an SSC.

MR. CARMICHAEL: If Steve is willing to be the chair, is there someone else on the SSC who is willing to be a reviewer? Jim, you are?

DR. BERKSON: Yes.

MR. CARMICHAEL: Okay, thank you very much. The next item is SEDAR 32, Terms of Reference. This is the benchmark of blueline and gray triggerfish. You have Attachment 3, which is your terms of reference, and these are largely the same terms of reference we use for nearly every assessment. We'd like to open this up for your comment. These will go to the council for approval in December.

DR. BOREMAN: I'd just like to go back to the last topic and remind the SSC again that in New England and Mid-Atlantic, any SSC participant in the SAW/SARC process gets paid the same rate as a CIE reviewer, $800 a day. The CIE people get $800 for ten days' worth of work, because they have got time to review the material. They've got the meeting and then they've got time to write afterwards. The SSC participants get paid the $800 a day I believe just for the days of the workshop. I'll raise that issue again; I've raised it in the past. I think $250 a day for three days, if there is somebody to chair this SEDAR is way underpaid. Thank you.

DR. BARBIERI: This is something that I think that instead of us having discussion here, you should be discussing with the council. It is good to make note that we need to discuss this with the council to see what we can do in this term.

DR. BOREMAN: That is the recommendation that came up about two years ago, that it was going to be discussed with the council and obviously it hasn't.

MR. CARMICHAEL: It was discussed with the council.

DR. BOREMAN: And they said no.

MR. CARMICHAEL: They chose not to follow the same path as them. My understanding was the chair got paid the CIE reviewer rate but not all the other participants.

DR. BOREMAN: Okay, we didn't get any of that feedback, I guess.

MR. CARMICHAEL: Of course, all of you who are state employees understand that you still continue to be just paid by your state as always. That would just be to the members who are eligible for that additional SSC stipend.

DR. BARBIERI: I guess there are no comments regarding SEDAR 32 TORs. I think we approved the TORs as presented. I read through the whole document. I think that they are well put together, thoroughly encompassing. I think that the addition of the more specific terms of reference regarding uncertainty definitely have helped a lot. I think the Review Workshop TORs are much, much better now. I'm going to borrow them.

DR. BOREMAN: Just one comment on TOR 1; this is an issue we ran into in the Mid-Atlantic with black sea bass, and it is a Catch 22. The SSC asked the SAW or SARC to look at stock

structure and unit definition of stocks for black sea bass feeling that there is evidence that there is more than one stock up there.

The response from the Center was, well, if we have more than stock, that means we've got to do two different stock assessments and we don't have time to do several stock assessments so we are going to treat it as one stock. It went to the SARC and the SARC said, well, we've got issues and they rejected the stock assessment.

One of the reasons was because there may be more than one stock out there. If the wording here could be clear, I think review stock structure and unit stock definitions, consider whether changes are required for the next assessment cycle, because you can't go into an assessment cycle and say, well, we really have two stocks.

Well, if you have two stocks you need two new assessments and then obviously you can't do that overnight. That should be clear that that is in preparation. If the group feels that there is evidence for a stock structure and a change in the stock definitions, then that should feed back into the next assessment.

DR. BARBIERI: John, to that point, my understanding actually is that this would not be for the next assessment, because this is the Data Workshop, and if the Data Workshop Panel decides that there is more than one stock, then you are going to have to organize assessment workshops to take care of that. That was always my understanding.

MR. CARMICHAEL: Well, everyone is kind of correct. This is a very complicated thing. That is the reality of dealing with the stock structure. We have stocks where council decisions have determined what the stock structure is and how stocks are separated between, say, the Gulf and South Atlantic. The same largely applies to black sea bass where there is a line at Hatteras for the stocks, and it involves the Mid-Atlantic and the South Atlantic.

It is very difficult in those to go in and say, well, we're going to do this assessment this way. If we were to make a change in black sea bass and say, no, we really think the South Atlantic stock of sea bass extends to the mouth of Chesapeake Bay, well, that has consequences for not just us, but to Mid-Atlantic, our management and our assessments.

There are instances where you simply cannot accommodate that within the existing assessment. On the other hand, we were in the middle of this SEDAR 28 with Spanish and cobia, where there is overlap with the Gulf of Mexico stocks, and the group made recommendations that given that both stocks were being looked at, they could treat the data appropriately to shift the boundaries a bit from what the councils had put in place. In that case the councils were amendable to it.

I think exactly right, in some cases you have to do it at the next assessment. When possible, we would like to do it at this assessment. We've considered even dropping this and saying so many of these are driven by things outside of this, that maybe we can't deal with it within the assessment, but the word coming in from the analyst and others has been, well, we need while the people are there with the expertise to go through this exercise and tell us what the real stock structure is. At times it is a Catch 22 and we try to do the best we can with it.

DR. BOREMAN: Just a followup then; the unit stock definitions are determined by the council and not the SSC. The SSC needs to then go back to the council with the recommendation. The council has to act on it and redefine the stocks and then the assessments need to occur, so that is an issue.

MR. CARMICHAEL: That is right and that is the Spanish ones as you will see when we get into that has been complicated in that way, because there were definitions of what the council boundaries are; which when they got into the assessment they were going to be doing an assessment with boundaries that didn't match those.

The councils have to take action then to perhaps change how they allocate their ACLs between two different jurisdictions; and if we ever change black sea bass, it would probably take a back and forth from the technical and management bodies several times to work something like that out.

DR. BARBIERI: Any other comments; anything else regarding those TORs? Good point, John, we took note and I think we can approve the TORs and schedule. Now we need to identify SSC participants.

MR. CARMICHAEL: There are two TORs; that was 32. Now we have to talk about snowy grouper. SEDAR 36, which is going to be a standard assessment, will include data through 2011, and this has a bit of an extended modeling time allotted to it relative to our normal standards mainly because of the amount of time that has passed since this assessment was done and a lot of improvements in the BAM model configuration that are going to be incorporated in this version to bring the model up to the current standards; to bring the snowy grouper configuration up to the current standards.

They are also going to try to see if they can have improved survey index information based on some of the improved sampling that has gone on over time, look at the life history information and they are going to add a P-STAR to it, which is not something we had in the earlier assessments. Those are the things bulleted there that are going to be looked at in this standard.

As you recall, within a standard we have a little more flexibility allowed to incorporate some of these types of changes within the model. Are there any comments in particular on those things that are bulleted? I'll bring up the schedule. They want to have the data in by February to start that extended modeling, as I said. Then there is a data and assessment workshop for April in Beaufort. That is to give them a lot of time to work through potential issues.

Those who have been around a while, you might remember this was a stock that was kind of poorly behaved in the original benchmark and kind of wanted to go in two directions. There is a little fear that if it goes that way again it could take considerable amount of effort to get a solution. That is why there is the extra time. Any comments on this schedule?

DR. REICHERT: I have a question. Has any of the scoping, calls and webinars; have the dates been sent yet?

MR. CARMICHAEL: Dates for scoping, I think is that still the week of November 26 – the week of November 26. We are planning on doing this in conjunction with SEDAR 32 because

of the significant overlap in data providers. Okay, no comments on this schedule? The other thing is to identify SSC participants for SEDAR 36. Raise your hand if you would like to take part. I see Doug Vaughan with his hand raised. He is an experienced snowy grouper assessor so that will be useful. Anne, did you think about raising your hand? Yes, it is a data/assessment workshop is how these are done. Eric, okay thanks. Chip and Marcel; okay, that takes care of that.

One more SEDAR thing; this is for the black sea bass; draft terms of reference for the update. These are very similar to all of our update terms of reference. It is going to include data through 2012, and there are going to be a number of different projections that are going to be asked for. That is the primary deviation within the updates is to specify the projections.

We were looking at the status quo management plan, which are the 847,000 FMSY and F rebuild at 50 percent P- rebuild; and then an F rebuild at a P-rebuild to be specified by the council in December 2012. This is because the council in their last action specified P-rebuild at 66 percent. Then you are asked to discuss that in an agenda item coming up. That is a little open just to see what happens between your discussion and the council's next action. Hopefully we have a final resolution on that and we know what we will project forward. Comments on sea bass?

DR. BARBIERI: Seeing no comments, I guess the sea bass TORs are approved as presented. We are ready to move on to our next item, which has to deal with the shrimp assessment approaches. You may remember that we discussed this – I think it was back in April we had an initial discussion. Then eventually the council considered the possibility of requesting a more in-depth assessment approach to be used for pink shrimp, or for all the shrimp stocks; pink,

And based on the experience of how the shrimp stocks were handled in the Gulf, Dr. Rick Hart had conducted their assessments using the stock synthesis assessment environment. He then volunteered or was volunteered to come and give us an overview of how that same approach could be applied to South Atlantic stocks and supplement some of the existing analysis. Rick.

DR. HART: Thank you, Luiz, and thank you for having me here today. In lieu of what John Boreman mentioned earlier, I guess I am putting myself at great risk of incarceration after the end of this talk. Yes, today what I wanted to do is to give a real brief overview of stock synthesis and then I would like to show the results of the pink shrimp stock assessment that we just completed for the Gulf of Mexico.

I think really today I would like to leave some time primarily for questions and discussion of data availability I think really is the main question I would have for a pink shrimp stock assessment in the South Atlantic. We used stock synthesis. Okay, why stock synthesis? Often assessment data is often incomplete and noisy. Several different types of data are available so why just pick one? Fishing mortality isn't always a lot greater than natural mortality. As we all know with the South Atlantic pink shrimp, that fishing isn't always the only factor that affects fish stocks.

Stock synthesis is what is called an integrated analysis model. The general class of models, termed integrated assessment models; incorporate a population model, an observation model, a statistical model, and a means to search for the best fitting set of parameters. Stock synthesis has all three of these types of models integrated.

It can be used to cast some of the results in terms of management quantities and propagate uncertainty on the confidence for management of quantities. Stock synthesis has a pretty long history. Just a more recent history, 2003 to the present it is coded in C plus-plus with AD model builder. It has very diverse target species. Right now over 40 U.S. stocks are assessed with stock synthesis. Stock synthesis has been used around the globe.

We see just in the U.S. many different diverse stocks have been assessed; shrimp in the Gulf, hermaphroditic groupers, tuna, groundfish, and in the west coast a lot of different groundfish stocks have been assessed using stock synthesis. The data that SS uses; catch, different abundance estimates, either being directly from the fishery-dependent data or fisheries-independent survey data with catch rates as well as fishing effort.

It can use age composition data, size composition data, maybe mean length at age or mean weight at age. It is able to incorporate many different types of data that are available. SS models can be structured real simple with just one area, one season, one growth, a couple or two genders, and one maybe sub-morph, or it can be very complex.

You can have three areas, four seasons. You can see this would be a real complex type assessment. It is very flexible and it is evolving with a range of options for many population processes. It integrates many sources of data quite well; and as I noted it works well from very simple to very complex models.

It has been widely used and peer reviewed, and that is one of the reasons that we moved towards this modeling framework for the Gulf shrimp. It does I think have the potential for use for South Atlantic pink shrimp. That would really be dependent upon the suitable data that is available. I know that there are time series of catch data. I think the big question would be is the availability of some effort data or catch rate data.

As I mentioned, we used stock synthesis in the Gulf. I am going to show the stock assessment for pink shrimp in the Gulf. We had some problems beginning in about 2007. Historically the Gulf shrimp have since 1984 been assessed with a VPA. That VPA was developed in 1984, and the time series from 1984 to 1960 you can see was pretty steady landings and effort data.

Dr. Scott Nichols developed this VPA, and in his original report he noted that for data outside of the range that his model had been calibrated, he couldn't be assured that it would assess the stocks appropriately. Well, what happened in about 2007; as you can see shrimp effort and shrimp landings in the Gulf started to steadily decline and dropped real rapidly to record low levels. The VPA really couldn't handle that and it noted that it came up with a parent stock as being overfished.

We just didn't feel that was correct, especially knowing that shrimp effort and shrimp landings were really down primarily because of economic conditions in the shrimp fleet. The fleet had been reduced by over half the number of vessels, but the VPA couldn't really take any of that into account so it became a problem. We sent the VPA out to an outside review panel.

They reviewed it and came to the conclusion that VPA they didn't feel was adequate to make a status determination for the pink shrimp stock. They suggested several models, one of which

was stock synthesis. We moved forward with stock synthesis and have since migrated pink, white and brown shrimp in the Gulf of Mexico into the stock synthesis modeling framework.

For the Gulf model we developed the stock synthesis model using catch and effort data from 1984 to 2011. We modeled this as one fleet. We have inshore and offshore catch, and we combined those for Gulf of Mexico Statistical Zones 1 through 11, and we used directed fishing effort. The other thing that we were able to do is the shrimp landings is the shrimp landings are partitioned into account categories.

We were able to use the size composition for shrimp into these seven bins we call them, which is just nothing more than just a number of a count of shrimp per pound. We also were able to integrate two indices of abundance. We were able to integrate SEAMAP data into the assessment model, and this is the first time that our shrimp models have had any fisheries-independent data in them.

That was a really big leap forward for us, because now we had some way to calibrate our model. The other thing that is possible with stock synthesis, which I think would really be beneficial for the South Atlantic, is stock synthesis is able to integrate environmental indices in it as well. Especially for pink shrimp, we know that pink shrimp is really – the stock's population is really driven by the environmental conditions.

That is primarily what – I'm on the Shrimp IPT Team and the Review Panel. In the past several years pink shrimp have been very low levels, but primarily we believe that it is due to environmental conditions. That is one thing that stock synthesis can do is use environmental indices. These are just some of the life history rates that we used in the model.

One thing is stock synthesis really is an annual model and we have for shrimp monthly data. We had to kind of trick SS into thinking that these months were years, so we really had a model that had 336 years of data in it. One thing that we can do is set certain parameters to fluctuate in annual blocks; one of which was size selectivity, so fishing mortality we can partition into size selectivities.

As I mentioned, we used SEAMAP data for the first time in our shrimp assessments. SEAMAP data was collected from Statistical Zones 4 through 11. And for pink shrimp, the SEAMAP data, there are a couple indices. They have the actual delta lognormal for only about three years of data, because they didn't have enough samples. Then we used the raw nominal catch rates as well. The SEAMAP data also has size compositions of the shrimp so we used that in the assessment as well.

As I mentioned, we have assessed the model, ran the model for pink shrimp through Stat Zones 1 through 11. Now, the map doesn't go all the way over, but I would hope if we were going to pursue something with the South Atlantic, that data would be available all up through the Carolinas. That is where I would hope we can have some discussion on that.

The way we did this is we did not go through SEDAR. The shrimp assessments have never gone through the SEDAR process. We assess these stocks every year so there is no way that we could get them into that SEDAR schedule every year. What was decided and was accepted by the council was that we had the SSC review the early configurations of the model.

I presented them and then after that the SSC wanted a little more hands on, so we had a workshop in February of this year where I presented some models and the SSC working group had some suggestions and I produced some more models. I presented them again in June, about five to ten models for each stock, and then the SSC accepted one of those models for each stock as being the best available science.

The model I am showing here is a result of that. This is just the assessment that fit to the CPUE for the commercial fishery with the observations are the dots and the line here – you can't see because of the screen, but the model is fitting the CPUE pretty well. This line, I think it is red. I'm colorblind so if it is not, I apologize. Is it red or green; I can't tell. This is just an effective Q. We allowed a Q to do a random walk in the timeframe where we saw catch rates going way up. This is a fit of the SEAMAP; summer and fall survey fits for observed and expected CPUE fits.

This is the size composition fits and the residual for the commercial fishery. This is aggregated across all years so this is a pretty good fit. The model; we don't see really any real obvious patterns in the residuals. The size composition seems – the model fits the size comp very well. This is the fit of the size comp to the SEAMAP size composition.

You can see that the model is fitting the size composition really well. What do we get out of the model? Well, the previous stock assessment, the VPA; we would get parent numbers and recruits. Those were used for an overfished level. Now, though, with stock synthesis we are able to produce actual F rates, as well as spawning biomass estimates.

Last week at the SSC meeting for the Gulf, I presented the overfished indices to the SSC and they have accepted those indices using F as well as a spawning biomass. This is the F estimates for pink shrimp. As we can see, the F has gone way down in recent years. In the mid-nineties it was much higher in the time series.

We can also see spawning biomass as greatly increased over time, as well as recruits. Now this last point here, don't get too concerned about that. We ran the pink shrimp as a biological year. This last point is actually – and the biological year runs from July through June. This last point on the figure only has six months of data; it only has into mid-2011, not the 2012.

This point looked the same way last year. I think the take-home message though is that the assessment was run real successfully in stock synthesis. The SSC seemed to be very happy with the modeling approach. We see that spawning biomass has been increasing and fishing mortality has been decreasing.

We don't believe that the pink shrimp in the Gulf is undergoing overfished or overfishing. As I mentioned, the outputs are in terms of spawning biomass and F. At last week's SSC meeting, as I mentioned, they accepted the overfishing limits and they gave me some directive I guess and we are going to try to generate some MSY values as well, .

Luiz is on the Gulf SSC, so maybe he can speak more about how the SSC in general feels about the model, but I think it is a possibility for the South Atlantic pink shrimp stocks. Currently there really isn't an assessment that is done. I think it would behoove the group to maybe

investigate what types of data are available, who holds those data, would they be amendable to being in an assessment model? With that I am open to any questions if there is time.

DR. BERKSON: Yes, Rick, thank you for the presentation. Could you show me the CPUE data again?

DR. HART: That was one thing we saw with the shrimp, pink shrimp in particular, is we were seeing this pretty large increase in catch rates with decreasing effort and decreasing landings. It is probably just a function of the fishery being overcapitalized in the past. The number of vessels has gone down considerably. I think right now there is probably about 13 or 1,400 permitted vessels in the Gulf from a high of in the several thousands.

DR. CADRIN: Yes, just a question first more out of curiosity. In the transition from an annual framework the SS usually has to monthly, how is recruitment modeled? Is recruitment assigned to one month? Is it zeroed out for other months? Just a clarification there, I didn't see it in the document.

DR. HART: It depends on the stock. For this one, with pink shrimp they seem to have kind of constant recruitment. We allow recruitment to occur in most of the months. With brown and white, the browns there was more of a time that – stock synthesis allows you to set recruitment for certain periods. Like with the white shrimp, I believe it was about four or five months out of the year that recruitment occurred.

But, now that is an issue with recruitment when you look at – and as well as spawning biomass. Since it is an annual model, but it is monthly time steps, we get 12 values for each year of spawning biomass. You get a spawning biomass output for January through December. What we suggest is that you use this as an index, because you end up double counting.

You are counting the spawners in January, and then in February you are counting the January and the February, et cetera. There are several ways that you can look at that. You can do it as an index, you can sum them, you can maybe take an average, and that same thing is with the F value. Then for the F we did – with the pink and the whites we use it as that is an apical F, monthly apical annual F. We looked at the greatest, and it is weighted by numbers as well.

DR. BELCHER: I have a couple just to kind of help fill in some of the – obviously, not being involved in the process, but with the fact that shrimp and most crustaceans end up with a non-continuous growth curve; was there any investigation into like a molt process approach to the length curve?

DR. HART: No, we just primarily used some of the growth information out of the literature as far as the growth curves that people had done in the past for the growth curve.

DR. BELCHER: The size selectivity, in looking at the figures that were in the report; is there any discussion about why the SEAMAP Survey Selectivity does not look the same as the Commercial Fleet Selectivity?

DR. HART: Different timing and different locations of the fleet fishing versus where the SEAMAP is occurring, and primarily is different timing. The SEAMAP was spring and fall and then we have inshore and offshore combined for the pink.

DR. BELCHER: I was trying to think about as to how to interpret the fact that one kind of gives you the logistic and the other one gives you the more normalized selectivity. The commercial has more of the dome-shaped selectivity, but SEAMAP is actually showing you more of that asymptotic selectivity, and I was just curious. Because to me, when I think of size selectivity I am thinking about gear; but if there is some degree of separation I guess in staging, that would be the question that I would have, because to me it would seem that if the mesh size was the same.

DR. HART: I can't, I don't know what the mesh – you know, every fisherman is using different mesh sizes. The other thing with the SEAMAP – and I didn't show that slide – is there was concern about where the SEAMAP data was collected. The SEAMAP data was not collected – if you look at this figure, and it is hard to see with that screen being light, but the primary fishing ground for pink shrimp in the Gulf is down in the Tortugas area, one through three.

They had not really gotten samples down there until about 2008, '09 and '10. That was a concern that the SSC had voiced. What we did was, we were able to set a lambda value for the SEAMAP surveys so they wouldn't have as much weight. We lessened the weighting on those surveys, on the SEAMAP surveys. I ran three or four different sensitivity analysis on that.

That was a concern about where the – because you can see most of the earlier years that the survey samples were taken up on the Panhandle, and they hadn't gotten down here. That is something that we can do that; we can account for where the surveys are and how much weight we want to have them have in the model.

DR. BELCHER: Then one last question was knowing that there has been a lot of the debate about the spawner-recruit relationship with penaeid shrimp, there have been a lot of papers between the Gulf of Mexico, South Atlantic. There have been folks who argued for Ricker, folks argued for Beverton-Holt. The bottom line is everybody pretty much comes down to the environmental driving factors. You indicated that this would adapt to take in environmental. Were there any environmental parameters that were taken into the model at this point?

DR. HART: No, there hasn't been yet, not at this time. Our feeling was we need to get the model up and running and get it accepted. At that point after that, then we can start trying to, I guess, add to it as far as environmental parameters. Right now in the Gulf there are two projects that have been funded, one for white shrimp and one for brown shrimp in particular.

One is looking at differential mortality of white shrimp by age and by habitat, and then another grad student is looking at brown shrimp and looking at habitat. The goal of that dissertation and of that funding is to develop an environmental index that we will be able to shoehorn into stock synthesis as an index. I'm very confident that we will be able to get environmental indices in the Gulf shrimp models. I think that would be really important in the South Atlantic model as well for pink shrimp.

DR. REICHERT: Yes, a brief follow up to Carolyn's question and just for my information; is winter temperature an issue in the Gulf as it is in this region?

DR. HART: It doesn't seem to play as much of a role as it is in the South Atlantic, and I think primarily that the South Atlantic seems to be more of a nearshore fishery would be my understanding of that.

DR. VAUGHAN: Back in '93 and '94, I was involved with Jim Nance in a number of SEAMAP workshops that we were looking at the shrimp trawl fishery. I know there was a big issue at that time with the effort information, and that we could only resolve it to the trip level. I don't know to what extent that has been improved since then.

DR. HART: For the Gulf?

DR. VAUGHAN: For the Atlantic; it is quite different from the Gulf.

DR. HART: It is quite different from the Gulf. The Gulf, a large percentage of the vessels has ELBs on them that really helps matching effort to the landings. With the South Atlantic, that is my main concern is who has the data, is it available, what form is it in, because we definitely would like to have some effort data in the model if you want to move forward with it?

I know that the Science Center holds the landings, but I don't know if there is effort data available. I know that the Foundation is doing some work with putting ELBs on some shrimp vessels in the South Atlantic, but I don't think there are very many. It is probably a pretty low coverage. That would be a question.

DR. BELCHER: You said this has also been done for white and brown shrimp?

DR. HART: That is correct.

DR. BELCHER: What results did you see for those species as well?

DR. HART: Similar results; I mean, an increasing spawning biomass and Fs going down; nothing unexpected. The catch rate trends that we've seen in the pink shrimp as well as the brown and whites are also showing those same trends in the survey data. For brown and white shrimp not only do we have the SEAMAP data, but we've also been able to incorporate a Louisiana inshore survey, which also has catch rates and size compositions for the browns and whites. The model outputs are showing similar trends as the survey data are. We are pretty comfortable with the results being valid.

DR. BUCKEL: Just a followup on the environmental question. One of the indices of abundance you mentioned was a delta lognormal adjusted and I didn't know were there environmental factors that were adjusted for in that index of abundance.

DR. HART: No, it is primarily samples. There is no environmental data incorporated in those SEAMAP tows. They didn't have enough tows. They would like to develop – and I'm getting the indices from the SEAMAP coordinators. They like to develop that delta lognormal. They feel it fits the data better, but there wasn't enough tows over those early year I guess in some of those areas to develop the delta lognormal indices for pink shrimp. Now for browns and whites there are. It is just that they haven't gotten really into those fishing grounds until the last few years.

DR. BARBIERI: Thank you, Rick. I guess the question then for the committee is do we see enough potential? My understanding at this point that this will be exploratory nature to start with, but will be a way to start an analysis of the shrimp stocks in the South Atlantic using the stock synthesis approach that was used for the Gulf and taking advantage of the fact that framework based on the Gulf has already been developed and there is some ability to move us beyond where we were with our last set of recommendations for the council.

DR. CADRIN: I've got a comment and a question. I think technically the transition from VPA to integrated assessment is something that we should support. That would be my suggestion. Of course, with all of your three shrimp applications you realize that no one configuration is good for every dataset. There would have to be some model configuration and some modeling done to tailor the application to the South Atlantic.

DR. HART: Absolutely.

DR. CADRIN: Here is where my question comes in is should we recommend that it go through SEDAR or should it be similar to what you described in the Gulf? I would be more comfortable if it went through SEDAR because of all that modeling and tailoring that needs to be done.

DR. BARBIERI: Well, in that case, at least for this first phase I think if I understand your point correctly, Steve, this would not be necessarily the routine assessment that would have to be done for the shrimp stocks. Basically this first exploratory phase would go to the SEDAR. It would involve the SSC participation and all the other features of SEDAR. Then eventually after we find that we have a model developed that is acceptable to the committee, just like any of the other assessments, that would be implemented on a routine basis; is that correct, Steve?

DR. CADRIN: Who would review this exploratory phase is my question? Would it be SEDAR or the SSC?

DR. BARBIERI: Well, I think it would be both. This is a question perhaps to present to the Steering Committee, because the Steering Committee is going to have to accommodate this as an additional item is my understanding as far as the SEDAR schedule. This would have to be accommodated into the schedule.

MR. CARMICHAEL: Yes, that is correct. We have the number of slots that we work with, but those are tied to the Beaufort and Miami assessment teams that traditionally work on the finfish and stuff. It doesn't actually reflect the resources that the Science Center has such as Rick who worked on shrimp. I think if you wanted to go through it, I think recommending a SEDAR type approach and bringing in them as the analysts and the SSC saying, yes, we are willing to participate in data and assessment workshops to get this done and that you would like an independent review panel of some sort.

I think a discussion of whether you think at the exploratory phase would it suffice to have a desk review, which then you review the findings of that as a way to be more efficient and really to save some resources in terms of that. I think that is something we can definitely take to the Steering Committee, and I would be optimistic there are resources to handle it in that way.

MR. COLLIER: First and foremost, do we have the data necessary based on the landings information? I don't believe we have it in North Carolina. Kyle is probably the most familiar with it, because he tried to do some of it with Spanish mackerel, right, Kyle? Could you comment on what data might be available, trip level?

DR. SHERTZER: We looked at the shrimping efforts for the states, North Carolina through Florida, for SEDAR 28 for Spanish mackerel bycatch. I guess the best I can say is that it is very spotty for most of the areas in the South Atlantic and for most of the months throughout the year. You might be able to do something averaging across areas or time; but as far as the fine-scale information, it is not there.

DR. BERKSON: Well, this fits in with my earlier comments about the agenda, and that is what is the role of the SSC with non-SEDAR assessments, how do we review them, and what level of oversight do we want to have? My suggestion is that we put together – and no one may like this, but we put together some sort of expert system where it outlines if the assessment is going to be this complex, with this kind of data, this kind of model, then this is the level of review the SSC has to be involved in.

If it is a lot less complex using a lot less data, perhaps we don't need to be involved nearly as much, but I think we need to outline some policies and some rules like that. Steve is right; if that is a council decision, at least we could make that recommendation. We are letting the council know we feel like to properly review these this is the level of involvement we need, but I don't think it should be one size fits all. I don't know that necessarily the SSC needs SEDAR level review. I don't know; this is something we need to discuss. We are talking about a lot of precedence coming down the pike and I think we need to decide how we want to deal with these in an overall policy.

DR. BARBIERI: Jim, this would be perhaps putting together like either a subgroup or like a subcommittee that would create sort of a skeleton of a set of recommendations perhaps to be brought before the full committee that would present a tiered-assessment approach and make some recommendations to the council in terms of review. Would that you think address –

DR. BERKSON: I think that is one way to handle it, using a subcommittee or working group, yes. I think the endpoint is where we need to go.

DR. BELCHER: I kind of have an opinion that because this is the first crustacean stock that we've actually dealt with. I mean, most of the people's experience around the table, Eric is probably one of the few that is actually strong crustacean. To make sure that a lot of these things that we are familiar with in modeling fish, like again the length curve analysis, that they jump in their size class; it is not continuity curve; to make sure that those assumptions that are in those models will hold for a crustacean. I think those are just some of the things that we need to think about. I know there are a lot of things that we are very comfortable with, but some of us just don't have that experience with crustacean to actually make that bridge or ask those questions that a crustacean biologist might ask.

DR. BARBIERI: Of Steve's suggestion of going through the SEDAR process for this first exploratory, we would define the terms of reference that would define the parameters of how the

assessment would be conducted. We would have SSC participation throughout that process like any of the other assessments. We would have the opportunity to provide that input.

DR. BERKSON: I don't know to what extent we can make recommendations about what goes to SEDAR and what doesn't and priorities and that kind of thing; but I think what we can say is for the SSC to review an assessment of a certain complexity, this is the level of involvement we need to have regardless of whether there is a SEDAR taking place or not.

If it is extremely complex, we have to be involved in the data selection process and understanding what data was used, what wasn't used, what assumptions were made, what analyses went forward, what models were used, what weren't, those kinds of decisions. If it is a very complex assessment, that is the level of involvement the SSC has to have. Whether we want to get involved to that extent is another question; but to be able to do a review, that is what we would need to know.

DR. BARBIERI: I agree, and you think that in a way if we think back about our last April meeting where we were discussing what we consider to be part of the SEDAR process; what is the definition of SEDAR; what types of analysis would be incorporated into that SEDAR process? I think our discussion was not to have SEDAR as really one model, one size fits all.

I know that we have – as FWC, we have participated in the SEDAR process in a very flexible way. We, of course, discuss with SEDAR staff and we make recommendations to the Steering Committee, but there is not just one model. I would prefer personally – I would like to hear what the committee feels about this or thinks about it.

But I would like to see, since SEDAR is our regional stock assessment process, I would like to see assessments that come to the SSC preferentially go through the SEDAR process. That doesn't mean three workshops and the analysis is done exclusively by the Science Center, but that means our regional assessment process. We need to add that flexibility. My understanding of your suggestion, Jim, what I think is excellent, is exactly to expand our definition of SEDAR to now incorporate some of those other forms of assessment that outline perhaps criteria that needs to be there for expansion to be legitimate. Feel free to disagree, Jim.

DR. BERKSON: Well, I'm just going to leave it at that.

DR. BARBIERI: Okay, back to shrimp; would it be worth it to explore the possibility – and think about the fact that back in August we were struggling with recommendations for the council, because at this point we don't even have an index-based recommendation to make. We were not feeling that we had the best information available in terms of how to integrate the environmental parameters. Would it be worth going through this process, at least an exploratory basis?

I think that if we have some form of data workshop or some process to review the data, you feel the data is not appropriate or sufficient to support the analysis, we will abort the operation there. SEDAR has gone through this before several times when we got to the data workshop and we don't feel that we have enough to proceed to further analysis. I would like to hear from the committee how you feel about your willingness to recommend that we go through this process.

MR. COLLIER: Well, I think it kind of goes back to the stock assessment scientist when he has the information saying the landings information is spotty at best or the effort information is spotty at best; how would you feel about using that in your stock assessment?

DR. HART: You would have to see it. I don't know what he means by spotty; I mean, like every other year or not there for this state? I think that would be the question. I'm used to looking at monthly directed effort. It is probably the best effort dataset in all the U.S. fisheries, the shrimp in the Gulf. But I don't know; we need to see what is out there.

DR. BARBIERI: If I may interject, Chip, I think this would be the process to get started. We are going to have to really look at the data; get into the weeds basically, and look at this and see is there enough there for us to move forward with a more complete analysis or are we going to have actually a formal evaluation of the data that says, no, because eventually we are going to be faced – as a committee we are going to be faced with the issue of making recommendations to the council and having to find ways to make those recommendations. I think that exploring this would lead us in the right direction.

MR. CARMICHAEL: Some of the things in the recommendation, and I think the discussion of exploratory, my opinion is that anytime we go in and begin to assess a stock that has never been assessed before, it is in a sense exploratory. We don't know where it is going to go. We have a lot of experience within SEDAR doing this down in the Caribbean.

We look at the data; we decide which stocks go forward and which stocks don't. Some go into the modeling phase, some don't. We did this very same thing with those who have been around SEDAR for its earliest years when we discussed the deepwater species. When we did golden tilefish and snowy grouper, we actually looked at about eight other species that were caught in the deepwater as well.

The decision was made from the data workshop phase to go forward into assessments of two stocks based on resources and data availability. I think the recommendation suffices that you guys are interested in having a quantitative assessment done of shrimp, and you'd like to run it through the SEDAR process.

I don't know that we need to say anymore or put any qualifiers on there about it. I think just being clear – because I wouldn't want to get into the point where we devote the resources to a SEDAR approach and we called it kind of exploratory, and then you say, well, okay, that was great and now let's go do the real one. That would be a major step backwards.

I think we need to do it and we want to look at it for all three stocks; and as Steve said, you are going to have to configure your model to meet the needs of the data for the different shrimp species just as you do for different finfish species. I think all of it is kind of inherent. And if we are going to go through and try to do this for SEDAR, then we make that recommendation and we'll try to make it happen, and we'll see what it will cost and what the workshops will entail and when it can take forward. A lot of it is going to depend on probably Rick's availability to serve as the analyst, which we can initiate those discussions with the Science Center.

DR. BARBIERI: Right. Okay, folks, we have our recommendation summary there on the board. Would anybody disagree with us moving forward with the recommendation as presented?

Of course, we are going to have time to wordsmith this later, but the spirit is basically what John just outlined for us. Okay, hearing no comments or disagreements, we will proceed with the recommendation as presented. We are almost to 10:30. I was going to go through P-rebuild for black sea bass, but we'll take a break.

DR. BARBIERI: All right folks, if I could get your attention and get folks to return to their places. I apologize for the short break, but it is really a matter that we have such a full agenda. Our next item is the P-rebuild for black sea bass. John, you have a discussion overview for the committee?

MR. CARMICHAEL: Yes, I have a quick overview for you on black sea bass. You looked at the assessment last fall and the council is now asking that you apply the Control Rule and give them a recommendation on a P-Star and a P-rebuild. I just point out that this has been under rebuilding plans for quite a while, Amendment 11, Amendment 13C.

The Regional Office wanted to clarify that what the council chose on 13C had a chance that it could rebuild sooner than the 10 years that was in place, so rebuilding probability may have been higher than 50 percent. At that time they didn't have projections that showed that, so we don't know what that was.

Then when you looked at the assessments, you've given recommendations based on the 50 percent. The council has since discussed it. The outcome from the last assessment showed that their status quo approach resulted in a 66 percent chance that rebuilding would occur by the end of the rebuilding period.

That is what they put in place in their last action, but some other council members and representatives asked that we send this to the SSC and ask for you to give the council a recommendation on the P-Star based on the ABC Control Rule. What I want to do now is just pull up the Control Rule. Just to refresh people's memory, there are four tiers to the ABC Control Rule.

They result in a scoring, which you either subtract from 50 to reduce the chance of overfishing occurring for stocks that are not overfished and not under rebuilding and to get the probability of rebuild you add that to 50 so that you increase the chance that your stock rebuilds by the end of the rebuilding time.

When you developed this control rule, you applied preliminary scores to all stocks that had been assessed at that time. Your score for black sea bass resulted in an adjustment of 15 points, which then would equate to a probability rebuild of 65 percent. We discussed this some last fall, but didn't ask that you apply the control rule and make the change in this from the status quo that you have been operating under, but now we are. We are just asking that you apply this control rule to determine where black sea bass now lies.

As a refresher, I looked back at what you had done preliminarily, which is in this control rule document, but on Tier 1, the assessment information, you scored that a 1, that you get estimates of MSY. On Tier 2, uncertainty, you scored that a 3, which is medium. Uncertainty is addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections.

That is one where I think there may be discussions since we are now under a P-Star type projection analysis for black sea bass and you may want to score that as high, which is I think how we have scored recent stocks that apply that same current technology. Score 3 is stock status. You scored it as a 3. It was either overfished or overfishing.

Right now the stock is overfished but not overfishing, so that likely stays the same. Then productivity and susceptibility; this was based on the PSA evaluation. You had scored that as a 2 for medium risk. What we would be asking for is just to apply these tiers to the SEDAR 25 assessment of black sea bass and determine what the P-Star recommendation would be.

DR. BARBIERI: I think it is a matter of us just going through our dimensions and tiers; and based on the assessment report, the outputs and results, we make the assignment of the specific value there for each one of the dimensions. Going for assessment information, considering the type of assessment, the types of outputs; I think we had an actual direct MSY estimate.

We had a quantitative assessment provides estimates of exploitation and biomass includes MSY-derived benchmarks. That should be our first tier there, Number 1. Would anybody disagree with that assessment? For the second dimension, uncertainty characterization; we have complete, we have high. The high; the key determinant is reflects more than just uncertainty in future recruitment.

The last time we assigned a medium. Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections; and then low and none. I think here is a discussion. The last time we actually considered this a medium based on the prior assessment of where we were. Looking at the assessment report, would there be any recommendation there? Should we stick with that medium or go to the high uncertainty characterization?

DR. CADRIN: I actually don't disagree with the medium categorization, but it's the reason where you have the next step up high reflects more than just uncertainty in future recruitment. As I understand the projection, it includes uncertainty in the current stock size estimate as well as recruitment. Is Kyle still around?

MR. CARMICHAEL: The assessment analyst is conveniently here and says yes.

DR. CADRIN: I don't think that all of the sources of uncertainty are included, because there are some model sensitivity analyses. There is some model error there as well that is not included, but I'd just like to open it up should it be a medium or a high based on that?

DR. BARBIERI: My interpretation, Steve, I agree reflects more than just uncertainty in future recruitment. It doesn't have to account for all the uncertainties, which in that case would go for the complete. I feel personally that this should be a high, but I would like to hear some other recommendations or suggestions from the committee.

DR. VAUGHAN: I am trying to remember just how much additional uncertainty is included in the projections. I am not sure what Steve is concerned about. What does it take to get – is it any additional uncertainty brings it from a medium to a high or are we looking for at least several other things? I thought it was actually – is it just the recruitment and the initial age structure for

the start of the projection that is reflected in the projections? Is there anything additionally included?

DR. BARBIERI: Doug, since Kyle is here.

DR. VAUGHAN: Conveniently, Kyle is here to answer that question.

DR. SHERTZER: There are two components to the projections. There is the deterministic set of projections that is used to convey the central tendency. Then there is the stochastic component to the projections that carries forward all of the uncertainties from the Monte Carlo bootstrap runs that we used to characterize uncertainty from the assessment.

That would include differences in natural mortality, selectivities, and all the things that were estimated throughout the assessment, so it carries forward all those other sources, too. I think in the stochastic projection sense they do have more than just uncertainty in future recruitment.

DR. CADRIN: Yes, I had to clear the cobwebs from this. I was one of the reviewers of SEDAR 25. Anne and Jim were as well. In going through the report, the major things we talked about was that recent recruitment may be lower and less variable than historically. This, of course, affects the median projection, the distribution, as well as the rebuilding target; because if we have those lower recruitments, then it brings that down as well.

That is an assumption of the projection of this long-term recruitment. There may be some error in that assumption. Also, sensitivity analyses gave slightly different stock size estimates, F estimates, but they all gave the same stock status. There wasn't a huge amount of model error suggested from the sensitivity analyses. I was wondering are we missing some huge source of uncertainty from just using the Monte Carlo bootstrap? I don't think we are, but I don't know if Jim and Anne want to comment on that as well.

DR. BARBIERI: They are basically nodding Steve and agreeing with your assessment of how well the uncertainties were characterized. With that, I think we are ready to recommend that we make a recommendation for the high Tier 2, for uncertainty characterization. Okay, excellent. Thank you, Steve, Anne and Jim.

Then moving on to the next dimension; for stock status, the stock status is overfished but overfishing is not occurring. That would give us Tier 3. That is Tier 3; that is 5 percent. Then the next dimension, productivity and susceptibility risk analysis, we have low, medium or high risk in terms of productivity, vulnerability and susceptibility there.

The last time I believe we gave it a medium risk given the hermaphroditic, protogynous life history pattern and the productivity of the stock. Would anybody have any other suggestion? Hearing none, I guess we stick with the medium. That's a five, bringing the total to 12.5. That gives us a P-Star. Now for P-rebuild, I think we do 1 minus P-Star.

MR. CARMICHAEL: You can add the sum of those tier scores to 50.

DR. BARBIERI: To 50; so that gives us 62.5. Based on our control rule, we get a P-rebuild of 62.5 percent. Discussion, please.

DR. BOREMAN: You lost me on the logic there. P-Star is the probability of overfishing.

DR. BARBIERI: Right.

DR. BOREMAN: A P-rebuild of 62.5 percent implies the probability of – what you are really trying to say is a probability of overfishing of 37.5 percent, right?

MR. CARMICHAEL: There are two things that come out of it, and the table from the control rule shows that you had the P-Star, the probability of overfishing. Then you have the P-rebuild, which is the probability that you reach your biomass target at the end of the time period. You increase that from 50 based on your tier scores.

That is how we've had it. You can see black sea bass in the past, the value was 15 so your P-rebuild became 65 and your probability of overfishing, P-Star became 35. In this case you have slightly lowered your adjustment factor based on the improvements and how uncertainty is handled in the model.

DR. CADRIN: Tier 1, we get 0 percent; Tier 2 we get 2.5 percent; Tier 3 we get 5 percent; Tier 4 we get 2.5 percent of 5 percent. Okay, that is where your math comes from.

MR. CARMICHAEL: Tier 4 you were 2, medium. In that case it is 5 percent.

DR. BARBIERI: My recollection is in our control rule document there is an actual narrative that describes how we arrive at a P-Star and actually how we arrive at the P-rebuild from P-Star. That should be explicit in the narrative of our control rule report. Carolyn.

DR. BELCHER: Then wasn't the probability of rebuild one minus the P-Star, which would be 67.5 percent and not 62.5 percent.

DR. BARBIERI: Yes, that was my recollection, too, is that it was one minus the P-Star.

DR. BELCHER: Yes, because I was going to say otherwise we just said it was 62.5; 67.5.

MR. CARMICHAEL: Now, if you look at the control rule document and how you have done it, your adjustment factor here in the case of snowy grouper was 20. Your probability rebuild was 70 or it is one minus the critical P-Star. Well, if you look at black sea bass here from before, you were at 15 and your P-rebuild was 65 percent. Now your P-rebuild should go down to 62.5 and your P-Star goes up. Your P-Star changes from 35 to 37.5 and your P-rebuild goes from 65 to 62.5. The values that Mike has there are correct.

DR. BARBIERI: Are we clear here? Scott.

DR. CROSSON: Yes, so Dimension 3 is now 2.5 instead.

DR. BARBIERI: Yes, Dimension 3 is 5 now; it is 5 percent.

MR. CARMICHAEL: It was Dimension 2 that changed, uncertainty. Dimension 3 is stock status; that is unchanged. The status changed slightly, but in that tier you all said if it is either overfished or overfishing, so that one is not changed.

DR. BARBIERI: I just want to make sure is everybody clear with that then? We have our recommendation to the council that is based on application of the ABC Control Rule and then sets a P-rebuild based on the P-Star value.

MR. CARMICHAEL: That will be your recommendation to the council and then the council will decide how to balance that against the 66 percent, which the status quo gave them and which what they put in the last amendment.

DR. BARBIERI: We are ready for the next item on the agenda which is the vermilion snapper assessment update, We have Kyle Shertzer here form the Science Center, Beaufort Laboratory, and he is going to give us an overview of the update assessment.

DR. SHERTZER: Thanks, Luiz. I'm happy to have this opportunity to use NOAA's brand new template for PowerPoint presentations, an exciting development. This is the vermilion snapper update assessment, which is updating the SEDAR 17 assessment which took place in 2008. This is an outline of what I'll present; quickly just some background and then I'll go through the data that were used in SEDAR 17, as well as how they were updated for this assessment, and then the assessment methods and, of course, results.

This is actually the first update assessment that we've done for SEDAR up through the new definitions of what is an update standard and a benchmark. Under this new definition, the modeling is done really in-house within the Southeast Center. We have help from the data providers such as MARMAP, ACCSP.

In this case by in-house, I guess I mean the Beaufort Lab, and so we did have input on the data from the Miami lab as well, especially with the commercial data and the general recreational data. But this is not an assessment where Kyle Shertzer is holed up in his office with the doors closed. This is a real team effort across all of the assessment scientists and others in the Beaufort Lab.

Then, of course, the end result goes straight to the SSC for review, and here we are. The goals of this update are to update the model on which management was based. The SEDAR 17 assessment had several other models that were used, stock reduction analysis, production models. Those were not revisited here; it is really more of a streamlined approach. We really tried to have high fidelity to the methods that were done in SEDAR 17, but we found something that we find every time we do an update assessment is that there really is no such thing as a "turn the crank." This is not just adding a year of data, for example.

That is due to some improvements that we think we can make in the assessment, but also some things that weren't really considered in the last assessment such as new management regulations that have come into place since 2008 and also some changes to data that we thought should be accommodated to give the best assessment that we could.

This is just a background on some of the relevant regulations starting in 1992. Of course, prior to this there was the trawl ban in 1989 or effectively starting in 1989 that did have an effect on vermilion, but since then on the recreational side there has been an increase in the size limit in total length from 10 inches in 1992 and then 11 inches and then 12 inches. That is modeled in the assessment by allowing selectivity to change as the regulations change.

In 2009 there was a five-fish bag limit put in place, as well as seasonal closure during the winter. Then there was a quota put in place to accommodate ACLs. On the commercial side there was a 12-inch limit put in 1992, and then in 2009 there were split season ACLs that were put into place. They would run for half of a year and when the quota was reached it would be shut down and then reopened again. Then the fishery would be shut down again when that quota was reached.

Then more recently in 2011 there was a trip limit that was put into place. These regulations since 2009 were something that we didn't have to consider in the last assessment that was done in 2008, but they did have an effect on how we thought about the data in this assessment, which I will explain a little bit more in detail later.

The data used for the assessment; the landings data, we had five different time streams that were used. The commercial handline was one that ran from 1958 through 2011. 2011 is the terminal year in this update assessment. Again 2007 was the terminal year in the previous assessment. We did have this commercial historic trawl that was in SEDAR 17 separated out as its own fleet.

That was only for two years, 1961 and 1962, but it was treated separately and separate fishing mortality rates were estimated for those two years for that fleet. Then there is sort of a catchall category, the commercial combined gears that ran from 1971 through 2011. The combined gears were mostly South Atlantic trawl until the ban in 1989.

After that it was really very little trawl, but a lot of other types of gears such as longline, spearing, and miscellaneous others. Then there are two recreational fleets, the headboat and the general recreational that ran from 1947 through 2011. Discard information was available for the commercial handline, 1992 through 2011, and then also for both of the recreational fleets, headboat and general recreational.

The discards for the recreational was taken back to when the fishery was believed to have started because of information from the MRFSS that indicated that discards were occurring prior to size limit regulations. This is to give you an idea of scale of the landings and the discards. These are in numbers. You may have noticed in the last slide that the observed landings for the commercial fleet were in weight.

In this slide these are predictions – at least for the commercial fleets these are predictions in numbers rather than the actual observed data that were used for fitting. But you can see that in the landings, in the early part of the time series it is mostly the headboat fleet. You can see these two years in the early part that were that historic trawl; and then the increase of the commercial fleet where it became the dominant fleet in terms of landings, starting after this increase in the mid-eighties where it became the dominant fleet.

Then you can also see the commercial other in the early 1980s was a fairly dominant fleet, but then it just disappears. That again is due to the ban on trawling in the South Atlantic. The discards are – well, by design it is all recreational in the early part of the time series. The commercial started in 1992. It is fairly well distributed across the different fleets in terms of discards.

The other thing to notice from this slide is the scale between discards and landings in that the scale of landings is about an order of magnitude higher than the scale of discards. These discards are dead discards, not all discards. The print is quite small so maybe you really can't notice that; but take my word for it there.

Length compositions; we had information from a survey, the MARMAP Florida Snapper Trap that took place in the eighties. We had length comps on landings for the commercial handline, the commercial combined gears, the headboat and the general recreational. Then we had length compositions for two of the discard fleets. We had the commercial handline and also the headboat.

We had age composition data for the other survey, which was the MARMAP Chevron Trap, starting in 1990, and that ran through 2011. Then we had age composition data for landings from the commercial handline, the headboat and the general recreational fleet. Five indices of abundance, we had two fishery-independent ones; again the two MARMAP surveys, the Florida Snapper Trap; that ran from 1983 through 1987, and the MARMAP Chevron Trap that started in 1990 and ran through the end of the time series.

Three fishery dependent indices, the commercial handline that started in 1993; the headboat that started in 1976, and the general recreational that started in 1987. Those are all terminated in this assessment in 2008. That is because of some of the regulations that came into place in 2009 that makes using these fishery-dependent indices I'd say questionable; more on that soon.

This is just the spaghetti plot of the various indices all together. The headboat is the longest running one in black here; the red one is that Florida Snapper Trap from MARMAP that is only for a few years in the eighties. Then if you can see the green one is the chevron trap that runs from 1990 through the end.

Aside from the data that were fitted by the model, there were several other inputs that were treated the same as they were in SEDAR 17, so there is no modification to those. These are life history characteristics such as the natural mortality rate. In that case we had used the usual approach that is done in SEDAR assessments with using our Lorenzen Age-Based Curve that was scaled to a Hoenig estimate of 0.22. We had somatic growth, length and weight at age, female maturity at age, sex ratio; this stock appears to be dominated by females. It was fairly consistent through time to be 71.5 percent.

There is the fecundity at age, and in this assessment it was population fecundity that was used as the basis for spawning stock. The discard mortality rates that were provided by SEDAR 17 were different for the commercial and the recreational, but actually somewhat similar to the headboat. General recreational had a point estimate of 0.38 and then the commercial handline was 0.41.

These next few slides explain updates to the data in addition to just adding years of data; 2008 through 2011. That was done where possible, and there are a few exceptions that I wanted to highlight. The easy exception is that there are a few time series that don't extend to the end of the time series. Historic trawl was only for 1961 and 1962, so those did not need to change.

Also, the MARMAP Florida Snapper Trap data were only in the 1980s. Those were exactly as they were in SEDAR 17. For the other four indices, the index values applied a delta-GLM to estimate the full time series. Those models were refit in their entirety using the new data. The full time series of data was used, and the same methods that were used in SEDAR 17 were applied, but those indices were re-estimated for the full time series.

There may be some differences going back in time before 2008 in the data from what was used in SEDAR 17, but the methods were the same. Now the fishery-dependent indices were extended only to 2008, and that was because of these recent management measures that I think make their ability to track abundance questionable; in particular the bag limit on the recreational side and on the commercial side the seasonal closures, and then more recently the trip limit.

Then the data from the general recreational fleet were previously based on MRFSS methodology. In this assessment we used the MRIP estimates for 2004 through 2011. It is going back farther than the terminal year in SEDAR 17. The SEDAR 17 estimates went through 2007. Here the 2004 through 2007 estimates would have changed from what was used in SEDAR 17. The 2008 through 2011 would also be based on MRIP.

I put little green checkmarks next to these last two because I wanted to go into some more detail on those. Back to these indices being extended only through 2008; this is just a recap of the regulations on this slide, but in the recreational side there is this winter closure. That may or may not be important. The delta-GLM may be able to handle that okay with a time effect or a month effect.

It is unclear how it would handle that when there is a change in the time series when you drop time in the middle, but it would be possible, I guess, if you change methods to maybe just focus on the open seasons throughout the whole time series. What was more concerning was this five-fish bag limit.

The commercial did have the seasonal closures from the split seasons and then the trip limit. This next slide is on the recreational side of things the number of fish caught per angler trip. In 2006, this is the headboat on the left, the panel all the way on top left is – this is 2006, and this is when there was a 10-fish bag limit.

If you look at the distribution of fish per angler per trip, you can see that there is a little bit of heaping at the bag limit of ten, but the proportion here is not really high. It is approaching 10 percent. When we looked at multiple years, it was generally less than 10 percent, but there were a few years it exceeded it.

During SEDAR 17 we did a sensitivity analysis on the 10-fish bag limit and its affect on the index and it appeared to be rather small. We didn't think that was an issue in SEDAR 17, but in the middle of 2009 there was this change to the five-fish bag limit, and then you can start seeing more heaping at the five-fish bag limit. Then the last two years, 2010 and 2011, there is quite a

bit of heaping. They were suggesting that close to 20 percent of the trips are hitting the bag limit.

That is a concern when you are using these data to try to track abundance, because it sort of disassociates what we are seeing in CPUE from the abundance that is in the water. You see this same pattern in the general recreational data where in the earlier years, 2006, yes, there is a little bit of heaping at the 10-fish bag limit; you didn't really see it much at all in 2007, 2008. But then starting in 2009, when they transitioned to the five-fish bag limit, then you do start to see a lot higher proportion of trips that are bumping up against the five-fish bag limit.

On the commercial side there is these split season ACLs that were resulting in a closure each time they were applied. The season was lasting approximately three months and then it would be closed for three months, and then open it back up when the next quota was applied and it would be opened for about three months, so about half of the year would be closed.

Again, that has some unknown effects on using these data for computing indices of abundance. But similar to what we saw with the bag limit in the recreational, the trip limit that was implemented in 2011, you can see this went into place in July and you can see this top panel in January through June, sort of a long tail in this distribution of landings per trip.

Then when the trip limit goes into place, then you can see that it is having an effect and the data are truncated. In a similar vein to the bag limits, this can cause lots of troubles with having fishery-dependent indices of abundance track the actual abundance. I did want to make the point that this is something we are going to be dealing with a lot. This isn't unique to vermilion, but because of the types of regulations that have been going into place recently our fishery-dependent indices across the board are probably not going to be very useful.

We are going to have a lot greater need and emphasis on the fishery-independent indices of abundance that we are getting. I did calculate the indices of abundance through the terminal year for the fishery dependent. Although I don't think they are necessarily valid, I did want to see what effect it would have on the assessment if I did use them.

This is a sensitivity run that is in the report. It turns out in this case that there really was very little effect on the assessment results. That might be comforting to anybody who is concerned about not using those data. My opinion is that fishery-dependent indices of abundance are on shaky ground to begin with; and so applying these management regulations makes their use even more questionable.

The other change or consideration for this update in the data was the shift to MRIP estimates for 2004 through 2011. I did at least want to show you what the difference is between the MRFSS estimates and the MRIP estimates. This plot, this is straight from the MRIP website, but it shows that there is not a major difference between the two estimation methodologies. Several of the years are very, very close. A few of them are a little different, but there is not any concerning trends or consistent difference that I would say is present here. The mean difference and the median difference are just about the same at 3 percent between the two sets of estimates. Maybe I should pause to see if there are any questions on the data or the data inputs.

DR. CADRIN: Just a comment. As we're starting to get through this update process where the SSC reviews updates, the only feedback here is that if the executive summary could just summarize what the data modification are in the transition to MRIP, the revised GLM. Things like that I think would help us as a roadmap to go to the sections of the report; so just feedback for future updates. I think if the executive summary could point us to where there were analytical decisions made either with data or model, that would help us in the executive summary, but so far so good. No questions, thanks.

DR. GRIMES: Just curiosity; you said the fishery was mostly females, 70 some percent female. Sex ratios in the population is my recollection mostly one to one. Was that some sampling of sexes or just was bias on how it showed that it was mostly female?

DR. SHERTZER: I think it was mostly the fishery-independent data that were collected, although it may have been pooled with fishery-dependent data. I'm not sure, but these were – I'm looking at you, Marcel – I don't know if it is a sampling bias. It was taken to be at the time indicative of the population though and not just of the landings.

DR. REICHERT: Yes, Kyle, Dave Wyanski is here. He is our reproductive biologist, and he just said that it is mostly based on fishery-independent data, Dave?

DR. BARBIERI: No other questions, then we are going to allow Kyle to move on to the next section.

DR SHERTZER: Just a further comment on that; I don't think it really has much effect on the assessment results. It sort of scales the X axis on the spawners.

DR. BARBIERI: But it is an interesting issue if it represents – my take from your comment, Church, is that this is something that a long time ago you did not see, right?

DR. GRIMES: That's right.

DR. SHERTZER: Okay, the basics of the assessment model were the same as in SEDAR 17. We applied the Beaufort Assessment Model. It is a catch/age formulation that is fit to the data using maximum likelihood. We used Beverton-Holt, spawner-recruit formulation with lognormal error.

In SEDAR 17 steepness was fixed at a value of 0.56. I guess I would point to that as being one of the major changes in this update, and I'll come back and discuss that in more detail later. The model was initialized in 1946 with an unfished population using the stable age structure that you would expect without fishing.

As I mentioned previously, the Lorenzen natural mortality was applied. Selectivities were age-based and were allowed to vary across regulation blocks. For most cases we used the logistic flattop selectivity for the dominant fleets. There were a couple of dome-shaped selectivities, and in those cases we used this – well, those are for the traps, the trawls, and the discards. There is some modification to what we did from SEDAR 17 for the dome-shape selectivities. I'll touch on that later, too.

We used the Baranov Catch Equation to estimate Fs. The model assumed a 2 percent annual rate of increase in catchability for the fishery-dependent indices. That was to account for increases in fishing efficiency and technology creep and such. Now, some of the modifications that were made to the model; some have consequence and some really don't.

One that didn't was this auto-correlation parameter that was estimated for the spawner-recruit curve. In SEDAR 17 it was estimated at something very, very, very, very small. In this assessment it was just fixed at zero and was not treated as an estimated parameter. The parameters for selectivity in this assessment were estimated with priors.

In the previous assessment they were not estimated with priors, and we did have some issues in SEDAR 17 with some of the selectivity parameters going toward bounds. In some cases the parameters had to be fixed at their bounds. It seemed a better approach. It's an approach that we're using in most assessments now to use a prior on the selectivity parameters just to keep the parameters from drifting into the likelihood space where you don't see any response in the optimization.

As I mentioned before, we used a different function for modeling dome-shaped selectivity. In SEDAR 17 we applied a double logistic formulation. Since then we've really come to frown on that formulation. One, it requires being rescaled to have a maximum, if you want to have a maximum of one. I think that gives the optimization procedure, the search a lot of trouble.

We've settled on another formulation that can really mimic the same shape of the double logistic, at least the shapes that we're seeing. It seems to be much better behaved. This is just the negative expediential on the descending limb, but it does require that you fix full selectivity at a certain age, which we did in this case by examining that age and comparing likelihood values across a range of ages and choosing the one that gave the best fit.

Then the ascending portion of the dome-shaped selectivity in this case was estimated as free parameters. It would only be two parameters, say, for age one, age two, and then you might fix selectivity at one for age three. Then for four plus, it would be this descending curve that had a single parameter for the negative expediential shape.

This was applied to the MARMAP Chevron Trap. It was also applied to the commercial discards. Now this is a change that was required because of new regulations. In the previous assessment the discards appeared to be mostly driven by the size limit, the 12-inch size limit. Since 2009 there have been seasonal closures.

They are still catching some vermilion snapper, but now they are discarded even if they are of legal size. This bore out in the data that the length comps that it wasn't just undersized fish that were being discarded. We tried to account for the commercial discard selectivity, including sized fish that would have been greater than 12 inches.

The commercial combined gear selectivity had two different time blocks. Block 1in this assessment allows some selectivity of the Age 2 fish. In SEDAR 17 it was all Age 1 fish and this is because we had some length comps from this fleet that were I think all from trawl data that showed that there were very small fish that were being caught. In SEDAR 17 it was selectivity only on Age 1, but this led to this problem that if you had, say, a year before that of

poor estimated recruitment, then to match the landings the F just had to go through the roof. It led to this really spiky behavior in F that didn't seem very realistic.

By allowing some selectivity of Age 2 fish, it helped ameliorate that problem. At the same time the fits to the length comps were not really deteriorated. These are values that were fixed, and the length comps were not estimated. The length comps the fits were not part of the objective function, but we did examine them just to see where our predictions were relative to the observation.

Also in SEDAR 17 this Block 2 was assumed to start in 1992 with the implementation of size limits, but in re-evaluating that it didn't seem that realistic, because it wasn't the size limit that was driving the change. It was a change in the gear with the ban in trawl in 1989. In this case the change in the shape of the selectivity that occurred with the new time block went from descending selectivity to an ascending selectivity where it matched the commercial handline.

In this assessment that was assumed to happen with the change in gear type going from dominantly trawl to all these other gears; spears, traps, longline. That shift was assumed to occur in 1989 rather than in 1992 with the size limit change. Now all that said, this is a very small chunk of the overall landings, this commercial combined. This is really sort of "in the weeds" of the assessment.

A few more modifications that were made to the model; one is just an output modification, and that is that the total Fs are represented as apical F in this assessment. In the SEDAR 17 it was the sum of the full Fs. This is something we're doing routinely now with the ban, but it originated from the SEDAR 17 review where the Review Panel suggested that we make this change to apical F in part so that we can compare Fs we're estimating from the assessment to Fs that we might get out of Catch Curve analysis.

They'll be more comparable, so we did make that change here. But again that is not really a model modification as much as it is just an output modification. Another change was the data component weight. In SEDAR 17 we had these applied external weights that the assessment workshop settled on after reviewing a range of different weights and tradeoffs between different data sources.

In this assessment those weights were divided by 10. The reason for that was that, one, it maintains the same relative weights among the data sources. But the real reason for that was to try to scale down the maximum gradient in order to improve the optimization. What it ended up doing was allowing estimation of steepness in addition to improving the optimization, and that was because the spawner-recruit part of the composite likelihood then had a little bit more influence relative to the data components.

Another change that was made was applying a true likelihood formulation to estimating the spawner recruit deviations. In SEDAR 17 we used a sum of squares penalty. In this one it is the full negative log likelihood formulation. This did require adding the parameter Sigma-R; the standard deviation of recruitment and log space. That was estimated with a prior distribution that had a mean of 0.6. I mentioned before that a big change was in the steepness. I think everything else has been sort of small beans, but the other big change that is here in SEDAR 17 is the implementation of the Monte Carlo bootstrap approach that was used to quantify uncertainty.

In SEDAR 17 we didn't do anything that was that comprehensive; it was just a simple bootstrap on the spawner-recruit residuals to try to get estimates of uncertainty in the benchmarks only. I think what we attempted to do here is a bit more comprehensive, and the reason for doing it was because of the, I would say I guess, increased attention on quantifying uncertainty that the council has had in recent years.

This next slide shows the effect of making these modifications. This is still using the old data from SEDAR 17 and fixing steepness at 0.56 just to show the effects of the various changes that we've made to the model. Starting with the SEDAR 17 model, and that is the curve in black, removing the parameter for auto-correlation and then putting priors on selectivity is the curve in red, which very closely tracks the SEDAR 17 model. There is very little effect of those two implementations.

Then there is a change in the selectivity formulation for the chevron trap and then also for the commercial combined fleet. You can see that there is a little bit of a change when we make that. I should say these are cumulative changes. These aren't individually made but cumulative as I go through them.

You can see with that addition there is a little bit of a change in the predicted recruitment for some of the years between, say, 1990, the early to mid-nineties. There is a little bit of change in the predicted recruitment. Most likely that is due to the change in the chevron trap selectivity. By and large the results are still similar to what we saw from the SEDAR 17 model.

The next change in this sequence is the change in the weights where the data components were weighted by a tenth of what they were weighted in the SEDAR 17 model. We can see that differs very little from the previous change. Then adding the negative log likelihood to the spawner recruit curve; that one does show a little bit of a change in the scale or the magnitude of spawning biomass, a little bit also in the recruitment.

Looking at the time series of estimates of F and SSP relative to their thresholds, it is very similar to the previous assessment. I think the take-home message here is that these modifications that were made; I think they are improvements, but they are incremental and they are not really having a big effect on the results.

A little bit more on steepness in SEDAR 17; we attempted to estimate steepness, but it appeared to not be estimable and it was hitting the upper bound and getting stuck at the upper bound. The assessment workshop anticipated that we would probably be going to a proxy for FMSY and suggested that F40 might be a good proxy.

Steepness was fixed at a value that would give consistency between F40 and FMSY so that they would be equal. This was under the realization that there is this one-to-one relationship between steepness and the proxy that equals FMSY. Basically if you fix a proxy, if you choose a proxy, F30 or F40, you are essentially choosing a value of steepness. This was something that we were starting to realize and then Liz Brooks and Joe Powers published a paper on it.

In this assessment we anticipated F40 being the proxy. For the base run we fixed steepness at 0.56 so that the proxy would be consistent with what it was supposed to be a proxy for FMSY. Now in this update steepness seemed to be estimable. This was in part due to the new data, but I

think also some of the model modifications, in particular the reduction in the model component weights and also using the negative log likelihood for recruitment.

What you are looking at in this slide on the left-hand side is a likelihood profile over steepness. The vertical line is the point estimate that the base run was coming up with, which was about 0.71. If you look at this profile, you can see that there is pretty strong information that it is not very low, but then it gets rather flat for this range that is, say, 0.55 out to 0.9 or so.

There is not strong information in the data. I don't know if you can see the scale or not of what we're looking at, but it is ranging from about 1,149 at the minimum or 1,148, maybe, up to about 1,150 or so. There is not a big change in the total likelihood across this range of steepness. I'd say that the value of steepness is still quite uncertain, but this right-hand plot shows a narrower range of this same thing we're looking at on the left.

It does have a well-defined minimum. This is again the point estimate from the base run. I'd say in this case that there is still a lot of uncertainty in what steepness is, but I was somewhat comfortable with the base run estimate in the sense that it sort of turned out to be in the middle of this range of uncertainty.

DR BARBIERI: Kyle, may I interrupt with a quick question? Steepness was estimated freely, right, unconstrained, but coming from that prior –

DR. SHERTZER: In this case no prior was applied to steepness so it was freely estimated. Yes, it was allowed to go over this full range during the estimation. In this profiling it was fixed at each of these incremental values. Another slide showing the cumulative effects of changes; the first one is using the SEDAR 17 data, but the updated model but with steepness fixed at 0.56.

The SEDAR 17 value that is the green. I see everybody looking into their laptops; do you guys have the – okay, that is good to know. You actually can see what I'm talking about, okay, good. The dotted line, which is in green on the screen but maybe black and white for you, I'm not sure, is using the SEDAR 17 data with the steepness fixed at 0.56. Then if we take that same model and still keep steepness fixed and update the data, that is what we're looking at with the dashed red line.

You can see that there is some effect on spawning biomass, also on recruitment and particularly in the earlier part of the time series, but the results are quite similar in terms of the fishery and stock status, if you look on the two panels on the right-hand side. Now when steepness is updated and it is estimated at 0.71; that is when you see the bigger change in the results.

The total recruitment really doesn't change much. The spawning biomass is a little bit lower than what we saw with the SEDAR 17 model. Much of that is due to the updated data. The bigger effects that we see are in the time series of F over FMSY, which shows that it is lower throughout the time series, and then the SSB over its threshold MSST, which shows that it is higher throughout the time series.

Steepness has a big effect and probably is the major driver in terms of differences in this assessment from what we saw in SEDAR 17. Now just focusing on what I was calling the base run, this is the time series of spawning stock biomass. Again this is population fecundity.

Through time it is a decreasing pattern and by the end it is just very close to SSBMSY, maybe just barely below, but still above the threshold of MSST.

This plot shows the time series of recruitment in the top in terms of number of fish. You can see that it is variable; also that the biggest recruitment year for age ones was estimated to be in 1989. The bottom panel shows the same thing but just in terms of residuals rather than the absolute scale. The plot shows the spawner-recruit curve.

Estimated through time it has the bias-corrected version and the estimated curve is a slower one. The expected curve in arithmetic space is the upper curve. That is the curve that we calculate benchmarks from. Then you can see through time how as biomass is decreasing what is happening with the recruitment around that curve, and again that 1989 year class is this really large one.

The next slide is estimates of fishing mortality rate. The one on the left shows F over FMSY, which you can see throughout most of this time series is not showing overfishing. There are a couple of years where the values exceed – where F exceeded FMSY. You can see on the right-hand side, which breaks this down – these are full Fs – but breaks this down by fleet, that the spike that we're seeing in the F is all coming from the commercial handline fishery.

Then it drops very quickly in 1992, and there are a couple of reasons for this drop. One is that if you remember there is this big year class coming in 1989. Because of the selectivity, it is not yet being seen by the commercial handline fleet. If you look at the age structure that it's fishing on, there are quite a few low values of abundance across ages and landings is increasing in those years.

It is a combination of fewer fish that are available to that fleet and increases in landings. But then in 1992 the F drops dramatically, and that is in part due to the regulations that went into place in 1992, and it is in part due to this huge year class from 1989 that is now becoming available to the fleet and is being caught.

I've put this table in of management quantities because I like little numbers and little boxes, but it does show that FMSY is 0.75. It is higher than what we see for a lot of the snapper grouper fisheries, but you can also see that there is a wide uncertainty in terms of the standard error that we're calculating from the Monte Carlo bootstrap runs.

The estimate of FMSY really is quite sensitive to steepness. If steepness were to go close to, say, the upper bound, it is possible that this stock matures very, very young. I think about 80 percent of them are matured by Age 1 and 100 percent by Age 2. With that in combination with a very high steepness value suggests that you could really fish them in an FMSY of infinity.

The other thing I thought I would point out in this table was just the terminal year estimates of F over FMSY. This is a geometric mean of the Fs from 2009 through 2011 are at 0.67, so it is not showing overfishing. Then the SSB in the terminal year 2011 relative to the MSST is 1.26., so it is not showing that it is overfished.

The uncertainty analysis – and I mentioned this – is what I would consider in addition to steepness the other major change from SEDAR 17 is that we use this approach to quantify

uncertainty. We tried in this case 3,600 attempted model fits that all differed in terms of data and inputs. A couple hundred of them did not converge or else had some estimated values that were at bounds and so those were discarded.

In the end there were 3.368 runs that were retained to quantify uncertainty. The ways these run are that there is the bootstrap component, which is a bootstrap on the data themselves, so the lognormal components – that includes the landings, discards and indices – we use a parametric bootstrap on the original data using the CVs that were applied in the fitting procedure.

For example, for the indices, those would have been the CVs that came out of, say, a delta-GLM model. In this case they were rescaled for the fitting. The multinomial likelihood components included the length and age comps, and in this case they were regenerated by sampling the number of fish that were observed to make the length comps, assign them to the bins with the same probabilities as in the original data.

That is the bootstrap part of this, and then there is the Monte Carlo part of that which entails drawing at random values for some of the inputs to the model. One of those is natural mortality, and this is the natural mortality that is the Hoenig estimate used to scale the aged-based Lorenzen curve. The point estimate was 0.22 that was used in the base run.

The range that was provided by the Data Workshop was 0.16 to 0.28. This approach uses a normal distribution, a truncated normal distribution with the mean at the point estimate of 0.22 and the bounds at the range provided by the Data Workshop. A similar approach was taken with discard mortality on the point estimates of 0.41 for the commercial and 0.38 for the two recreational fleets.

It's drawn from a normal distribution with the means and the bounds provided by the Data Workshop. Steepness was drawn also from a normal distribution. In this case I took the mean of the distribution to be the point estimate from the base run, which was 0.71, and applied a standard deviation of 0.19, which comes from a meta-analysis – standard deviation from a meta-analysis of bottom fishes, including snapper groupers from the southeast.

It turns out that if you go plus or minus that standard deviation from the mean, it gives a range of 0.52 to 0.9, which was right about the range that we saw in the likelihood profiling of where that thing was flat, so it seemed like a good range to use in the Monte Carlo sampling. Sigma R was drawn from a normal distribution that also had – well, had its mean of 0.6 in the standard deviation of 0.15, which was also from meta-analyses of data.

Catchability was assumed to increase in the base run at 2 percent per year. In the Monte Carlo draws it was assumed to be a range of 0 to 4 percent and drawn from a uniform distribution. Then there were the historic recreational landings that in SEDAR 17 were developed from the saltwater angling reports. In that case they were scaled down to 75 percent of the observed values during the assessment workshop.

That was done to account for recall bias that was expected to be present in the observed data. For this assessment I scaled them to a value of 50 up to 100 percent. The 0.75 is right in the middle of this uniform distribution, but the scale of the recreational landings was adjusted in the Monte Carlo draws as well. These are the pieces of the Monte Carlo. When you run this and fit

the model 3,000 something times and then compute the distribution of the results, you can see that the distribution of FMSY in the top left panel has a long tail.

You can see that the base run had an estimate that is just a little bit to the right of where you see the mode. It is a bit closer to the mean and the median of the distribution than it is to the mode. The bottom left panel shows the distribution of MSY, along with the line again showing the point estimate from the base run.

The top right is the distribution of SSBMSY, and then the bottom right is the distribution of the biomass at MSY. This is a scatter plot of all of the results from the MCB analysis. This is plotting on the X axis the terminal estimate of the fishing status, so terminal F over FMSY; then on the Y axis the stock status SSB and the terminal year relative to MSST.

You can see the scatter plot of all of the results across all of the runs. The width of the crosshairs shows the 95 percent confidence intervals from all of the runs. The point of intersection of the crosshairs shows the estimate from the base run. The bulk of the runs are up near where the base run was estimated in this qualitative area of not overfishing and not overfished, but you can see that there is a bit of uncertainty in that result.

This plot says the same thing but in a little bit of a different way. It just plots the distribution of those terminal estimates. The top panel here is SSB relative to MSST, the distribution. You can see where the point estimate from the base run falls in the full distribution. They were about 25 percent of the MCB runs that ended up in this area that would be considered overfished, where SSB was less than MSST.

I'll skip talking about this middle panel. The bottom panel shows terminal F over FMSY and the distribution and where the base run falls according to the distribution. In this case about 30 percent of the MCB runs fell into this category of overfishing. In both cases of evaluating overfished or overfishing, the majority of cases in the MCB analysis agree with the base run.

The projections that were run – and we talked about this earlier on the sea bass, they are very similar here. They carry forward the uncertainties from the MCB runs. They would have uncertainties in, say, the initial abundance. By initial I mean the beginning of the projections, so in 2012 at the end of the assessment period; the spawner-recruit functions including steepness and R 0 and Sigma R; natural mortality, discard mortality, the selectivities, and as well as the recruitment deviations through time as we go into the future.

It also contains the uncertainty in FMSY. The landings in 2012 are assumed to equal the average from 2010 and 2011. That was requested – I guess it was from the council who requested that but it was in a document that I received with information on how to conduct the assessment, what they were looking for, so I included that.

New management was assumed to start in 2013, so any change occurred starting in 2013. These analyses did not include management uncertainty so that the total removals in the projection were assumed to equal whatever the ABC was. I ran this for two different probabilities of overfishing. One was 0.275 and one was 0.5.

The 0.275 was chosen because in the previous assessment we had run it for a series of different P-Stars, and the SSC in the end interpolated the results from 0.25 and 0.3. I thought this might – if you stick with that same recommendation, this might save you from having to interpolate the values, so we just went with 0.275.

Then 0.5 was chosen because that might be an option to consider for setting I guess OFL. This next slide shows the results from the two different projections. The top one is for the P-Star of 0.275. You can see that in 2012 the F is a little higher to match the landings that we've seen, the recent landings, so the probability of overfishing in 2012 is 0.355, but then after that it is fixed. By design it is fixed at 0.275.

The probability of being overfished remains at about 0.25. I was surprised that it didn't vary at all through the projection, but it remains at about 0.25. Then the ABC values you can see are right around 1.1, 1.2 million pounds. This is a little bit higher but pretty close to what was recommended as the ABC, which was around 1.1 million pounds. Then you can see similar results for a P-Star of 0.5. In this case the probability of being overfished increases through time. Of course, the ABC is a big higher for that probability. That was the last slide that I have to present so we will stop for questions.

DR. BARBIERI: Folks, I think it is high noon now and given the fact that this discussion might be more productive after we have rested and nourished ourselves a little bit; I would say if there are any burning questions the committee has, let's go ahead and ask those questions now, but then let's postpone – if you don't mind, Kyle, postpone the more detailed discussion to after lunch. Are there any burning questions that anybody would have for this time? If not, let's break for lunch. Yes, John.

MR. CARMICHAEL: Kyle, just a question about the use of the MRIP values, because the recommendations now are using like the ratio to update the past, you know before the estimate. I wonder if you wanted to comment on that. I can see that as being something that will lead people to ask questions and say how different was MRFSS and MRIP and just what your thoughts were on that; just using that re-estimate period, combined with the original MRFSS estimate period.

DR. SHERTZER: Well, just briefly a little history on that; this was in the works before that recommendation came out to even go back in time. We had these data and we were well on our way with the modeling before that recommendation came out. Yes, I think the recommendation there is if there is a bias, to try to make some adjustment and maybe even try to account for temporal trends that you might see. When I looked at the plot for 2004 through 20011, there weren't any obvious temporal trends. The difference between the two was about 3 percent on average across the years so they are pretty similar in this case.

DR. BARBIERI: Thank you, Kyle. Let's break for lunch and then we can reconvene and get started for the afternoon at 1:30 sharp.

The Science and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Tuesday afternoon, October 23, 2012, and was called to order at 1:30 o'clock p.m. by Chairman Luiz Barbieri.

DR. BARBIERI: We are ready to start. We have a full house and we are ready to start. The issue is we are going to have a very, very busy afternoon. We basically are going to have to discuss any issues and make a recommendation regarding vermilion snapper. We are going to have to go through red porgy and the wreckfish and complete all of that this afternoon.

I'm going to ask you to please be focused. I'm going to be a little bit more forceful perhaps with timing, but try to be a little more so we can move along with what we need to get completed this afternoon. With that, I guess we are going to have Kyle back and we are going to go back into discussion about the vermilion snapper assessment update. Are there any questions or comments from the committee? Chip.

MR. COLLIER: The age of selectivity for the commercial line fishery seemed to decrease once the size limit was put in. I was just curious why that might have happened. I'm sure you have an answer for it.

DR. SHERTZER: I don't know, but I can speculate. It is being driven by the comp data, the estimation. I don't know but perhaps there was more of a market in earlier years for the larger fish, so it would have been shift in the selectivity to the younger fish when the size limit was put in place. I don't know if that is what occurred or not, but that is one possibility that could explain it.

DR. CADRIN: It seems like when we review these updates we should be looking for a few things and that was is there a change in stock status for this? It appears that there is not. Is there a change in data or methodology? There have been some and I think Kyle walked us through those fairly well, .

From my perspective they are all well justified as either the data treatments or the modeling. In looking through the model diagnostics, the one thing that jumps out at me is the length composition; the fit to the length composition for the combined commercial and the headboat, around 20 and 30 centimeters or 200 and 300 millimeters. There is this bad residual pattern, but I went back to SEDAR 17 and it was in that assessment as well.

I'd say that we would also be looking for is this the same quality of assessment in the update that it was? I think it is similar or better quality. I think the estimate of steepness is an improvement. The revised reference points would be considered an improvement over a fixed steepness based on an F40 proxy, and the Monte Carlo bootstrap I think is a more comprehensive estimate of uncertainty. In those two aspects I think this is as good if not better than the peer-reviewed one. With no change in stock status and potential improvement, I think this gives us a basis for our ABC recommendation.

DR. BARBIERI: Are there any more questions or comments from the committee? According to Steve's comments, which I agree with, one difference that we have this time around is that we have an estimated steepness. We actually have an MSY-derived benchmark, which would impact our P-Star value, which would justify us going through our ABC Control Rule. But before we get to that point, anything additional anybody would have comments, concerns or suggestions for Kyle before we proceed?

DR. BUCKEL: Yes, I just want to thank Kyle for taking the time to walk us so carefully through all the changes. That was a really nice way to handle an update. Thanks.

DR. BARBIERI: Kyle, I'm going to echo that. I was actually talking to John Carmichael in the hallway. You really set the gold standard as far as this assessment. I don't mean to embarrass you, but it is true. I think that as a committee we want to make this point explicit, because it is really what we would like to see.

The way that you walked us through some of those decisions and you really are very detailed; it really is a big help for the committee in evaluating what the new issues are, what are the improvements to the assessment and all. We appreciate you going that far. Let's go ahead and apply the control rule. We have it right there on the board.

For assessment information I think we are in Tier 1 now that we have MSY-derived benchmarks. We have a zero percent. For uncertainty characterization, again the discussion that we had earlier regarding black sea bass I think is applicable here as well. Steve summarized that very well in terms of the improvements in the way that uncertainty is being characterized and accounted for and actually carried forward.

Would anybody disagree that in this situation we have a high characterization of uncertainty? Well, hearing none I think we'll go with that. That would be a 2.5 percent Tier 2 for Dimension 2. For stock status, as Steve mentioned, stock status is unchanged. It is neither overfished nor is overfishing occurring. That is Tier 2.

Stock may be in close proximity to benchmark values. I think that is the point that Kyle made very explicit. We would be there, so that the 2.5 percent in Tier 2 for Dimension 3. The last dimension, the risk analysis, productivity and susceptibility, between low, medium or high. We had it –

MR. CARMICHAEL: Your prior scores, you had scored it as a medium risk based on the PSA analysis of the numerical scores.

DR. BARBIERI: Would anybody have any comments or recommendations to change that previous assessment of medium risk for vermilion snapper? Scott.

DR. CROSSON: Are PSA scores even changeable? Aren't they related to the biology of the stock? I guess our opinion of the PSA score could change, but the underlying variable shouldn't, right?

MR. CARMICHAEL: Actually, the scoring for this you developed from the PSA, the MRAG paper, and you had explicit values that you gave a range for each one of these based on the scoring range; so, yes, unless something changed and you went back and re-evaluated that entire process, I don't see this changing unless something drastic changes and it really changes your perception of a stock and its characteristics to go into that PSA.

DR. BARBIERI: Good point, Scott. We stick then with our medium risk of 5 percent. That gives us a total of 10 percent and a P-Star of 40 percent. It is a significant change from the last time that we had. I don't know in terms of getting the projections, Kyle, from the document.

DR. SHERTZER: I had not anticipated P-Star changing so I did not run them for 40 percent. This will have to be run after today, and I can send the report or table to the council or SERO or both.

DR. BARBIERI: Okay, yes, just send it to John Carmichael. I think that if we make explicit here what we are looking for in terms of those results, Kyle, I don't think that the actual values need to be determined at this meeting. Basically we want to use the estimate of MSY with a projection at a P-Star of 50 percent for OFL.

Then we want projections for a P-Star of 40 percent. It is just a matter of the committee deciding the length of the projection period, whether we are comfortable with a five-year projection or something different. I don't know what the default length of projections that you guys produce actually is, Kyle.

DR. SHERTZER: Not that we have a default projection; but I do know that as you go farther in time, these types of P-Star analyses have a potential to break down because of the possibility of just the high variability in the stock structure. In particular some scenarios where a given level of landings can't be supported by a low level of abundance, so the shorter the term the better for these types of analyses.

DR. BARBIERI: Right, and along those lines we had already discussed before that basically five years is the maximum time horizon that we would consider, but we have asked in the past for shorter projections just because we felt the level of uncertainty was too large. Marcel.

DR. REICHERT: Yes, and also that vermilion is on the SEDAR schedule for 2015, so we should get an update in 2015.

MR. CARMICHAEL: That is a maybe on the schedule, yes.

DR. BOREMAN: Yes, but looking at the projections that are in Table 16 and 17 for P-Star 0.275 and a P-Star of 0.5, if you look at the recruitment and the spawning stock biomass, it really doesn't vary that much at all. It is fairly level, and that to me gives me more confidence that we can go out more than a few years. We are not getting big fluctuations in stock.

DR. BARBIERI: Right, in that case I would say, Kyle, if we can get the projections for five years for that P-Star of 40 percent – we already have the P-Star of 50 percent for the OFL – I think we should be all set. Any other comments or suggestions regarding the vermilion snapper update?

MR. CARMICHAEL: You have a few other things on your action items. One is to discuss assessment uncertainties. We've mentioned quite a few things so I just think we should check that to see if there is anything else to add; uncertainties, if there are discarding issues, and then a recommendation on the next assessment.

DR. BARBIERI: Would anybody have any comment? Uncertainties I think we have already discussed, because Kyle was very thorough going through the MCBs and what they entail. I think comments that Steve made earlier helped us really characterize how we feel the uncertainties are taken care of here, so our only other items that we have to deal with.

DR. REICHERT: I've got a quick question. If you go to the ABC Control Rule, what data does it take for a stock to be in that Tier 1, Group 1?

MR. CARMICHAEL: The uncertainty Tier 1?

DR. REICHERT: Yes, Number 1.

MR. CARMICHAEL: Tier 2 to be complete? Well, what you said was uncertainty in both assessment inputs and environmental conditions are included. That was the criteria applied back when this was developed.

DR. REICHERT: What data or what information is needed for that; because if we want to move forward, I think that is where we ultimately want to move to.

MR. CARMICHAEL: Well, that is perhaps something we should discuss and maybe set that aside until later. Once we get through these assessments and think about that, you guys could maybe come up with some guidance for how you could move a stock up in that tier.

DR. BARBIERI: Yes, I agree. Now comment on potential discarding issues.

DR. BOREMAN: Going back to the five-year horizon; does that mean we are not even going to look at the stock for five years or are we going to be looking at stock parameters each year to make sure that it is still on track or something in between that?

DR. BARBIERI: My understanding is that unless we explicitly request for that to be the case, that the analysis – the next step would be follow the SEDAR schedule; if there is a benchmark now tentatively scheduled for 2014 or '15.

MR. CARMICHAEL: You would look at landings and if there were surveys; but if there was a MARMAP CPUE, they would do a report each year and you would have that available to look at.

DR. BOREMAN: That's what I mean. We're going through the same thing in the Mid-Atlantic and coming up now with control rules for setting multi-year ABCs. When we do a recommendation now for multi-year ABC, we list the key parameters that we are going to be looking at each year to track to give the Center a heads up on data that we'd like to see pulled together. It may be landings. We usually do landings; recruitment; the distribution in the fishery, has the fishery changed in terms of its distribution inshore, offshore, whatever; items like that that we would look at each year just to make sure that it is moving along within reasonable bounds.

DR. BARBIERI: Right, so if I hear you correctly, John, you are suggesting that we make – in this case, given the length of the projections, that it might be wise for us to request a number of parameters or data.

DR. BOREMAN: Just metrics that we could use just to keep an eye on the stock and make sure that we come back in five years and there is still a stock there.

DR. BARBIERI: What is the status then of the SAFE report?

MR. CARMICHAEL: That is an agenda topic for later and I think this would be a perfect thing to talk about then, because that seems like the right mechanism to bring this information forward and look at stocks and what we have available. Where we have MARMAP CPUEs, those are included, and we have the landings, so that to me is the right place.

DR. BARBIERI: The discarding issues; John, was this a concern that was coming out of the council?

MR. CARMICHAEL: This is a general open question that is applied to pretty much all of them; are there discarding issues? We mentioned closures. The council is increasingly seeing seasonal closures and ABC, ACL being met type closures; size limits were mentioned. Are there any comments on those issues for this stock? Does it seem that discards are causing potential problems? Say if we were in an overfishing situation, might you say that discards was implicated in that to some extent? It is kind of open and it is applied to all of these stocks.

DR. REICHERT: I noticed a drop in discards in the recreational data in 2011, and maybe Kyle can answer that question if there is any indication what the origin is of that since we are talking about discards.

DR. SHERTZER: I don't have any insight on it; sorry.

MR. CARMICHAEL: I think I looked at the recreational discards and noticed some decline, too. I think part of it is the discussions we've heard often about the decline in overall effort, especially related to offshore fisheries over the last few years. I think that is probably part of it.

DR. REICHERT: But that doesn't jive with the landings, I think.

DR. BARBIERI: Well, given the final outcome of the assessment, I don't think we have any major discard issues causing a problem for vermilion snapper. That is a sentence, Mike, that we can add there; I mean nothing raising a red flag at this point as something we are going to continue monitoring over time. Now recommendations on the next assessment, type and timing; right now there is a tentative benchmark scheduled for 2015. I think the question is would we continue supporting a benchmark and would we propose different timing other than 2015.

DR. BERKSON: What is the justification for a benchmark at that time rather than another update? Are we thinking about something being missing?

DR. BARBIERI: I'm sorry, I misspoke. It is an updated schedule and not a benchmark,

DR. BERKSON: Given that we're close to the reference points and moving towards them, I would think we would want to have an update done. I don't know exactly what that timeframe would be, but it would be more pressing for a stock like this than a stock that wasn't near reference points.

DR. BARBIERI: My fault; I misspoke regarding the type of assessment. Basically what is proposed right now on the SEDAR schedule is acceptable to the committee; no suggestions for modifications, right?

MR. CARMICHAEL: By 2015? I mean if you look back in your overview on Page 6, you see the priorities in 2014 and you see the ones in 2015? Those that have a number by them in 2015 are probably a little higher in the priority scale. Vermilion is right now ranked below gray snapper, dolphin and wahoo, tilefish and red grouper.

Red grouper is in a rebuilding plan; that is why that is a priority. The question then is the red porgy, which we'll talk about; but they're saying 2015 or no later or would you accept 2016 if it came to it; no later than 2016, because then you are getting pretty old. Try to make it happen by 2015?

DR. BARBIERI: Thank you, John. Now I guess we are ready to move on to the next. Do we have our statement there? Yes, I guess we have our statement. We are ready for red porgy assessment. Kyle, again thank you for coming over and the great presentation. The next item on the agenda is the red porgy assessment update, and Lew Coggins, who is also at the Science Center Lab in Beaufort, is the lead analyst for this update. Lew is going to give us a presentation summarizing the results of the assessment update.

MR. COGGINS: Thank you, Luiz, and thank you, committee members. Yes, Kyle certainly has set the gold standard for me to follow particularly as I get to talk about a stock that does not have such good news, but at least we have this fine new PowerPoint format to have a look at to help us guide us through this assessment.

I've got the pleasure to provide an overview of the second update of the red porgy, which was the subject of SEDAR 1 that was done in 2002. There was a subsequent update. This will be the outline of my talk, and in fact Kyle and I really endeavored to kind of have our talks follow a similar format. Hopefully, that will help you all as we go through this.

I'll provide some background, talk about the data in particular, review the data sources, and talk about some updates as well as some corrections that we've needed to make to the data. Then I'll go through the assessment and results; in particular review the benchmark and first update assessment methods; what modifications we felt were essential to make; and then go through some results.

As I mentioned, the assessment history for this stock for SEDAR was that this was a subject of SEDAR 1 in 2002 with terminal year data through 2001. There was subsequently an update assessment fairly recently afterwards, which considered data through 2004. This assessment is the second update of that benchmark and considers data through 2011.

It considers a decade's worth of data after the benchmark. Similarly to what Kyle mentioned, this is another update assessment under the current SEDAR definition. Overall this model was constructed – I was the lead analyst, but a lot of us at the Beaufort Lab had input into this model, as well as the data providers, particularly MARMAP, and we are here to review it.

I also wanted to mention that this stock has received a lot of assessment attention through time, beginning back as early as 1992 with Vaughan et al, and then Vaughan and Prager in 2002. In those cases this stock was deemed to be "severely depleted" in that 2000 timeframe by Vaughan and Prager. This is a stock that has had quite a bit of management attention for some time, and we've had a chance now to have a look at it for ten years since that attention really started being paid to it.

The assessment goals are again to update the benchmark and the 2002 update model with the new data, '05 through '11. We tried to be very cognizant of restricting model modifications to only those required to address significant problems that we ran across and to the best of our ability produce a defensible assessment.

There certainly are more contemporary methods that we could have included in the model that would bring it, so to speak, up to speed to a more recent Beaufort Assessment Model type procedures, but we really tried to honor the spirit of the update assessment and only provide model modifications that were required to address problems that we ran across.

Just to provide a little bit of a regulatory history here, I put this table together. It is a little bit more complicated than vermilion. Every place you see red is the first place that a particular regulation showed up. Again, trawling was prohibited in '89, which impacted red porgy. In '92 there was a 12-inch size limit put in place that affected both recreation and commercial fisheries.

That was in place through '99 when a 14-inch size limit and a bag limit was put in place for recreational fisheries and there was a seasonal closure for the commercial fish. Then right in that time period where there was a lot of attention being paid to porgy, there was a moratorium, September '99 to August, 2000.

Following that moratorium the 14-inch size limit remained in place. The recreational bag limit was set at one. For commercial fisheries there was a seasonal closure, January through April. There was a 50-pound trip limit put in place. Following the first update and taking effect in October '06, the bag limit was increased to three for recreational fish.

There was 120 fish bag limit put in place for the commercial fish. There was a 127,000 pound quota put in place. Then in March '08 there was a TAC established, 395,000 pounds approximately, which was part of the rebuilding plan. Then December '09 through present there has been a 190,000 pound quota gutted weight for both recreational and commercial fish with that 50 percent allocation.

With that background I am going to move into talking about the data that this assessment considered. For landings, for the commercial fleets we had the handline from essentially the beginning of the assessment, '72 through present, the same for traps and pots. The trawl fishery was '72 through the elimination of the trawl fishery in 1988, or through right before the elimination.

Then for the recreational fleets we had the headboats, '72 through present, and general recreational. Similar to what Kyle described, we used data from MRFSS, from essentially '72 to '03, and then MRIP from '04 to 2011. This plot gives you an idea of what those landings look like through time.

You see that initially the headboat was the dominant fleet for landings, beginning in the late seventies. The commercial landings started to increase and to peak in the early eighties; somewhat of a decline and then peak again in about 1990. There were fairly stable landings '92 through about '98. Then the landings really fell off in 2000 with the moratorium and then have been at a pretty low level through this last decade with the exception being a slight increase after 2007 when the last regulation changes were made.

Another thing to notice for the general recreational landings is that trend in green. Before 1981 there were no MRFSS landing estimates, so what they decided in SEDAR 1 was to take the average from '81 through '90 and use that average for what the landings were back to the beginning of the assessment in '72; so from '72 to '80.

Another thing to point out is this just shows the landings of the commercial fleet. The main point I want to make here is just that particularly recently but all the way back to the late eighties the vast majority of the landings are from handline. There was a time period there in '81 and '82 where trawl made up a fairly significant portion, but the trap has always been a pretty small portion. It is the handline that is the dominant commercial fishery.

For this assessment, beginning with the update discards started to be modeled for both in the commercial fleet, for the handline beginning in 2001 through 2011, and for the recreational fleets for headboat and the general recreational. These are modeled as separate fisheries with discard estimates that are available.

One thing to note is that prior to 2001 the discards were included in the MRFSS landings just because those data are available through the MRFSS surveys. These are the patterns the discards look like from 2001 through 2011. One thing to note is that the discard mortalities are significantly lower in this kind of last three-year time period, particularly for the commercial fleet. The other thing to note is that these are dead discards, so these are discards after a discard mortality rate has been applied to, and I'll talk more about that.

DR. BOREMAN: Lew, you have discard mortalities, parens, a thousand fish; what do you mean?

MR. COGGINS: Thousands of fish.

DR. BOREMAN: These are actual numbers; this is not a percent of the catch.

MR. COGGINS: That's right; and in fact I should have mentioned that prior to '09 these kind of roughly reflect about 20 percent of the total removals. After 2009 it is closer to about 5 percent. There really was quite a large decline in the number of discards relative to the total removals. Okay, we have length composition data from all three of the commercial fisheries at different time scales. We have length composition data from headboats.

We do not – and based on SEDAR 1, they evaluated using length composition data from the MRFSS surveys. And at that point in time it was too spotty and they decided not to use it so it is not included in the last update or this update. We also have length composition information from MARMAP, from both the Florida trap survey and the chevron traps.

The other thing I wanted to mention is that we do not have any length composition data or age composition data from discarded fish. I'll talk briefly about how we estimate selectivities for discards or how it was set up in SEDAR 1. For the age composition we have data from the commercial handline and the headboat and again from the MARMAP surveys.

As far as the abundance indices, we have three indices. The one that goes furthest back in time is the headboat, the fishery-dependent index that was set up via kind of typical GLM methods. In the benchmark assessment in the '06 update, there was a Delta-GLM method used to standardize that index.

That data was not updated again for this assessment because it ended in 1998 because of some of the same reasons with fishery-dependent issues that Kyle mentioned. The MARMAP indices – the Florida trap obviously did not change since it went '83 to '87. The MARMAP chevron trap index was updated.

It is a nominal index in both the benchmark and the '06 update and in this update, but since then MARMAP staff have developed a standardized chevron trap index, which since it is the only abundance index we have I also used that standardized index as a sensitivity run to see whether or not it changed the assessments at all, because it is pretty important to this assessment.

Overall this is what the indices look like. You can see this overlap between the green headboat index and the MARMAP chevron trap index in the early nineties and then that short period of time where we have the Florida trap index in the mid-eighties. One thing also to note here is that looking at the MARMAP chevron trap index you see this kind of increasing trend beginning in about 2000 up through 2006 or so, and that is to a large degree what drove the increase in the stock status from the 2006 update. It had a terminal year of 2004.

The most recent years of this index, however, are showing a bit of a declining trend. It is just something to point out there. Then there was a series of other inputs that were given to the model the same as the SEDAR 1 and the '06 update. SEDAR 1 assumed natural mortality for this stock to be 0.225 and the same mortality rate across all ages.

We used the same length, weight, power relationship model parameters, and we assumed the same discard rates that were assumed in SEDAR 1. The headboat and commercial handline was 0.35, and for the general recreational it was 0.08. I'll mention some modifications to the data. In general what we hoped to be able to do in as many cases as possible, and we're able to, was just update the data by appending and additional seven years to the data that was used in the '06 update. There were some exceptions to that.

Some of the time series didn't change. For instance, the headboat index and the MARMAP trap data, those did not change. The other thing about red porgy is that beginning with the benchmark and continuing through the first update is that there was this issue discovered that essentially one lab was aging whole otoliths and another lab was aging sectioned otoliths.

They found that these two labs were – and this was in the benchmark, were seeing a one-year discrepancy, or they were seeing discrepancies. In the '06 and in the benchmark they looked at some sensitivity analyses looking at either ages based on whole otoliths or sectioned otoliths. Those sensitivity analyses really did not show a big impact to the assessment.

Through the ’06 update – that was again looked at – by that time the labs had gotten together and realized that the whole otolith preparation was causing them to miss a first annulus. In general, no matter which lab it was, so long as they aged whole otoliths, they ended up seeing younger aged fish. As they got together, they realized that looking at sectioned otoliths was probably a more accurate estimate of age.

In this update all the ages that are considered are from sectioned otoliths. There is no sensitivity analysis again repeated for a third time to look at that impact. Another pretty major issue in this assessment is it was discovered in SEDAR 17 that the MARMAP age composition data, so the age composition data that are collected from the MARMAP surveys, those data were being collected from fish that were sub-sampled from the catches based on length categories.

Because of that, those sub-sampled fish were then aged to come up with an estimate of the age composition. That is known to provide a biased estimate of age composition. That was recognized first with vermilion in the SEDAR 17 assessment and techniques – well, essentially an age-length key was used to expand all the unaged fish with their lengths or to weight the age composition by length composition to come up with an unbiased estimate of age composition.

Now it turned out that same thing was done for red porgy and was recognized also for this assessment. The MARMAP folks went through that same correction procedure and corrected those age composition data. Now that impacted the entire dataset and not just data since the last update. It impacted the whole dataset.

Looking at it, I could not see systematic changes as it shifted mean age one direction one year and another direction another year. That is actually what the MARMAP staff reported, also. Anyway, we are looking at this updated corrected age composition data. Additionally when the MARMAP staff went through and looked at the length composition data that had been used in SEDAR 1 and in the 2006 update, they determined that there was a discrepancy between those data input files and what existed in their database.

It is not a simple story as they went through it to figure out, well, it was just a transposition of years, that looks like it was part of it, but also some of the proportions per length category were also off even when you looked at a transposed year. Those data were corrected also and are based on MARMAP staff’s analysis or updated based on their most recent database.

Those were some corrections that had to be made to the data used in the analysis. Some other updates were looking at computing the proportion male at age. Of course, because porgy are those protogynous hermaphrodites, we end up using proportioned male at age, following up on the benchmark methods. That analysis was updated with 2005 through 2011 data as well as the proportion of mature female fish at age.

Actually that one considered data – MARMAP staff considered data ’03 through ’11 to update the proportioned female at age. One thing that in SEDAR 1 they recognized that it appeared as though that porgy exhibited some plasticity and their proportion mature females at age and that it seemed to change through time, and SEDAR 1 decided that they should look at that proportion of mature females at age by different time blocks, which were basically associated with different sampling regimes and with different changes in fishing regulations.

The last thing to mention as far as updates to the data was that the landings data for the general recreational fleet were previously based on MRFSS estimates. This update uses MRIP 2004 through 2011. That 2004 estimate replaces a MRFSS estimate in 2004 that was used in the '06 update. This is a comparison from the Miami Website showing the difference between MRFSS and the MRIP estimates for harvest. I could pause there and see if anyone has questions about the data.

DR. BOREMAN: Not a question, but a comment. You are using the MRIP going back to 2004. I remember at the workshop we talked about getting back to 1998 and continuing those calculations back. The latest update from our crew at headquarters is that will be done by the end of FY 13, October, another year from now. Because of everything else that is going on with MRIP, that just dropped down on the list of priorities, so we're stuck with 2004 to 2011 for the next year.

MR. COGGINS: Okay, I'll first kind of give a basic overview of the Beaufort Assessment Model that was used in SEDAR 1 and the '06 update. Again, as Kyle mentioned, some of this is going to be a repeat. This is obviously the catch-at-age formulation fit to data using maximum likelihood methods with the Baranov Catch Equation kind of at its heart to estimate Fs.

In all three of these assessments the Beverton-Holt spawner-recruit model was used for the production function with lognormal error, and steepness was estimated in all three of these – well, the benchmark and the two updates. As I mentioned, natural mortality was assumed to be age independent.

We had age-based selectivities that were allowed to vary across regulation time period. We used logistic functional form for the commercial handline trawl and recreational fleets. We used a dome-shaped functional form for the commercial trap and for the MARMAP trap index gears. The discard selectivity was – as I mentioned, we didn't have any length or age composition information for discards.

Essentially what was done in SEDAR 1 and in the '06 update was for a particular gear and for a particular age to look across all the time blocks and find the largest value of selectivity for that age and that gear across the different time blocks – that is what the selectivity was for that age – and then go to the next age and look across all the time blocks and find the highest, and so forth.

These are basically – the shape of these discard selectivity curves are logistic. The idea is that it is modeling not only discards because of size selectivity but also because of bag limit limitations. Also, to point out that the spawning stock was modeled as the biomass of mature fish, both male and mature.

Now this has been shown by some work that Liz Brooks and others published that this was a conservative way to deal with protogynous hermaphroditic stocks as far as for estimating benchmarks. SEDAR 1 took this tact and the two updates following it took this tact. Now, one of the things that Kyle mentioned that we did do, many of the modifications that we made to this model were in order to improve essentially its stability and its convergence properties in the optimization was a fair number of these model modifications were done so that we could productively engage in the Monte Carlo bootstrap procedure to assess uncertainty.

The last model was fairly brittle. It exhibited some fairly troubling convergence properties; it was a bit unstable. One of the things that I had to do was kind of go through and try and decide – it was arguably over parameterized in certain ways, and to kind of go through and figure out what levels of complexity I could reduce without having an impact on the output of the model in order to make it a bit more stable and to improve its convergence properties.

In particular, as Kyle mentioned, it had used this double logistic functional form which requires the use of a maximization function, which an AD model builder is not a differentiable function and so it can cause some problems with the optimization. That was changed, and what we did was we basically specified – in the dome-shaped selectivities we specified the age at full selectivity based on the '06 update and then estimated a negative expediential decay on the descending limb and estimated a logistic ascending limb. That seemed to work quite well.

The other thing was that in this model the length at age is estimated internally with the Von-Bert model. The previous assessments had allowed CV of the length at age to be different across each of the ages. That was yet another level of perhaps over-parameterization that caused some instability. We made a simplification to allow coefficient of variation of length at age to be constant across all the ages.

The other thing that we needed to do was – the way that SEDAR 1 initialized the model and also estimated the recruitment function was allow there to be recruitment deviations all the way back to 1958, when the model was initialized, to attempt to fit an age composition from the headboat that was in 1974 as well as to kind of try and chase this somewhat noisy headboat index early on. I'll show you this a little bit more carefully.

We ended up – when we tried to use that formulation, that same model structure with this updated data, we had this problem with simultaneously fitting landings, discards, and the MARMAP Chevron Trap Index, which we really wanted to be able to fit carefully, because it was the only abundance index we had.

After trying some various model formulations, what we then ended up doing is no longer trying to estimate recruitment deviations before the data started, only after the data started, '75 through 2011. That actually also addressed some concerns that were brought up by reviewers in SEDAR 1 where they were concerned that estimating the recruitment deviations early on in a time period where those deviations were not informed by data could be problematic.

Another thing we did, as Kyle mentioned, we used priors on the selectivity parameters. They were pretty uninformative for this model with the exception of the trawl parameters where basically I fixed those. I used the variant formative coefficient of variation, which essentially fixed those parameters to the same form that the 2006 update had.

This again avoids the parameters approaching bounds and helped with some of the convergence issues. The last big thing as far as model structure was we removed the time dependency in the selectivity for the commercial handline and the headboat. What had been done in the initial SEDAR was to estimate a separate L50 each year during that 1958 to 1991 so that logistic selectivity curve could vary back and forth each year. Again, it just seemed fairly poorly justified and contributed to some model instability.

Now, both the SEDAR 1 and the 2006 update applied external weights to the data components. Kyle talked about this, also. When I tried to use that 2006 weighting scheme that had been used for the last update, it did not allow the model to do a very good job at all of fitting the MARMAP Chevron Trap Index in the terminal years, and so we had to go through a procedure to try and adjust the weight to fit that MARMAP index time series.

The simplest way we thought we could do it to try and as best we could honor the weighting scheme that had been developed in the previous assessment was to adjust the weighting component on the age and length composition components. I'll actually show that in a little more detail here in a moment.

That strategy seemed to work pretty good and it is right in line with some recent work published by Francis on data weighting using an iterative re-weighting approach, which the general advice is make sure you fit your indices before you necessarily try and fix your composition data. That was the kind of general strategy that we took.

Again, another big change in this assessment is to have the uncertainty estimated via this Monte Carlo bootstrap approach. In SEDAR 1 the uncertainty in the benchmarks were estimated to be the Delta method from AD model builder. In the '06 update, the uncertainty in the benchmarks was through bootstrapping the spawner-recruit residuals. Kyle actually mentioned how that procedure worked.

What we did was to try and fall in line with what has been recommended by the SEDAR Uncertainty Workshop and is now pretty standard practice for the Beaufort Assessment Model assessments coming out of our shop. The first thing I wanted to show you here was this is essentially the effect of including that new data from MARMAP.

If you have a look at the right-hand panel here, this is a time series of estimated spawning stock biomass using the 2006 model in the red solid line with the original data. You can see that particularly after 1980 these three lines line up. The green line is the 2006 model with the corrected data. That is the corrected data from MARMAP, and you can see that.

The green line and the red line match one another after about 1980. The blue line is the corrected data with the updated model changes that I mentioned. Essentially you see very little difference there between the blue line and the green line. Now the other thing that I show there is the estimated steepness up in the right-hand corner of the legends.

The red line had a steepness estimated at 0.5, the 2006 update model with the original data. Once we included the corrected data, that same model estimated a lower steepness as did the updated model with the corrected data, 0.42 and 0.43. What ends up happening and why that benchmark ratio changes is as those steepness's decline, then what happens is the R 0, which is negatively correlated with the steepness, increases. That ends up causing the spawning stock biomass at MSY to increase.

The denominator of that quotient in the left-hand figure increases with the updated data, which causes that ratio to decline. Again, by updating this data we do see a change in what the stock status is for this stock, but we don't see much of a difference at all with the changes in the model that seems to again allow mostly for these better convergence properties and more stability.

Now the other thing I wanted to show was what I mentioned about the data-weighting issue. On the right-hand side of the graph here is the MARMAP index data as the dots. Each of these different lines is a different weighting value applied to the composition data ranging from a 0.1 up to 1. The pink line is the highest one. On the right-hand side graph, that one is the composition weight that was applied in 2006.

You can see that that pink line basically doesn't follow that decline in the MARMAP index. I had to decrease the weight of the composition data at each step. It caused a better fit to that MARMAP index data. All the way down to that red dashed line is only a 0.1 composition weight. To try and find a good, essentially tradeoff between still fitting the composition data and fitting that trend, we picked a composition weight of 0.25 for the base case.

The right-hand graph shows how that same kind of a weighting scheme affects the fit to the headboat data. Those are the model results or the assessment methods. Now we'll jump into results. This is basically a figure that tells the story with this assessment that again the earlier assessment showed this decline through 2000. There had been – after the first update considering data through 2004 that had been this increasing trend; that increasing trend looks like it continued on for a few more years to about 2007 and now it seems to have stalled out.

I'll talk about what looks like some of the reasons, but that is the kind of basic assessment result as far as stock status. This is for the fishing mortality. The right-hand graph is F over FMSY. You can see that again beginning in about 2000 the stock is generally not overfished. The 2007 and 2008 are approaching overfishing, but they are still estimated slightly under. You can look at that left-hand graph and see again the distribution of fishing mortality. It is mostly the commercial fisheries particularly again during that large buildup.

This is what the base run estimates as far as a recruitment time series. There are two things I want you to see here. The first one is this big increase in recruitment and decline. The other thing I want you to have a look at is how there are these negative recruitment deviations towards the end of the time series.

What is going on here is again basically part of this initialization. The model is trying to fit this somewhat noisy trend in the headboat index. By starting the recruitment residuals or deviations in '75, it tries to fit this big change. It is quite variable; this relative abundance index during this time period, but the model is trying to chase that. That is very similar to what the previous updates did also.

Then also what we see is that during the last six years it looks like four of these years have had fairly negative recruitment deviations contributing to some poor recruitment during that time period. This is overall what the spawner-recruit curve looks like; again as the bias corrected curve and the straight Beverton-Holt curve. I wanted to point this figure out in particular for a couple reasons.

Number 1, in the report that you all received to review I had an error in the plotting code for this figure. All of the lines here are correct except for the MSY equilibrium line. In the figure that you reviewed, this line is shifted downwards so that it is quite similar to what this 2011 curve looks like. In actuality that line, as I said I had an error in my plotting code. That is something

that will get corrected in the assessment. I actually have paper copies of it if you would like to have a copy of it.

Overall it again kind of suggests that same trend, that overall the slope of this line is higher than what it was in these earlier time periods when the population seemed to be more highly exploited. It suggests that there was some kind of poor recruitments during this time period associated with that 2011 curve.

I also wanted to point out this figure that is in the report also, which is the static spawning potential ratio; again, the main point I wanted to make here is that this is mainly a reflection of what the fishing mortality is. These are what the spawning potential ratios would be if, for instance, the fishing mortality observed in 2000 was held steady for a long period of time until the population reached equilibrium, so these are not a reflection of the stock status.

They are really a reflection of the fishing mortality. I wanted to make sure that was clear based on some comments I had heard. Okay, I just wanted to point out a couple of estimates here. FMSY in this assessment is estimated at 0.17, which is lower than the previous assessments, which was 0.2, which also affects when you look at these benchmark ratios, so now the denominator is larger in F over FMSY, which tends to cause that ratio to be larger.

I also wanted to point out that here are the estimates of, for instance, what the terminal fishing mortality geometric mean ’09 through ’11 over FMSY is about 0.64, indicating that the stock is not overfished, but we have benchmark ratios of 0.61 for spawning stock biomass over FMST and 0.47 over SSBMSY, suggesting that the stock still is overfished but again not undergoing overfishing.

A big part of the differences between this assessment and the previous assessment is in the estimate of steepness, so I want to spend a little bit of time looking at that. I just thought I would show how the time series of these different benchmark ratios look. In general, for the 2012 update it shifted lower on the stock status and the FMSY is shifted slightly up, but the patterns are quite similar.

What is happening here is differences in the estimate of steepness. In the benchmark assessment steepness was estimated at 0.48. In the 2006 update it was estimated at 0.50. In the 2012 update it is estimated at 0.41. This is the profile likelihood for steepness. This is actually what looks to be a pretty precisely defined estimate of steepness. It is not too unexpected for a few reasons; because, Number 1, in contrast to like the vermilion assessment that we just looked at. it is not a one-way trip.

We actually have the ratio of biomass over B zero – biomass zero in this time series starts at about 0.7, drops down to about 0.1, increases back up to about 0.2. That is a one and a quarter way trip, for instance, so that has information to try and estimate the productivity function. Unlike the likelihood profile that we looked up for vermilion, this one is a little bit more dipped, I guess you would call it, rather than peaked. That is what the likelihood profile looks like.

The other thing I’ll mention when we look at the MCB results is that it again even looking across the bootstrap and Monte Carlo iterations, the steepness is estimated quite well, , quite precisely. Just to give you an overview of the uncertainty analysis, I conducted these 4,000 MCB iterations.

Like Kyle described, there is a bootstrap part where we are sampling. We are doing a parametric bootstrap to get landings and indices based on the original data and the CVs that were used in the fitting procedure, and we're sampling from multinomial likelihood components to get the composition data. Those are the bootstrap parts.

The Monte Carlo parts are – I only had two Monte Carlo uncertainty components, the first one being natural mortality. You can see that the limits for that truncated normal distribution for 95 percent confidence intervals were at 0.2 and 0.25. Now that is a fairly narrow range, but that is what the data workshop came up with for SEDAR 1 so that's what we followed up with.

We also included sampling from the truncated normal distribution for headboat and commercial handline discard mortality. That was a truncated normal that ranged from 0.25 to 0.45. This is what I mentioned before. This is the uncertainty in the estimates of the spawner-recruit parameters. In particular have a look at this one here; this is for steepness.

I've zoomed in on this distribution compared to what is in the report so you can see it a little bit better. It is ranging from about 0.35 to about 0.47. It is pretty precisely defined in this model. These are the uncertainty in the benchmarks. Again, the distributions are quite symmetric. That is actually kind of a nice result technically, anyway.

One thing I guess I didn't mention before is that the MSY for this assessment is estimated about 200,000 pounds higher than the previous assessment where it was around 620 or so. Another kind of general planning here is that it appears as though with this assessment it says that if you allow the stock to build up to a higher level, the MSY is considerably higher. You can harvest more fish out of it.

This is again all those Monte Carlo bootstrap plots plotted in this phase diagram with these green lines showing the 95 percent confidence intervals. Again, we see similar to the last assessment a stock that is estimated as basically not undergoing overfishing but it still is overfished. This is just another way to look at that, which is the same ratios for SSB over MSST in the top figure.

This distribution does not include 1, SSB over – in 2011 over SSBMSY does not overlap 1. The fishing mortality benchmark status, it just barely overlaps 1. Okay, I'll just briefly talk about the sensitivity analyses. I conducted four. The first one was using that standardized MARMAP procedure that has recently been developed by South Carolina DNR folks.

I also assumed a higher discard mortality rate for the headboat and the commercial handline equal to a paper that was put out in 2010 by Steven and Harris, which was all the way up to 0.82. I also assumed that steepness was fixed at 0.5, which was the level it was estimated in the 2006 update. Finally, I increased the weighting for the MARMAP Chevron Trap Index to kind of an astronomical number just to say what if we really absolutely believe that MARMAP index?

And if you look across those three sensitivity analyses and in general you don't see a qualitative difference in what the stock status is or what the fishery status is. You see that in general it is still seen as overfished even when you assume that steepness is at 0.5, and that it doesn't appear to be overfishing occurring.

Finally, I did a number of projections and I chose time periods either ending in 2018, which is the end of the rebuilding time period, or I round some later so that we could see a longer kind of fuller projection through time. Each of these time series carried forward one of these randomly chosen Monte Carlo bootstrap runs.

It incorporates uncertainty in the parameter estimates and the initial abundance at age, and then as well has the stochastic component that allows the recruitment to vary into the projection timeframe. These are all the projections I did and they have all assumed that management started in 2013. It assumed that the landings in 2012 were defined as the mean landings in 2010 and 2011. Similar to vermilion, that was specified in one of the documents we received from council staff. That was at about 300,000 pounds.

I'm going to show two of these projections, Scenario 1 and 2. The first one with fishing mortality held at zero; that is this one. As you can see fishing mortality drops to zero beginning in 2013. This projection says that there is about an 18 percent chance of this stock rebuilding by the end of the rebuilding timeframe in 2018.

It looks like that you could have about a 50 percent chance of rebuilding about three years later if you dropped F down to zero. The next projection is if you kept F at the current, which is 0.11, which is the geometric mean of the last three years, there is about a 2 percent chance of it rebuilding in the next few years at 2018, but it should rebuild. It looks like it would rebuild sometime in that latter part of the 2020s. That is the end of the prepared slides I have. I'd be glad to take questions.

DR. BOREMAN: Yes, Lew, you mentioned that you used the constant M for all ages. Was that for both males and females; was it the same M for both sexes?

MR. COGGINS: It was. That was how SEDAR 1 was laid out. That was the assumption in SEDAR 1.

DR. REICHERT: I remember the vermilion snapper benchmark. We had a discussion about using vermilion for bait. I don't remember, but is there a similar issue with red porgy? I don't believe that was taken into account in this assessment and you believe that it may – if we have an estimate, would that affect the outcome of the assessment?

MR. COGGINS: Marcel, I am not familiar with the discussion about vermilion so I am not sure I can give you an informed answer on this one. Could you give me a little bit more background?

DR. REICHERT: Well, I remember that during the Data Workshop it was mentioned that vermilion was used as bait. John, maybe you can help me

MR. CARMICHAEL: There was a MARMAP study that looked at discarding. I thought that was where the initial discussion on vermilion came from, because there was recorded in there that a lot of them were being used for bait. This was my recollection. I think it was primarily vermilion and not so much other species.

DR. BARBIERI: Lew, I would like to explore a little bit more discussion on the steepness estimate and our sense of confidence. If we look at the Shertzer and Kahn paper, if we look at

that prior that is informing really what our range of steepness is for those bottom fishes, this would be at the very bottom or close to, which I read from that paper as something that is very uncommon or not very likely.

Because of that, 0.41 would be a very unlikely in terms of occurrence that we would assign. I would feel because of that it would be worth just discussing. Looking at your stock-recruitment relationship, that point plot, the 1976 recruitment value; when I look at that, it doesn't seem to really fit the pattern. It seems to stick out. If we could project there the stock-recruitment relationship.

MR. COGGINS: Yes, sure.

DR. BARBIERI: With the understanding that all of these stock-recruitment relationships are always unsatisfactory, this one actually seems to have more points that are closer to that line that we usually see in terms of a major scatter. I wonder what the influence of that one point in '76 would be playing on this estimate.

I'm thinking if we get somebody outside of the field of biology or fisheries, simply a statistician to look at that and say, okay, well, we have a mathematical function there that is representing a pattern and we are fitting the data to that function, and I wonder if that one point would survive an outlier type of diagnostic. I know it is complicated, because this goes back to 1976, but I wonder could that be caused by some kind of measurement error?

MR. COGGINS: Yes, as I said, what is happening here – and this happened with the benchmark and it happened with the update – is that the initialization procedure that this model uses, the model is put into this tension where it has to estimate these really big recruitments early on. It has to, and it is because it is trying to fit this time series right here, this headboat time series.

I mean. you asked me several questions there, Luiz. The first one is we have two things going on here; how much do I believe that one particular recruitment? I think to a large degree what it is, is it is initializing the model. I'm not looking at it so much as believing that in this headboat index back here, that, for instance, the abundance of this fishery changed by more than 100 percent in two years. I kind of have a hard time buying that one, right. But no matter how I initialized the model, if I try and fit this time series, I have to have some big recruitment deviations. That is what you are seeing here.

DR. BARBIERI: Right, and in a way – and I was reading this through the weekend and just sitting on the porch and I'm like let me just enjoy this thing, and I'm thinking could this perhaps be scaling these expectations of recruitment beyond the range that are really biologically possible?

If we remove that point, the entire function would be rescaled likely to a different value and the curve – the fitting of that curve would be impacted. I was just wondering in terms of an additional sensitivity, maybe explore with some of the – you know, Doug is here, Jim is here, some of the people who were in SEDAR 1, not to mention Churchill, who was around here at the time – and could there be data issues given the significant of that large deviation there?

MR. COGGINS: As I said, there are a number of other ways to initialize the model and set this up. Again, trying to do our best to follow the definition of the update assessment, we only deviated from the way it was set up to the extent we thought was necessary. One of the things that would be interesting to consider is whether or not – so, for the landings there was a higher coefficient of variation assumed back in this period of time, but that is not really reflected in this coefficient of variations of the index.

If you were to say that the CV of the data points back here was much higher, then the model would not try and fit each of these. That would be another way to basically try and get the model to not try and chase all of that noise. Again, we felt like that we had to strike the balance of exactly how much we could alter the model or alter the interpretation of the data.

This is where we are with it, but there are certainly other things that could be done. I also have to say that we have done the sensitivity run with a higher steepness value and it doesn't really qualitatively change the assessment. It is that this rebuilding seems to have stalled in these last few years.

DR. BARBIERI: I don't disagree, but you fixed that – instead of estimating the steepness, you actually fixed it at 0.5. That assumes that since this will be using the same initialization method as was used in SEDAR 1 closely, that that would be correct. Now we may have different perspective in looking at that.

Another issue is – and I remember the recommendations from Chris Francis regarding the iterative weighting and how that has helped. I remember the red snapper assessment. But in this case, I wonder if we are losing the information contents of the age comps perhaps too much. I didn't see the actual weight values there to get a better idea of how much are we balancing the information content that is coming out of the indices versus the age comp?

I'm not trying to be problematic here. I just feel that if we discuss this we might get to exploring some other possibilities that might provide us a wider range of what we believe is the plausible envelope of runs, because right now the recommendation we have to make to the council is that this stock could not really be rebuilt in the foreseeable future. There would be massive consequences. We just want to make sure that we explore as much as we can viable options.

MR. COGGINS: I think that is a great idea. I will show you this one as well. You mentioned this idea of the impact of the data weighting. This is something that I explored some. I just was trying not to overload the presentation too much. But this figure right here, this actually shows the stock status ratio under these different weighting values.

As I showed you before, I picked these different weighting values in order to allow the model to better reflect this MARMAP index. Because, remember in the last assessment it was this index that prompted this increase that prompted some of the changes in regulations. It is the only index that we have to look at. I tried to explore different weighting factors that would cause the model to better fit this index.

The other thing I did at the same time was I looked at what the implication was to the stock status for those different weights. You can see that again it doesn't qualitatively change the outcome of the assessment with these different weighting values. What you see here is you see a

slightly different trend between 2000 and about 2007 under these different weighting values. Then you either see a slightly increasing trend or a more dramatic decreasing trend as the model tries to fit the terminal part of that abundance index a little bit better. That is what that weighting does.

DR. BARBIERI: Well, that is reassuring in terms of the weight. Thinking about the range of natural mortality – and again we're trying to stick with what the benchmark decisions had been, but that range of natural mortality was so narrow that our expectations that steepness is going to be driving largely here our perception of the productivity of this stock. I would go back into perhaps exploring if at all possible a run where we consider a different initialization procedure there, something that we could do to look at that.

DR. SHERTZER: Just a thought that a simpler idea would be just to refit the spawner-recruit data external to the assessment without that presumed leverage point and see how much that affects steepness. I mean, there are still a lot of points at the lower end of the curve that I think are driving that estimate, but certainly an outlier at either end of the curve can have an undue influence. That is something we could do.

DR. BARBIERI: I agree and I think that would be even better. If you look at the pattern of residuals, the recruitment deviations, we have to ask – and if it is, we need to know for sure is it plausible that we had such a long time series of recruitment lower when we are reaching some levels of – you know, the stock has been showing some improvement, not most recently, but definitely over the last decade.

Either some critical biological processes have been interrupted, the issues that could happen and have been documented for some stocks where we pushed – you know, now we are having sort of like a lee effect kind of depensation, or I don't know, but it would be good to explore.

MR. CARMICHAEL: I guess I just wanted to ask a general question, sort of getting into maybe try this sensitivity type stuff for alternative runs, but I wonder if we shouldn't back out a little bit and think about how people feel about this update. Lew mentioned quite a few times about things that were done that maybe aren't necessarily consistent with a lot of the current expectations in the state of the art within SEDAR, but they match the original benchmark.

Let's not lose track that benchmark goes back to SEDAR 1, which is different from vermilion which actually had a benchmark done in SEDAR 17. There has been an awful lot of water under the bridge, an awful lot of changes in how we view a lot of these datasets, how we deal with uncertainties, how we treat natural mortality.

I wonder if maybe you shouldn't have the first discussion of how you feel about this; do you think that there are so many issues here that an update is not overly reliable and we need to look at something else. Then you can think, well, what can you take out of this for advice and what should we do next?

DR. SHERTZER: The age of the assessment was known before the update was asked for. The thing that is different now is the results.

MR. CARMICHAEL: I don't know if they are the results. I think a lot of the issues are there and they were issues the last time we did it. You start looking at where we are now and how we are doing a lot of things and were our hands tied in doing some things? Should we have done this as a standard maybe and changed some of these? I think that is how we should talk about it. We have been known to maybe not do things the way we should have done them in the past.

DR. BERKSON: From what I can tell from my review, it appears that the rules for following an update were very clearly followed. Working an update, doing an update is difficult; because there is a lot of gray area as when do you make changes. You obviously want to use the most recent data you can.

If there are obvious changes to assessment procedures that have been adopted in multiple SEDARs, I think it is okay to adopt those. How many SEDARs, what kinds of changes, there is a lot of gray area there. I think the assessment scientists working on this one did a good job. Now you can say there are a lot of additional runs we could make, sensitivities we could run that go beyond the status of a normal update and would be interesting and informative and likely should be done to better understand the parameter space and the results. But once again is that moving into the territory where it should be a benchmark rather than trying to pry apart to get more information out of an update that is giving us what we asked it to give us.

DR. REICHERT: Although I know that this may be a difficult question to answer, but given your current knowledge of the model, given your current knowledge of the data, do you expect a significantly different outcome if you would do a benchmark?

DR. SHERTZER: I think there are some changes we could make if we were to update to the current BAM. It is hard to predict if the results would be very different, but I don't think there is much different we would with the data. I don't see really a need for a benchmark assessment in that sense. Maybe a standard assessment where we had more flexibility to go with the current version of the BAM might be useful.

I suspect the results in this assessment are being driven more by the data than they are by the configuration of the model. I think the improvements we would make would be more incremental than monumental to the model. The stagnation in the rebuilding appears to be driven largely by the MARMAP index but also the MARMAP comp data, which agree with the index. That fact is not going to change if we were to redo the assessment.

DR. BUCKEL: Kyle, I'm just curious to the specific-age independent M. The current BAM uses the age-dependent M. Have you done comparison runs between that age-dependent and age-independent M? I would think that would have a large affect, but maybe not.

DR. SHERTZER: I haven't done it, Jeff.

MR. BUCKEL: I was just curious in general what the BAM model – since earlier assessments had age-independent Ms and now most are done with the age-dependent M, if you had a general feel for how the model behaved.

DR. SHERTZER: The age-dependent tends to saturate at a constant value. There is from what I've seen not typically a large qualitative difference in the assessment. The major difference is in

the scale of recruitment that is predicted where if you have a higher M on the younger ages then it predicts that the recruitment was higher so that they can be killed off to get down to the same level that you would see otherwise.

MR. CARMICHAEL: One data question I think that I have always wondered as we've progressed through this is the handling of the earliest years, because there was such a reporting issue with porgies and the unclassified porgies and they overlap with scup, and I wonder if we looked at that again in depth if we would end up in the same place as we were.

Sometimes those things change over time as you look at it. I don't know that we have any more insights, but we may have more ideas than what we had back then. We may perhaps explore that a bit more through sensitivities than we did back in those early days. I think it sort of gives you the question of whether recruitment is not what it should be or we are kind of overestimating what we expect to get out of it. Without having lots of young fish data, there is really no way for us to dig into that and really answer it.

DR. BARBIERI: Are there any additional questions or comments?

MR. CARMICHAEL: Jim made the comment that the update is what it was expected to be. It is well done and it follows the rules. Where do we go from here?

DR. BARBIERI: Well, the question for this committee is does this represent the best scientific advice to the council to proceed with management? I mean, that is the question that we are going to be asked. I hope that Lew and Kyle don't interpret this as any value on their analysis. I think you did a terrific job. As Jim pointed out, I think the update is well done, but I wonder if there are some issues here because of the limitations of the update are now limiting our ability to provide the council with the best advice in terms of management.

DR. CADRIN: Yes, Luiz, I have been wrestling with this and I think you have a valid question. I guess I have been proceeding along the lines of taking the results and trying to form catch recommendations. I guess a contrary question would be if we don't view this as best scientific information, what would we use? Maybe take it in steps.

I think one of the major conclusions of the assessment is that the stock cannot rebuild even at F equals zero. Is that conclusion robust to all of these re-estimates of steepness and all the other – starting year, all the other issues? If it is, should we proceed along a practical catch limit based on that overlying conclusion? I'm just asking the question; I don't know the answer.

DR. BARBIERI: But, Steve, to that point, and I think a very good point, is this issue; have we explored really all of the issues? I would take advice from the analysts, because analysts first and foremost – and I have put Kyle on the spot before like this, to ask his opinion about these issues, because the analyst has a good idea about the sense of confidence that you have in the outcome of your assessment as a way to represent stock status and provide management advice.

There is always a way to do it better, but there is a point when you feel, well, all things considered we could look at other one, two or three items is this issue; are the conclusions about this stock not being able to rebuild robust enough to all of this potential exploratory evaluations or not?

MR. COGGINS: Well, I can show you one other basically sensitivity run that I conducted; because as you can imagine I have thought about a lot of this, also. What I did was I showed you the sensitivity run with steepness set at 0.5. I also did projections with that. I went ahead and ran and let the thing run overnight and did the projections.

Here is what the projection is. This is a projection only through 2018 with F is equal to zero. Now with steepness fixed at 0.5, there is about a 68 or so percent probability of rebuilding in 2018 with F equals zero. Remember before it was considerably lower than that. What I also did was I said, okay, what would F have to be to provide exactly a 50 percent probability of rebuilding, and that came out to about 0.06.

It turns out that my review of the SEDAR 1 assessment estimated this rate of fishing mortality to be approximately what discard mortality would be under a moratorium. That would approximately – if you assume steepness at 0.5, that would approximately allow a 50 percent chance of rebuilding at the end of the rebuilding timeframe. The other thing I did was do the projection if we stuck with F at FMSY just so you could see that also.

DR. CADRIN: I think that bounds the question really well because I think that brings back the old estimate of steepness and what the previous perspective of the stock productivity and rebuilding was. I think we have enough here to maybe throw something against the wall if you are ready for that.

DR. BARBIERI: I sure am.

DR. CADRIN: Again, initially taking the face value of the conclusions – and I actually like the way the report was worded – is F equals zero is only theoretically possible in these multi-species fisheries. It is a real challenge for us because our ABC recommendations will be a limit. There will be accountability for going over them.

We've heard testimony this morning that red porgy are increasing. Usually we want to allow for incidental bycatch without punitive measures for going over them. Other SSCs have considered practical considerations of bycatch in other fisheries and the realities of accountability measures. I know in New England, when faced with this, we used a provision in National Standard 1 Guidelines where if a stock does not recover by the end of its rebuilding period, that the fishing mortality should be 75 percent of FMSY or F rebuild, whichever is lower.

I think given the uncertainty in the assessment, the sensitivity analyses we have, I think that might be a starting point for us. As a Yankee with no history and no memory of this management plan at all, I have been trying to go back through. Since the moratorium in SEDAR 1, there was Amendment 12.

Amendment 12 reduced fishing mortality to about 85 percent of FMSY, but it had about 25 percent discards. Amendment 13C and 15A – so this was after the update – they reduced discards but increased the catch and you had F near FMSY. Amendment 15B reduced fishing mortality again to less than FMSY with low discards.

It seems like the council was iterating through this practical situation of trying to recover this stock but also trying to allow other fisheries to happen. I think they have been refining toward it,

and the last iteration has come somewhat close. Seventy-five percent FMSY would require reduction in catch, reduction in fishing mortality, but not drastically so. I think that it would allow the council to keep iterating on trying to recover this stock while allowing other fisheries to happen. It seems to me a common sense and consistent with the guidelines as well, is that we could start with 75 percent FMSY as a discussion point.

DR. BARBIERI: That is a good suggestion as a discussion point. Does anybody have any additional comments?

MR. CARMICHAEL: Yes, I want to say we have had discussion at the council level and with the regional office and I think they have been in communication with headquarters. The way Steve lays it out in citing 75 percent of FMSY is consistent with what we were told. Important factors in this situation are that overfishing is not occurring.

Another is that it seems that for some reason rebuilding is not happening as fast as possible. It looks like somehow recruitment is implicated in that. Given those situations and circumstances, then the alternative of fishing at 75 percent of FMSY is open to us. That would be acceptable to discuss this point.

DR. BARBIERI: Another question, then; wouldn't we have to comply with NS-1, Steve; wouldn't we have to have either F at 75 percent of FMSY or F at F rebuild, whichever is lower?

DR. CADRIN: That's the part that really hooked me in what was just presented from SEDAR 1, where it looks like a bycatch or discard mortality is about what would recover, and it seems that is about where the council has been trying to get to is refining management to be at about a discard only or incidental catch only fishing mortality. That is why I think it is consistent is that we have arrived about there. You had 76 percent FMSY in the last year, about 300 tons. That would be pretty much status quo management.

DR. BARBIERI: It sounds like a viable way to avoid prolonging this –

DR. CADRIN: Perhaps as an interim measure until some of these issues can be resolved?

DR. BARBIERI: Yes, with the understanding that we keep things stable until we can have another thorough look, which as Kyle pointed out may not actually produce any different results, but will give us the peace of mind to have explored everything more freely and not have to be constrained by having to conduct the update. In that way our recommended ABC would be set at that yield. Red porgy is scheduled for 2015 as a benchmark.

MR. CARMICHAEL: Yes, Luiz, that is the question; it is penciled in 2014 as a benchmark. I think a strong endorsement of that would help solidify it if the SSC thinks that is the route we should take.

DR. BARBIERI: Well, I really think that this is a very high priority, personally. I would like to hear from others.

DR. BERKSON: Well, I know on our agenda we have got prioritization of stocks for SEDARs. I would like to cover that when we get to that issue. Also, there are so many stocks that haven't

gone through SEDAR at this point, I am concerned when a stock is requested to go through SEDAR when it is fairly predictable by the assessment scientists as to what the results are likely to be; that doesn't mean it shouldn't be on the list or it shouldn't be a high priority.

I just think it needs to be something to be taken into consideration. If we're getting a result and the result is unfavorable but it is consistent; does that mean the stock should take a higher priority over stocks that haven't gone through the process? I just wanted to bring that up. That is obviously not for me to decide. It may not be for us to decide, but I wanted to mention it.

DR. BARBIERI: I think that is a good point, Jim, but here my reading of this is that we have a fairly high level of uncertainty about our ability at this point, given the constraints of what an update assessment are, to provide clear scientific advice for the council. In setting that priority for red porgy to be a benchmark next year, we give ourselves then the ability to explore – you know, to start from scratch and explore all the issues that may be constraining our ability to come up with something that we feel confident about. In this case that would be the difference.

DR. SHERTZER: I was just going to comment that the results here are really quite similar to what we saw with other model structures even before SEDAR started with VPAs that Doug and Mike Prager were involved in and also other models that were run alongside the BAM. It is not just this single configuration that we are seeing these results in.

I also wanted to comment on the need for a benchmark. I fully understand why, when you see results like this, that the standards and the bar gets raised. In this case whether it's a benchmark or a standard might be the question, because in my mind we could incorporate a lot of the improvements in the modeling in a standard or the current definition of standards.

I would think the direction you go with this would depend more on whether there is a lot more that could be done with the data. Whether we really need to go back and start from ground zero with the data or not would be the main consideration I would think for whether it is a standard or a benchmark.

DR. BARBIERI: Yes, we give ourselves here the flexibility to either go with the standard or the benchmark. We are going to look more into what would be the main issues that we want to address and then make a formal request to the Steering Committee.

DR. VAUGHAN: I am really surprised at how consistent these results have been over the 20 years that I've been involved with red porgy. I did that first assessment back in '91. I did it in late '89 and '90 and got published in '91. I did another one in the mid-nineties that was never published, and then, of course, the one in the late nineties that I wrote up with Mike Prager.

We did a number of different modeling approaches in that paper, including production models. Then, of course, we had the SEDAR 1 and the update. They have been surprisingly consistent across every assessment that I was involved with, plus what we're seeing here and how little deviation there is with all the various sensitivity runs that Lewis made. I know I feel pretty confident that the results are certainly in the right ballpark.

DR. REICHERT: Relative to the standard or benchmark, one of the things that may come on line or will come on line is the new SEFIS Video Survey, which may provide another index of

abundance. If we do a standard, we may want to be a little flexible in terms of adding data streams there. The other one is looking at the changes in the life history over time and maybe see if we can incorporate that.

I'm not sure how much of a difference that is going to make. Then the other; recently we've been looking at trap saturation and how we can potentially do some corrections. There are a couple of developments that may help improve the data, so that may ultimately affect whether we would recommend a benchmark or standard.

DR. BARBIERI: Well, I think that we are all set now. We have our statement there, which proceeds into a catch level recommendation. Lew and Kyle, again thank you for coming over and doing the presentation. I hope you don't take our comments as negative towards the way the assessment update was conducted.

I think you guys really did a great job updating this assessment. I just think that there are some issues here that would be to everybody's benefit perhaps and for the council's peace of mind to have vetted a little more thoroughly. I think that is all we are trying to get to and I wanted to express.

DR. SHERTZER: Thanks, Luiz. I think the place you arrived is actually very consistent with the assessment. The fishing mortality rate has been reduced down below FMSY and it appears that rebuilding is stagnated due to recruitment, and that is out of the control of the council.

DR. BARBIERI: I guess we are moving on to our next item. Are we ready for the wreckfish? Do you need a break? Let's reconvene in about five minutes.

DR. BARBIERI: All right, folks, again apologies for the short break, but we have still a couple of beefy discussions here to go through, and we want to make sure that we have time for those. Our next agenda item then is to proceed with the wreckfish analysis. We have Dr. Doug Butterworth here that submitted a statistical catch-at-age assessment to the U.S. South Atlantic Wreckfish. He is going to give us a discussion of that analysis and request the committee for some comments and recommendations going forward. Dr. Butterworth.

DR. BUTTERWORTH: First of all, let's make clear where I came in on this. I was presented with the analysis that last year's decision was based on and asked for comments. I guess my immediate thought was that you have a different standard for what you call data-rich and data-poor fisheries.

What I'm being told is data poor here in many other places of the world would be called data rich. That is in a lighter vein, but more seriously what concerned me about what had been presented was I thought an unnecessarily simplified model was being used, which had limited capabilities in providing output and was ignoring some of the data which were available.

That is where I am coming from. In terms of the paper, the paper was written as a – what shall I say – first overview and not from the point of view of necessarily giving final and specific advice. But as always with these exercises, when you come in as the new boy, don't try to do everything all at once, because what you are going to find is when you have discussion you needn't have done half of it, because people will say couldn't you do it another way.

There is that element in it. Having said that, though, nevertheless I think in qualitative term that the results are already saying something; so from that point of view, this is not just an academic exercise. It is I think giving some at the very least qualitative advice, and I think we'll have to see where we go when I get to the end of what is the way forward given what can be down now, what might be picked up later; your own schedules of having to give decisions.

With that analysis or that overview, I had no idea how this presentation star was going to be. I thought it was going to be half a dozen people around a small table where one is working off written documents, so I apologize that you haven't got the documents in eyesight. At a strain, I certainly wouldn't be able to manage it, but I think that I can put you at – maybe I can work the controls to emphasize what is larger here.

For those of you who might get bored by technical details, there is an obvious slip in the summary, which was put there to make sure that people had read it and were paying attention. Anyone who is unable to tell what the obvious slip in the summary is, is not allowed to comment further, Mr. Chairman, on the paper.

What I would like to do first is just go to the data that has been used here so we are clear. There are basically three sets of data – okay, three sources of data. First of all annual landings; just one thing to say here; there is a period over which the annual landings are not exactly known per year.

That is for the eight-year period 2001 to 2008. All we've done, because by subtraction we can work out the total amount; we've just allocated equally to each year, but it is not going to make any practical difference from the point of view of the analyses here. The analysis will be insensitive to any variation on that.

The second thing we've used – and this was information that was provided to us – is the CPUE data, the series which was used in a qualitative sense for last year's analysis and we've used more quantitatively to put it into an assessment, essentially. The third point of information we've used, which wasn't used last year was – and we've just taken it in the way we requested the information that was shown in graphical form in the paper, and this is what we were given. We can use it as it stands.

It is by length and inches there and aggravated over three years, the frequency distribution of the catch. Those are the three pieces of information we were given. Now on to the methodology, I suppose in this audience hearing mention of BAM all the time – and I'm going to say statistical catch at age – let me just say that in broad terms we're talking about exactly the same language.

The difference is in detail, and I'm going to be a little bit brief here, because it is late in the day, Mr. Chairman, and I think it is better than me dragging you through details. I'll be very brief at this stage; and rather if there are questions, let's come back to that. Let's rather get to the guts of the results rather than concentrate on details. There is only one or perhaps two things I'll make mention of here, and it goes down to this section, which now can I find you. If you've got written copies or you're looking at it on your own laptops, go to Page 11.

Let me just try to describe rather in words what has been done here. The model is an age-structured model as I believe is the BAM model, if I remember it correctly, but the information

you've got here is length and not age. That doesn't stop you fitting the model. Basically all you have to do is two things.

First have yourself a Von-Bertalanffy equation if you are not going to fit it within the model itself, which you can do as well, but I wouldn't think with the amount of information here, but we did have Von-Bertalanffy equation given under the assumption that the distribution of length at age is invariant over year.

That is not an unreasonable assumption to make in what is a first cut at this. And in fact not only is it a first cut, what most people do it is usually the last cut when they do this as well in fitting to length distribution data. What you can do within the model is given an age distribution within the model you can convert it into a length distribution and compare that with what the observations are.

That is essentially the way the model is working. It is just going through and it estimates the extent of variability at length at age from the data. It is just rather than fitting to catch-at-age data, which you are perhaps more used to, this is fitting to catch at length, but the principle is the same. You just need the Von-Bertalanffy equation and the variability about the equation.

Again, I can come down to the technical details later if some want to go into it. The other thing that is different from – and let me take you down to the likelihoods here, when I can find them, just the bottom of Page 13, Equation B21 – I must admit not to being a fan of the multinomial distribution for fitting, whether it is length distributions or age distribution, because the multinomial distribution assumes that all of the variability is coming from sampling.

Even if it is over dispersed and you try to correct for it and Francis gets terribly tied up in trying for it even further, and still has to do all sorts of horrible ad hoc things to stop the thing going wrong. Go to the basics; now why don't you just use a lognormal distribution, because this is almost a lognormal distribution?

Well, the reason is when you are dealing with proportions, a lognormal distribution assumes constant CV in the distributions. You wouldn't expect that with a distribution whether it is by length or by age simply because you are going to suffer from the small sample at either end of the distribution, whether you have low selectivity at small age or length and low numbers at large length.

It is just adjusted for that in a particular way, and I'll come to the results to try to justify exactly what is done here. It is adjusted for that to try to get the residuals of constant variance. It doesn't work too badly. The one particular advantage of this in my view is you don't have to go through this horrible process of the multinomial of treating the effective sample size outside the model, and fit the model, get the effective sample size, iterate, and get it again; except Francis says you are only allowed to do it once, et cetera.

It is not a very satisfactory approach in my view, and this essentially is a one-stop-shop approach. It gives you the variance at the same time it is giving you all the parameters in the same way you would get with the indices. I haven't gone into the indices. Here the CPUE, it is basically standard approach in dealing with that. I think with that, perhaps, Mr. Chairman, I'll pause briefly, because if there are some details or questions about the assessment method I'll

take them. But perhaps I'll say maybe if I get the question, because I think the issue here, given time, is to get on to the results and take it on from there. I wouldn't want to bog down in too much detail unless it is really pressing. Perhaps let me stop and see if there are questions at this stage.

DR. BARBIERI: Would there be any burning questions here for Dr. Butterworth regarding the methodological treatment of the data and the modeling approach that is being used? Jim.

DR. BERKSON: I just want to mention I think there are a lot of questions for clarification. I don't know that we have enough information to ask all of the questions that we would want to ask at this point. I just reserve the right to be able to ask additional questions in the future.

DR. BUTTERWORTH: Sure, I think that is fine. I understand that and let's just play that by ear as we go on it. The questions are a function of where you are going to go so there is an iteration there. I think those points are better taken later. I'd like to sort of jump to the essence of this right away in this figure, which is on Page – whatever it is of the document – it is really the key Figure 1 on Page 5.

What this is doing – and I'll show you more details later – it is capturing what in fact is a conflict in the data here, within the structure of this particular model. I'll come back to it. It is actually very difficult to resolve that conflict even if you go further. But let me say, first of all, that you can characterize, as we've been hearing in the previous models, a stock-recruit relationship which is used here graded to key parameters, natural mortality and steepness.

Natural mortality, what we've done here, you can see from the top to the bottom, is just run through the four values that were used in last year's report, and we just followed the same format to keep the similarity. The other parameter that has gone into here is steepness. If you come from New Zealand, you are fortunate.

God told you that steepness was 0.75, so you don't need to go any further and we could have saved the previous presenters a lot of trouble. But basically it is not quite that reason these results you are seeing of 0.75. Mr. Chairman, I'll take your point that 0.5 is a bit at the low level. If you go to the table, and we can look at that later to the extent we need to, we've given results for 0.6, 0.75, and 0.9.

Yes, the results do differ depending on what you give for steepness, but basically natural mortality is far more influential on the results, unsurprisingly. Just in this plot we've shown the fits aggregated. Well, first of all with steepness of 0.75; and then as far as the fit to catch at length distribution is concerned, I'll show you some more details in a moment.

But just to get the overview here, on the right-hand side, what is shown in black is the distribution in the data but aggregated over all the years. Remember we are fitting – well, of course, the data aggregated by three years, anyway, but we are fitting to the data over all those periods. In showing the fit over all, it is useful just to combine all the proportions together just to see whether there are systematic deviations or not, which quite clearly there are. You see as you go through this schedule here what is going on as you change natural mortality.

If you start at low natural mortality, you don't get a bad fit to the CPUE data, but you get a horrible fit to the catch-at-length data. Basically you can see the open bars are the model-predicted ones – the black bars are the actual observations – and far fewer fish than are observed. Now I stress again here we are dealing with flattop selectivities here. I'll come back to that point later.

But again this was starting simple. The question is how much more complicated do we want to go? As you carry on with that increasing M, you get an improvement, and I'll talk qualitatively here. I can show you the likelihood terms later if you really want to, but the message is clear from I think this picture.

As you go to M equals 0.5, you get a pretty good fit to the CPUE data and you get a better fit to the catch-at-length data. Not unexpectedly, if you are happy with the model, per se, you would probably be happier with M equals 0.5 than you would be with 0.025, but you are still not entirely happy, because there is still a systematic effect in the catch at length over here.

What happens if you make M bigger still? Well, what you gain on the roundabouts, which is over here in the improved fit to the catch at length, you start losing on the swings over here. Really by the time you get up to M equals 0.1, the swings have lost altogether. Essentially you get no signal here, the best fit it can give you, because over on the right-hand side you are now getting a good fit to the catch at length, but on the left-hand side with the CPUE it is saying – unsurprisingly when you look at this, the biomass went off infinite because you needed no impact to the catch on the stock to be able to give you your best fit to the catch at length.

Now what do you make of this? Basically what we said – and this remember is just the first cut at a qualitative level – cross off Number 1 and cross off Number 4, and just look at the two in the middle from a point of view of getting a picture of this. I just want, before I go on, to sort of summarize in the conclusion and show you a little bit more in the next picture, except now I can't see my box.

This is just taking the M equals 0.05 diagnostics in a little more detail. As you can see, this you've seen already, this spawning – no, you haven't. This is a spawning biomass trajectory, which is different from the catch rate trajectory simply because effectively the selectivities are different, but qualitatively they are the same.

The stock-recruit relationship with H equals 0.75, effectively not going that far down into the descending limb on the stock-recruit relationship, because that is actually the plot of recruitment. That you've seen already, the fit to the catch at length aggregated over months. But more importantly, here that fit that is aggregated by the six groups of three years in which the data were provided, and you can see they are all systematic patterns across there that do need to be improved.

But just from the point of view of technical point about the distributions, the sizes of these bubbles here, which show these are standardized residuals, that being divided by the standard deviation, which is implied by the form of model used; and broadly speaking the size of the bubbles are similar. From that point of view, what we're doing in reweighting or really changing variance across the length distribution here is, roughly speaking, working.

We are getting bubbles of the same size rather than bubbles that are bigger at the larger ages or the larger lengths and the smaller lengths. What has been fitted in the model is the selectivity at length, just a RAM function and the points of the RAM PR are estimated. We did take it flat-topped. That actually translates into an effective selectivity at age looking like that.

It also gives us a production curve – sorry, the axis got lost there, but that is biomass in I forget what the units are, but it is in terms of biomass, and a peak in the sustainable yield curve at a fairly low fraction of P exploitation biomass. As far as the catches at length distributions – sorry, not catches at length, the length distributions at age are concerned, this is the sequence that are used in actually translating from what is an age structure in the model into implications in these two plots to fit to the catch at length distribution here.

You might be interested, if you've looked at this closely – let me see, this was again a homework question. Did you notice this? Age naught has a rather large – that is interesting, the animal is born at age naught, has a distribution running from 10 to 20 – no, it is inches here. You may feel is this a whole lot of nonsense?

Well, that is what your Von-Bertalanffy curve says, too, but you don't have to worry too much about it, because remember what is happening at the selectivity here. You are only taking selectivity at length distribution from 20. In terms of the age, you are only actually taking it from age five. Though we've shown for completeness sake what these things are, they are not actually being used in the model fit. The model fit is actually using the Von-Bertalanffy curve from the point where it becomes relevant to the data, which is hard to fit it, anyway.

That is enough by way of diagnostics. I could show you the 0.75 case as well, but I don't think that is important particularly. I would just like to get to the nub of this before we go any further. I am not going to take you into the details of the tables. We can do that later if you want to. But going into the discussion, let's see if I can blow this up a little bit so that it is a bit better for you.

Essentially we came from the point – and this is a relatively qualitative point that if you looked at the results in last year's DC-C paper, the estimates of what was a catch ran from 175 to 449,000 pounds as a sustainable catch. What we've got here – and remember I won't take you into the tables, but essentially through ARC here we're saying this resource is not overexploited. All the estimates of biomass are above BMSY, but we've used MSY as an estimate of the potential sustainable yield.

If again we stick to the same central region that we would suggest is plausible here, because lower Ms just didn't fit the length data, higher Ms just don't fit the CPUE data; I am not arguing it has to be between 0.5 and 0.75. This is purely qualitative and we can go into more details later, perhaps.

But the key point here is when last year you were running at 175 to 449, over this range and it has restricted the M range and it is across this range of steepness's, 278 to 1,293. Even though I am certainly saying this is not the final product, and I'm looking for feedback, and I have another presentation. I'm not sure, Mr. Chairman, when you want to take it.

It relates in part to some of the points Alec will make in a moment. We may want to wait and come back to it after Alec's talk. But whereas on the one hand I would say, please, this was

never intended as an analysis that took anything to its final endpoint. We haven't shown you confidence intervals, for example. If you want them, we'll get them for you tomorrow. We can quite easily do that from the Hessian, but it was just a question of not inflating this document with a whole lot of information that would have taken us a long time to present, taken you more time to assimilate, and I think detracts at the moment from the qualitative message and not the quantitative message.

But the qualitative message out of this was last year you were looking at, shall we say, in round figures, 200 to 450,000 pounds. This is saying something more like closer to 300 to 1,300 thousand pounds. It is bigger. I am not arguing where yet in that range. I think that is for further debate, but it was saying the answer looks like something bigger than you got last year. I think I'd like to leave it at that at this stage and take questions.

Bearing in mind, I think it is going to be useful to discuss this further after Alec has given his presentation. If there is time, we've got a couple of things building on that as well. There is also the possibility that you may want further runs done overnight. That we can consider as well, depending on how you want to run this meeting, Mr. Chairman. But I think this is as much as we need to stay at this stage about this paper and I can take questions.

DR. BARBIERI: Thank you, Dr. Butterworth. The floor is open for questions. Jim.

DR. BERKSON: I've been talking about this all day. First of all, I would like to thank Dr. Butterworth for the presentation and the paper and the analysis. I think the additional work is helpful. I want to stress that the SSC acts as a review panel. Our job is to review data, methodology, results and inferences drawn from the results.

Normally for assessments we have decided the way we do that is we get involved in every step along the way. The SEDAR process, which is the one accepted in the southeast, involves a data workshop, assessment either workshops or webinars, and then peer review panels. We've asked that the SSC be involved at every step so that we have oversight, and so that we know what decisions are made along the path, because we know there are an awful lot of decision points, subjective decision points in any assessment.

The assessment scientists, working with the knowledgeable people on the stock, have to make the best decision possible and justify it. That doesn't always come across in a long document, much less a short document. Hence, the reason we have the SSC people present. With the information presented, if we compare both the report presented and the presentation today to what we normally receive even with the most straightforward update, this is an extremely small percentage of information presented to us after the fact compared to what we normally see often during the process or at least weeks before in far more detail.

I don't know of any precedent where the SSC has asked for additional runs to be done overnight for presentation at the meeting the next day. We have a two-week rule for most of our materials that we like to receive in two weeks in advance so we can thoroughly review them. This is a concern not only with this assessment but with assessments in general and materials in general. As most of the SSC members here know, I was Chair when we created the two-week rule, because we were constantly being given materials 12 hours before our meetings and 18 hours before our meetings that we couldn't possibly assimilate or get to.

Anyway, I am very interested in learning more about what you have done, being able to talk about the plusses and minuses of what you've done, and being able to give additional advice and suggestions. I don't know if we're at that stage now with the information we have in front of us. I certainly don't think we are at a point now where we can compare your approach to any other approach given the limited information we have in front of us.

I think it is just important to point out the level of information that is customary to provide to the SSC when presenting an assessment. I understand that this was a start; this was an overview as you started out in your papers by saying and you started out in your presentation, but there are limits with what we can do with an overview. Thank you.

DR. BUTTERWORTH: Yes, if I can just respond from a sort of overall perspective point of view. I realize there are different rules in different places. I'd just like to put this in a different context. I work mainly in international commissions. There are no problems at all and that is why I made that suggestion.

What I suggested – and this is the only forum I have; I don't know how you work – it would be bulk standard to iterate during the course of a meeting; you only have a couple of days to do the whole thing. That is the way it works. As far as the details here in the data, what we took was just what was available to us, which was what was presented in the document last year.

We've presented results here. I'll be interested in how much more you would want to see in terms of diagnostics here, because often – perhaps this is just a personal preference in a way. I think some – and forgive me here, I can't resist the sort of backhander because I'm fighting with it in another international forum with this.

Sometimes the 300-page documents that are presented for you as assessments are ghastly because you can't find the wood for the trees. Essentially what I tried to do here is cut it down to what really matters. Remember also that what has been dealt with here, a couple of points about it, is Number 1, it is an SCAA with purely a stock-recruit relationship, a deterministic stock-recruit relationship.

Because the data aren't there anyway, you are not getting into the detail of looking at residuals, which sort of adds an order of magnitude to the diagnostics you want to look at. This is looking at purely the deterministic part. I think the other point to make out is what we've done here, this isn't anything new.

What we are showing you here is pretty standard for what will be the assessments of long-lived species in the southern hemisphere, both in Carmela with species like toothfish and with the orange roughy in Australasia and Southern Africa and so forth. I would be interested to hear what else you would want to see.

But at the level of an assessment like this, I'm not sure there is that much more of major significance to the results that you would want to see. I'm saying here within the structure of what is done here. We'll come on in a moment, and Alec has raised the point to some further features one could add. I think it is easier to comment on that rather than the abstract. In the particular regard to certain of the extra things we've looked at, particularly arising out of what Alec did, let me leave it at that for the moment.

DR. BARBIERI: Are there any other questions or comments for Dr. Butterworth? I have a few, but I want to give the committee the ability – well, some of the questions – I see your presentation here. It is really putting in front of us an alternative approach – can we mine this data? Do we have more data there than we have been utilizing and our ability to use this data to expand our ability to make decisions going forward.

But I would like to ask you and perhaps bring up for the committee as a discussion point is wouldn't be this analysis perhaps in your opinion overstretching the informational content of this data simply because you are using a catch-at-age approach. We don't really have even insufficient – I mean, it is really nonexistent age composition of the catch at this point.

We don't have any idea then of the consequences of this convergence. When I look at your page of diagnostics, like Figure 2; I look at the distributions – that one right there – the distributions of length at age, would there be enough information content in those length bins for us to make that conversion to ages that would be meaningful in reflecting the dynamics of the stock?

DR. BUTTERWORTH: I think two points. Let me take you back into 1990, Pitcher and Hart. They had a comment in that paper about the Deriso model. This was in those days – and remember what computers were like 22 years ago. You couldn't do the sort of things you did now. The Deriso model came along and it really integrated at a simple level, making some simple assumptions gave you something like a Schaeffer model, a big more complicated, which took age structure into account. It was held as a great conversion.

It was Ray Hilborn who really made the point a couple of years later to me. We've taken it to heart and it is the reason why we basically use this deterministic age-structured production model, as I prefer to call it rather than ACAA, on all our stocks, and only work up from that as we need to. The point Ray made at that stage – and it was in the nineties as computers were getting sufficient power, so you didn't need things that could only be done on an HP35 or whatever it was.

Ray made the point, look, why do you use these simple models, you don't need them. The resource is age structured. That we all know, and no one is pretending it isn't. Use an age structured model; use it in its simplest form; at least you are respecting what is really going on with the dynamics.

All you are doing when you use the model in that form is you take the Schaeffer model RNK and you place it effectively by three parameters. Usually natural mortality you fix and the other two parameters are just the analog of RNK. You can turn them into an effective RNK if you would like, or just whatever it is alpha and beta of Beverton-Holt and so forth.

I guess that is my first point here of why go to an age-structured model? Because resources are age structured and if you are representing the age structure of the resource, you are not hiding what may be some delays in the dynamics. Rather work with the reality. One of the problems with bulk biomass models for a start is, yes. they may work well in some cases; but in any case if you want to check they do work, you have to simulation test them on age-structured models anyway; so if you can use an age-structured model, why not? Why go backwards? I am not saying that is in every case.

The other thing is even when you get a biomass out of a production model; it is not the true biomass. At least when you are working with an age-structured model, you can argue it corresponds to real biomass. With some methods of assessment, we are used to have hydro-acoustic surveys, which can give you absolutes and so forth. This is just a general principle; not necessarily so when you've got CPUE. Well, what the catchability coefficient is another story.

But I guess that is the one thing. The second point is out of length structure information do you have any information? The first point is you have a hell of a lot less than if you've got age-structured information. That is really the essence of your point. You don't have as much. If you can get age-structure information, it is much more powerful, and you will see it impacting the results much more in consequence.

What this is doing – and we can pick up on some – again I'll avoid getting into too much detail here and see if people want to ask me the question. I'm not trying to avoid getting into it. I'm just conscious of your time constraints. Basically what this approach is saying is, look, let the data speak for themselves.

The data will use this – the model-fitting procedure will use the information content in these data as well as it can. There is not a great deal of information in here, but nevertheless there is enough to say that it doesn't like some of the values of M. Now maybe that is because you didn't put a dome in the selectivity, and I'll come back to that one later so I'll keep you thinking. That is basically it.

Also, the interesting thing here is this conflict that you see here between CPUE and catch at length is not a new one. I've seen it in a number of places. You see it in New Zealand orange roughy; you see it in Patagonian toothfish. It is a point of concern. For instance, should you base all your management advice just on looking at catch and CPUE, if you come up and say but it isn't consistent with the catch at length data? The reality is somehow that CPUE happens, and somehow that length distribution happened out of a real resource.

If you neglect one of the pieces of information you have about that real resource, because your model doesn't fit – basically I am a great advocate of saying if you have got two pieces of data and one model and they don't fit together, the one thing you shouldn't do is what I've done here, is fit the three together. I mean, we fitted the three together to say here, look, watch it, there is a conflict here and they can't all be right. One of three things is true of what you are seeing here.

Either one piece of data is wrong, the catch at length, or the other piece of data is wrong, the CPUE – I wouldn't come to the catch – or the model is wrong. Well, take your pick, but I mean reality happened and reality produced that information. It is our job to try to come up with the best model that captures all of that reality and not just part of it. Did I catch most of your points there?

DR. BARBIERI: Yes you did, thank you. I would enjoy continuing this discussion a little further, but in the interest of time and potentially having you back to make some additional points, unless the committee has some additional questions or comments, I think we can proceed to get Dr. MacCall here to give his presentation and discussion. Thank you, Dr. Butterworth.

DR. MacCALL: About three years ago a colleague of mine on the east coast mentioned wreckfish as an interesting study in data-poor fishery analysis. I didn't know anything about it. I had heard of it, an interesting name, but other than that I knew nothing. Since I was a Fed, that meant I could get the data.

I figured I better work on it before I retire because then I can't anymore. That is how this happened. This was long before I knew anything that Doug was working on or anything. This work was done over a period of the last two years or so. None of this is intended to be a criticism of Doug's work. It honestly was done before I knew of it.

Immediately I saw a couple of the major problems with his data situation. I have to give credit to Doug Vaughan, the author of assessments from hell. Doug did both red porgy and wreckfish, congratulations. Anyway, one of the things that was immediately a problem was – and I initially was looking at the length comps and I couldn't see any indication there was a response to fishing pressure.

I'm assuming that apparently there is some sort of dome-shaped selectivity, and the consequences that I don't think there is much information content there. Any information you can derive is highly dependent on your model structure. I chickened out and said I'm not using it, to make a long story short. The other interesting situation is that the resource is not local.

Again, I only know what I've read about wreckfish. We have some real experts in the room. From what I understand, there is a sort of a meta-population inhabiting the North Atlantic here, so that the recruitment to the Blake Plateau is mainly not derived from fish on the Blake Plateau. I used that to simplify my model quite a bit, as you will see.

In terms of Beverton-Holt stock-recruitment, that is a steepness of one. The motivation now is, is the ACL reasonable? It is certainly a lot smaller than the old total allowable catch. What I have here is the actual catches, but I've made this line so thick you can't really know what they were. Doug had a different solution, but it's the same problem.

But the new ACL is certainly a heck of a lot smaller than the old TAC. While it is close to the status quo over the last decade or more, superficially it really does look quite small compared to that time series of catches. Let's try to figure out what is going on. The DC-AC suggested that the early catches were mostly mining of a very large accumulated biomass.

There is a huge amount of fish that can be caught one time, bringing it down from unfished to some level such as 35, 40 percent of that that you can't ever catch again, so you have to be careful and separate that from what you think is a sustainable yield. The question is how much of each of those do we have here?

The M is pretty low for this species, and so we have to figure there is a pretty large storage. I'm going to try to make a little more detailed model than DC-AC here. Because recruitment is not self-generated, it comes from an independent distant source, let's assume the recruitment is constant just for a starting place here. I'll look for a trend later on here.

By it being constant, that makes our model really simple. The model is not much more here. The biomass in the next year is this year's biomass minus the catch plus the recruitment, which is

constant and that whole thing times a natural survival, and I'll get to this natural survival in a moment. Then, of course, catch per effort is just some catchability coefficient times a biomass. This biomass is sort of an exploitable biomass with an implicit selectivity curve.

We don't know what it is. We are just assuming it is pretty consistent over time. Somewhere I come back to it here. This natural survival in this case is a net survival in biomass, which is a little different thing than the survival in numbers. We are accustomed to thinking of M as a natural mortality rate in numbers. The Hoenig estimate – I knew I'd come back to it – the Hoenig estimate comes out to be about 0.06 for M in numbers.

But in biomass the fish are growing and offsetting some of that mortality rate. The biomass M is going to be smaller than the numerical M. We'll get back there. The maximum likelihood solution, just getting the best fit of this model to the data – and I digitized the data from a figure I think Andy Strelcheck prepared awhile back. The model fits pretty nicely, I have to say.

Come up with a very small M, a 0.23, which is estimated, incidentally. It is just estimated at that. That is this M minus G, where G is the growth. We have roughly an M of 0.06; we have a G of 0.05. Just looking at how fast they are growing at the peak size in the fishery, which comes out about 0.01, which is too small.; but then we also have it in some amount of emigration possibly over to the other side of the Atlantic or whatever. We will come back to this.

The recruitment is approximately 190 tons. This is the MSY, which I should put in quotes. It is the maximum you can take as long as that recruitment keeps arriving. But eventually if we took too much here, it will result in depletion downstream, and after some period of time probably our recruitment would decline as that whole cycle winds down. The unfished biomass is about 8,000 tons. Currently we are at about 40 percent of that.

The catch at 40 percent under this model is virtually the same as the ACL that was set by the SSC a while back for the simple reason that the logic is almost identical. It is not magical; it is almost identical in terms of how it is derived. But we have more mechanisms here now. It is an important thing to notice that if we can believe the CPUE under the fairly low harvest of the last 10, 15 years, abundance did not increase very much.

That is this slope here and that tells us a lot about what is sustainable. It doesn't tell us so much about what is maximally sustainable, but it does say that this is sustainable. Some implications, first of all, why not allow higher catches? The ACL I believe was about 109 tons. This model has an MSY of 190 tons.

But if we were to take that MSY of 190 tons, we would reduce abundance all the way to zero, depending entirely on incoming recruitment, harvesting what comes in. There would be probably some but very little spawning that would seed downstream populations that eventually become our upstream sources of recruitment.

I don't disagree with Doug's estimate under his M of 0.05; this is almost identical to Doug's result. It is under the same assumptions of value in the model. It is very, very similar. As a way to approach management, I think the best thing is to manage each segment of the Atlantic meta-population independently to their own optimal biomass. In other words, it is sort of a golden rule; we'll do what we wish they would do.

If everybody does that, it solves the problem of not knowing what the structure of the stock is. There really isn't much else you can do. It preserves all of the individual complements that are required to have this thing be self sustaining in the long run. A Bayesian version of this model, which is where it got fun, does almost the same thing except we can ask what is the range of parameter values that are consistent with the data. I wrote this model in Open Bugs, which is a Bayesian thing, freeware on the computer. I put an informative prior on M, but pretty loose.

I have an uninformative prior on recruitment. I recognized that the CPUEs are the average of three values, so I put a student T distribution on that, trying to recognize its fundamental property there, being pretty loose. I considered the need for possible added variance on the CPUE. It turns out it didn't need it. I'll test for a trend in recruitment.

Priors, the max age of South Atlantic wreckfish is 76 years old. Assuming that North Atlantic is similar, Hoenig's M would be about 0.06. I arbitrarily cut that in half for mean M minus G, but with a very liberal sigma log M minus G of 0.5. That means that we are spreading this thing from 0.01 up to 0.06. It is pretty widespread.

It turns out that has very little influence on the model. The recruitment is uniform from 50 to 500 tons. Just to check that that is reasonable, interestingly when you have these two priors like this they combine to give you an implicit prior on depletion. Essentially it has this really funny shape here, but the important thing is that all my results are in this range here.

The funniness doesn't matter; it is actually a fairly uniform distribution over the important range of results. Here is a sample of the results. You can see that the depletion – incidentally, I am using depletion backwards. It is a bad habit from the west coast. This is current relative biomass relative to B-zero. This is an output of the model, and you can see that all of these relative biomasses are from about 0.3 to 0.5 here – that is the body of this – and 0.3 to 0.5 is all in this flat range here. That means that this funniness here isn't having any influence.

That is the entire model, just for the fun of it. It's not too often you write a whole model on one page, fishery model. I'm proud of it, actually. That includes the comments. Anyway, results, the chain required thinning to 1 in 5,000, which is really, really typical of all of these models, whether they are age structured or not. They are really stiff models and MCMC has a hard time sampling them.

Anyway, so this right-hand figure is the auto-correlation by the time I've done the thinning, which I think is okay. The additional variance is unnecessary. I left it in, but you can see it only wants to add something smaller than 0.01 to the variance, which is negligible, but this way we know it doesn't need it. The parameters are really well estimated.

I'd say much better than most fishery models. The posteriors indicate strong information. The mortality rate term dropped from the prior 0.03 to 0.023 here. But the standard deviation, this is what is really interesting, dropped from 0.5 to 0.23. That is a huge amount of information saying that the model really thinks it has a pretty good idea of what mortality rate is. And 0.5 is very loose; 0.23 is better than we ever see almost.

The recruitment was uniform, 50 to 500. It comes out sort of a normal looking at about 183.5; standard deviation of about 46. It is really a two-parameter model. Both parameters are

estimable and actually quite precisely estimated. The current biomass appears to be about 37 percent of unfished. In 20 years – I just ran the model forward under the ACL assuming it will all be taken every year – it rises very slightly to 0.38. Essentially it says this ACL is exactly status quo sustainable right now.

But with this fairly substantial error here of 0.11; I'm not saying it is precise. The other thing is the time trend, the posterior came out exactly the same as the prior, indicating there is no information in that CPUE series indicating whether or not there is a time trend. It is not detectable, is all.

But I think we could use this kind of modeling to do some what-if scenarios to say if there were a time trend what would things look like in 10 or 20 years and have a good idea of what should be anticipated as a diagnostic. The MSY is about 180 tons, but it would reduce the mature biomass to nearly zero, because it would take all of the recruitment.

It is not self-generating; that is the trick. It is like we have a hatchery somewhere else just dumping fish in the ocean. But the result would be a downstream recruitment decline, if not failure, and eventually it would wrap back around and reduce ours eventually. I don't know how long that would take, probably decades.

As a unilateral management approach, if each segment is managed for its own local optimum level of depletion, which we might aim for a 40 percent of unfished biomass, but that is a standard target worldwide, but the council could choose something else, 35 percent. Whatever the council feels is the right management target, it is a management decision.

If you go for a lower level of this what I call depletion here, you can take a little more fish. It is a tradeoff. But the important thing is continue monitoring that CPUE to detect if abundance increases or decreases relative to the model expectations. You can quantify the degree of divergence from what this model would predict. You will probably revisit the ACL about once a decade or so. That would be my suggestion. That's it. I'm refraining from commenting on Doug's results or his model at all. If he wants a debate, we can have one.

DR. BARBIERI: Let's see if we have time for that in a little bit. Questions or comments? George?

DR. SEDBERRY: Yes, could you go back to that first slide that shows the North Atlantic Gyre. I know where you got it.

DR. MacCALL: Seafood Watch Report.

DR. SEDBERRY: Actually I made that up.

DR. MacCALL: Congratulations, it's a wonderful picture.

DR. SEDBERRY: I think I did it in Harvard Graphics; it's that old, but it comes from the Defense Mapping Agency, and it just shows circulation in the North Atlantic, what a water mass would take to make that trek. Wreckfish, which live at the surface until they are 60 centimeters

long, could certainly do that. They spawn on the Blake Plateau, so that makes the Blake Plateau self-recruiting.

DR. MacCALL: Okay, I'll accept that. Then maybe a steepness of 0.9 is quite reasonable, or whatever; I don't know. It is my ignorance; it was just so convenient to make it constant.

DR. SEDBERRY: The other thing is that we find wreckfish on the grounds here with European fishhooks in their mouths and guts. It is possible some adult migration is taking place, too.

DR. MacCALL: Yes, I think there may be emigration mixed in my M minus G. It is a mix of things going on that are very difficult to measure.

DR. SEDBERRY: I don't think spawning has ever been documented in the Eastern Atlantic at least in the literature, but we have seen large adult wreckfish over there as well in approaching spawning conditions. Spawning is probably occurring along the Mid-Atlantic Ridge, and we know it is occurring on the Blake Plateau and there is probably exchange both ways. I'm not sure about that, though.

DR. MacCALL: I think it would be probably more satisfying to build a model that contains the full Atlantic. This was a rather myopic version.

DR. BERKSON: Yes, I'd just like to restate the same things I said to Dr. Butterworth to Dr. MacCall in terms of this being a good step and interesting, and I'd like to see more information about it and ask more questions about it, but there has been a lack of SSC oversight throughout and the information we've been presented has been relatively minimal. I've got the same concerns.

DR. MacCALL: Okay, one word for my sponsor; I want to thank Bonnie Ponwith for paying for my trip here.

DR. CADRIN: I share Jim's concern. We would always like more time, we'd like more documentation. For those of us who like digging into this stuff, we feel better walking out of the room. But going back to last fall, we had a fairly thin document I believe from the Regional Office on the DC-AC, and we made some decisions with it.

I think the two documents we have are actually much more detailed and exploratory and explore new approaches than we had there. I agree ideally we'd have more time and more detail; but if this is an improvement in the scientific basis for our catch limit, I think we're compelled to consider it.

DR. BARBIERI: Any additional comments or questions for Alec? I have a question for George. George, did you say that our South Atlantic stock of wreckfish is actually self-recruiting?

DR. SEDBERRY: I think it is possible that it is. The DNA evidence, which is pretty strong – it is from mitochondrial DNA and from microsatellite DNA – indicates a single stock in the North Atlantic, which is distinct from the South Atlantic – North Atlantic Ocean distinct from the South Atlantic Ocean. It has an anti-tropical distribution with two distinct stocks in the Atlantic. The circulation patterns and the apparent longevity of these things at the surface say that they

could make that complete circulation of the North Atlantic before they ever settle to the bottom. Certainly loggerhead sea turtles in the southeast do the same thing.

They nest on the beaches here and they make the complete circuit of the North Atlantic before they come back to take up residence here. Wreckfish could be doing the same thing. The presence of the European fishhooks in Western Atlantic fish indicates some movement of adults or sub-adults at some point, too.

Yes, I think the circulation patterns, the apparent longevity of these things at the surface until they are at least 60 centimeters long, makes it possible. I don't think it has ever been shown. I did tag 50 juvenile wreckfish at the surface around the Azores in the eighties sometime. I can't remember when. We haven't gotten any of those tag returns back from this side, but they live to be a long time, so I am still hoping.

DR. VAUGHAN: Yes, it always struck me with – and during the nineties I was stuck with doing annual assessments for a little wreckfish meeting here in Charleston during the nineties. Finally I did an assessment for your Charleston Bump Symposium that George had in '98, I think. That was sort of my swan song for wreckfish, because by then I was pretty uncomfortable doing a stock assessment at that time of VPA, basically a very simple VPA that I had been doing for years.

You were seeing the same length frequency distribution year after year after year during the nineties. With the concern about it not being a separate stock by itself but part of a North Atlantic stock, treating it as a single stock made me very uncomfortable. Other than my paper there with Chuck Manooch and Jennifer there that came out in '01, I gave up doing wreckfish assessments, because I just didn't feel comfortable doing them at the time.

DR. SEDBERRY: One other thing I think is worth noting about that, though, the work that was done back then is that there were no wreckfish that were less than 60 centimeters and very few less than 80 centimeters showing up in the landings. Those are very common in the Eastern Atlantic, those sizes; and no fish younger than four years old, I believe, and that there were aging issues and the maximum age I think of 35 years.

DR. VAUGHAN: Chuck and Jennifer re-aged them based on discussions with people from New Zealand. A guy from New Zealand. and I forget who that was, came to our lab in '98. Based on Chuck and Jennifer sitting down with this fellow decided that our ages were wrong, and he re-aged everything, which is what I used in our published paper, but was not in my presentation down here in Charleston in '98, because he was in the midst of re-aging them at that point.

It was a fairly narrow band of ages. Either that hook is very selective to that narrow range of ages and sizes, or it is part of – that is the age and size they are when they are passing through. Whether they are younger fish that are not susceptible to the gear on the Blake Plateau, I don't know.

DR. SEDBERRY: Just another observation; there has probably been at least 20 submersible dives done on the wreckfish grounds in the last 15 years and we never see any small fish on the bottom either. They are not caught by any gear, even experimental gear, and we don't see them on the Blake Plateau either.

DR. BARBIERI: You predicted my question, George. That is exactly what I was going to ask, because I knew that you guys had done the dives.

DR. VAUGHAN: It was my impression that the young fish and the very old fish are on the Eastern North Atlantic, and these middle-aged fish are over here on the Charleston Bump. Whether that is accurate or not, I don't know.

DR. REICHERT: Doug, if I remember correctly, or George, the re-aged ages were closer to that as reported earlier of the Brazilian population, because one of the questions I had was how relevant is the data from the Brazilian population for the South Atlantic population? That was one question.

The other is a remark. One of our students is currently working on wreckfish, and he is doing a bomb radio carbon validation of the age of wreckfish. Hopefully we will have some information, but obviously we can't; not yet. That is true, right, that the re-aged ages were closer to that reported in the paper that was used by Doug?

DR VAUGHAN: I can't answer that; Chuck or Jennifer might be able to.

DR. BARBIERI: Since you mentioned, George, that the North Atlantic stock is one unit separate from the South Atlantic; what are the maximum ages observed in Europe?

DR. SEDBERRY: I don't think they've been aged over there. I don't know of any aging studies from Europe or even published reproductive biology studies; no published life history studies from Europe that I know of.

DR. VAUGHAN: There was that guy from Madeira that you were in contact with. In fact, he came here and visited us.

DR. SEDBERRY: He was interested in using wreckfish for aquaculture, and so he had done some growth of the pelagic stages, because they grow really fast in the first few months or few years, hard to say.

DR. VAUGHAN: Yes, they were all very young fish.

DR. BARBIERI: Okay, Dr. Butterworth has some comments regarding the analysis that Dr. MacCall just presented, right. Did you say that? Yes, but I don't think we are going to be able to look at this right now, because we just won't have time to scan through right here. If you have that in a way that we can see it on the screen or if those are some comments that you can make.

MR. CARMICHAEL: No, with the way we're set up and we're actually broadcasting this over a webinar, so we need to load it onto this computer. If you can put it on a data stick we can transfer it right over.

DR. BARBIERI: Then I would say let's take a five-minute break while we make the transfer. The bottom line is we are still under a limited timeframe. I really would enjoy spending another one, two or three hours; I mean to be honest, but I don't think that we have the luxury to do this tonight or this afternoon. If we can have a brief discussion of your main points regarding Dr.

MacCall's presentation, then perhaps we can handle one of the mackerel presentations or discussions today and we can reconvene tomorrow for the second one.

DR. BUTTERWORTH: Thanks, and there is not too much to put here. Also, you will be pleased to know Alec and I are deciding essentially our results are pretty similar to each other; and secondly, if I now say anything he disagrees with, he is right in the place where he can smack me.

DR. MacCALL: I'll agree with your disagreements.

DR. BUTTERWORTH: We'll see how it goes. The first point here – and I'm just going to cut to the quick with this – having seen Alec's work, which essentially just fitted the M value, if you like, and be careful, Alec's M is not our M. He has got an M minus G. His 0.023 is not what I'm going to show you or 0.05.

But if you look across, don't look at the first line, which remember negative log likelihood, the lower the better, so it is pushing you at high M. If you look on the second row here, you will see that is fitting to the CPUE only in our model. It starts at minus 30. It is where we are running here from 0.03 to 0.05. It hits a minimum at around about 0.04 and then it starts going up again.

Roughly speaking, if all you want to look at is CPUE, your best fit is going to come in at about 4 percent and genuine natural mortality and not the biomass natural mortality which takes growth into account. But the other side of the coin is what's happening to the catch at length? Well, you can see here the higher you make the M, the better the value you get here, so on balance the catch at length keeps beating the CPUE. What happens to the MSY here?

Alec was a bit surprised with this. Nominally, let's say 0.4 between friends is rounding it off here, there is the best value of the fit to the CPUE. Here is the MSY, 270. If we took 0.5, it is up to 350, so it is a bit less than Alec's figure but.

Now let's look at the other thing we did here briefly, and that is to pick up on Alec's other point, and let me show you the figure first. Remember, Alec's point saying, well, I'm misfit to the large – why didn't we get more, larger fish in the catch? Well, some sort of dome in selectivity. What we've done here, we ran through a series of values, and I've just done it for M equals 0.05, where that is flattop selectivity; that is what I call 0.1 and 0.2. What is the impact on the results of doing that?

Let's just go up to the equivalent table here. We picked this up from a point Alec has made. What happens here is as you – remember now we're fixing M – as you increase this slope on the selectivity, you will see the third line here, the fit to the length distribution improves, gets lower from minus 20 to minus 40 there.

In terms of the overall fit, again it improves. But in terms of the CPUE. at first it stays fairly flat, but then it starts deteriorating again, so you've still got this conflict here. I'd leave you with a thought on the conflict just before I go to the pictures of be a little bit careful about saying we put all our faith in CPUE and none in catch at length or vice versa. I think both are telling you a story; am I allowed to mouth the dreaded words Myers and Worm and what you shouldn't do with CPUE data? You know be careful about initial declines in CPUE data as well.

There are stories that need to be looked at there on both counts. You'll know the data better than I do, but as I say, you don't get rid of this conflict. What Rebecca has actually done here, you may say, well, why didn't we just estimate everything, estimate the slope, estimate M? Yes the fishermen go very happy with an infinite biomass.

This is why you've got to be careful with this. I think one is looking for not letting the estimation go wild in situations where you have got limited data, but try to put some bounds in on the priors on things like M and so forth from other information; sort of along the lines Alec was doing, but perhaps a bit more of it if you are going into not just a bulk dynamics model as he did, but the model we had here.

Just quickly, the last point here; I should just show you what happened to the biomass within this sweep here as we improve slight deterioration in CPUE, but improvement to catch at length, you start biomasses and your MSY goes up; so not unexpectedly, because actually the biomass is going up. It is trying to fit that age structure better.

I just wanted to make the point it wasn't just – sure, Alec was right, the criticism of – but we didn't look at dome. Well, we were just taking the first step. This is second step and not saying this is the only step. But put in a dome and it solves some of the problems; it doesn't answer all of them. You can see an effect here first of all. This was the one that had a natural mortality of about 4 percent.

Still the problem of fitting to the catch at length; and then when we put the dome in, let's get them so you can see all three on one plot, so you can see all three here if I can squeeze it onto the page, you can get the idea there. As you put in the slope, remember this is all M is 5 percent; you go from there to there, 10 percent slope. You are getting rid of most of that lack of, but then you are losing out over here.

The question is really which do you want to believe more? There is this conflict. I'm saying obviously the fishermen would like you to believe this one more, because that is going to give them an answer closer to what they want. I just caution against the other extreme as well. The truth is somewhere in the middle here; and quite where it is, I'm not sure.

We are sort of bounding it here. I think again the picture is in broad terms, and I think Alec may agree with this, and he is in the right position to hit me if he doesn't; the basic picture is a little bit more optimistic than you got out of the DC-AC last year. Also, and I think this was Alec's point and I don't disagree at all; there was whatever you want to call it, an initial bonus in this fishery as you fish down.

You are now getting into the sustainability era and the catch is going to be less. The sustainable catch is not what you took on average in the first ten years. It has got to be lower than that and the question is how much lower. I think we are narrowing it a bit, but this isn't the end of the story. Hopefully, that is short enough.

DR. MacCALL: Could I just mention this morning we heard about the gospel of St. Francis. St. Francis said to try to fit the CPUE series primarily and don't lose fit to the CPUE series by trying to fit the comps. It came out independently this morning.

DR. BUTTERWORTH: We'll disagree about our gospels later.

DR. BARBIERI: Overall, personally I have to say I thought that these presentations and the discussion were extremely informative and I have enjoyed them. I think that they improved our ability to see more of what is in this data and to have a better understanding of different perspectives, different ways to look at this data and mine it for information content.

I've enjoyed it. I think that in general we would like to see additional analysis or additional exploration of some of these methods. I don't think that this is the – and I'm trying to reflect what I've heard from a lot of other committee members that this would be the time and place for us to do that.

Perhaps we'll plan a follow-up workshop sometime into the future where we would select a group of people that would be more interested in exploring this and I think that either to confirm the catch level recommendation that we have in place right now, or perhaps to refine it. In general I want to thank both of you for taking the time of conducting the analysis and coming over here and give the presentation.

I'm going to give the committee one last opportunity to make comments or ask questions of Dr. Butterworth and Dr. MacCall. I think we are going to proceed then for our Mackerel Regulatory Amendment presentation. In terms of a recommendation going forward, it is something that we are going to have to explore in the future. Are there any other comments or questions? Again, thank you both very much for the very interesting discussion, very informative.

In terms of reviewing comments and my understanding of the base discussion that we had here is that at this point we are not ready to make a revision to the existing ABC recommendation, but that we feel that the analysis was informative enough to be explored in the future as we have the opportunity to pursue this in more detail.

MR. CARMICHAEL: How should we do that; any guidance?

DR. BARBIERI: Not yet. I'm thinking about organizing into the future a potential workshop, but in the interest of time I don't see a pressing need to make that decision right now unless it is the case from the council's perspective. I think we are in a good place and we will make our report to the council and ask for their input.

MR. CARMICHAEL: I asked Luiz sort of what the next step is, then, because I think if you put it out there like we are not ready to do a revision of it yet and we'd like to see this pursued further, the obvious question of both the fishermen and the council is going to be, well, when, what more do you need to see, how should we go about doing that?

How do we make some progress on this so that each year we don't get another set of wreckfish analyses that we talk about and maybe we shift our ABC one way or the other depending on which way the evidence seems to be pushing us? I think if we could be somewhat specific about how you think this should be handled; should this go into a SEDAR? Should you ask the council to convene some kind of workshops? Should we try to do some kind of assessment workshop and put it out for independent review through the CIE in some way? If we could have some of that discussion. I think it would be very helpful.

DR. BERKSON: Well, given that we have data that hasn't necessarily gone through formal review, we've got assessment models, competing assessment models that haven't gone through formal review and nothing has been peer reviewed, it seems to me this is exactly what is right for a SEDAR.

Now I understand the limited number of stocks that can go through a SEDAR each year and how far out the planning takes place. This may not provide a solution along a timeline that is desired. I don't know what the process is to speed that up, but I think by definition this would normally fall under a SEDAR.

DR. BARBIERI: To that point, Jim, which I think is a good one, my understanding of SEDAR – and I've been dealing with SEDARs from the very beginning, from the very first one forward. With FWC, we have participated. We have been taking the lead in some of the assessments. Some of them we had all three workshops.

Some of them we did in-house just like an update as Kyle and Lew presented today, but we sent it out for a CIE review, either review in person or a desk review. I think that this can fold into the SEDAR framework, but not have to follow that very strict, perhaps the more cumbersome definition of SEDAR.

MR. CARMICHAEL: Throw out a strawman for people to beat up, perhaps something along the lines of the standard model where you do a combination data assessment where we could bring in people familiar with the data and get the data vetted. Then perhaps Dr. Butterworth and Dr. MacCall could come and fill the analyst slot, which avoids filling one of our designated slots, which we showed earlier on our planning worksheet, which is tied to the Science Center analysts, and do it in that way.

It might allow it to happen a little bit faster and then put it out for a review. Then we discuss do we ask for a review workshop? Do we fold it into one of our planned review workshops, which is coming up in the next year, which we've done that quite often and that may be a possibility, or we send it out for a desk review or something.

I don't know if Bonnie and council leadership are thinking I'm crazy for throwing this out here, but that might be a way to go about getting this to happen a bit faster. I think the important limitation is our assessment analyst; and if these guys are willing to come and participate in more of a workshop format, which sounded like Dr. Butterworth maybe had hoped he was getting into in this situation, but didn't, that maybe we can really get this moving forward a lot faster.

DR. BARBIERI: That is exactly what I had in mind. Michelle.

DR. DUVAL: Thanks, Luiz; and just from a council perspective, I would endorse that and I think there are a lot of other council members who would as well, . I know that at SEDAR Committee meetings, I myself have spoken up and said is there some kind of SEDAR light approach that we can employ. Light as in l-i-g-h-t, not like l-i-k-e. But you know what I'm getting at, something that is not quite as resource intensive and doesn't require kicking something out of another slot for someone else. I would fully endorse that.

DR. BARBIERI: Yes thank you, Michelle. Well, with that clarification, I think we are ready to move on. Kari, I guess we are ready now. We felt that we were ready before and we were not, but now we are. We are going to proceed for our last item for today and we are going to reconvene in the morning to continue with the other.

DR. MacLAUCHLIN: I am Kari MacLauchlin, council staff, and this is Joint Coastal Migratory Pelagic Amendment 19. This is one of the joint amendments with the Gulf Council. We have two of these. The other one is Amendment 20. These have been in the works for a while – this is Attachment 12 – but because of other things that come up and then just the joint council process and then we are waiting on data for some of the analysis, these are not as far along as I think that we thought they would be by this point.

Right now the expected timelines; there are five actions in here, and I'll walk you through these. The expected timeline is that the – we just changed the timeline, because we have some data that is taking a little longer to get together than we thought, so everything is pushed until March, and then you will get another chance to look over the analysis and council preferred alternatives and everything.

The Mackerel AP will also review that in April, and then the council will review it again in June. Then we'll take it to public hearing in August. We're still kind of early in the whole overall process. But the Socio-Economic Panel reviewed some of these and has some recommendations, just specifically kind of talking about the background of these actions.

Action 1 is sale of king and Spanish mackerel. This is bag limit sales. Currently king mackerel and Spanish mackerel, you can sell these even if they were caught on recreational trips. This action would potentially prohibit that. All the other commercial species, dolphin and wahoo and all the snapper grouper species are no longer allowed; you can't do bag limit sales anymore.

The councils were interested in looking into this. Right now the South Atlantic Council has the preferred alternative of no action, and I'll explain that in a minute. Another alternative that would allow bag limit sales specifically from for-hire trips as long as the vessel also had a commercial permit.

Then Alternative 3 would prohibit all sale of king and Spanish mackerel caught on any recreational trip, so that can be a private trip or for-hire trip, even if they have a commercial permit. That is the Gulf preferred. There used to be an action in this amendment that would allow tournament sales of king mackerel.

The South Atlantic Council in general was interested in allowing tournament sales, but prohibiting bag limit sales. What they would need to do is create some kind of provision that would exempt the king mackerel tournament sales, because basically if you prohibit bag limit sales then you are going to prohibit tournament sales. We started working on really digging into creating a tournament permit and reporting requirements and all these things.

Then the council decided that they would rather put that in another amendment to really get into the details of allowing tournament sales of king mackerel. In the meantime, in order to continue to allow king mackerel tournament sales, they would have to select the no action alternative. That is why – and this will be an interesting joint council venture.

We are waiting on the data from the states. I think Brian has it, so it is a pretty heavy econ analysis in there. At this point I can turn it over to John Whitehead to talk about the SEP's comments on it.

DR. BELCHER: Only because Georgia is not on that list of states; is there a reason why? It says that North Carolina, South Carolina and Florida will have the data to the IPT soon. Is there a reason why Georgia is not on the list?

DR. MacLAUCHLIN: I don't have Georgia; do you have Georgia?

DR. CHEUVRONT: I do have Georgia.

DR. BELCHER: Okay, so you have already got it. That's why, just checking.

DR. WHITEHEAD: The Socio-Economic Panel met yesterday and we discussed this. The panel recommends against elimination of bag limit sales for king and Spanish mackerel. These bag limit sales allow additional economic values since the commercial value is added to the recreational value. An elimination of the bag limit sales might lead to illicit sale of landed fish, as well as the loss of important data on these landings.

The panel recognizes that there may be cause for compensation to the commercial sector if there is damage caused by these bag limit sales in the form of reduced available catches or downward price pressure. There are many potential remedies to this damage involving transfers, in-sector apportionment of allowable catches or monetary transfers. The SEP recommends these in favor of eliminating sales.

DR. MacLAUCHLIN: What we're looking for from the SEP and the SSC, if you want to discuss and comment on it, this is more of just an FYI. We talked about it with the SEP to get just their viewpoints on the overall action and then also what kind of economic and social considerations go into it. I can move on if you like unless anyone has questions they want to discuss.

DR. BARBIERI: Okay, so basically, Kari, you can take this feedback and integrate this into -- yes.

DR. MacLAUCHLIN: You will have a chance to review this again with analysis – that is what we don't have right now – in April.

DR. BARBIERI: It looks like we have time to move onto the next one if the other one is just as fast.

DR. MacLAUCHLIN: That's just Action 1.

DR. BARBIERI: Wishful thinking.

DR. MacLAUCHLIN: Okay, Action 2 deals with sale of cobia. Right now there is no commercial permit requirement for cobia. The recreational and commercial possession limit is two fish per person per day. In some areas the bag limit sales of cobia are important to the local

market and to restaurants. It's the charter trips that are supplying some of these local areas. Most of the time cobia is caught on trips that target other species because there is a two-fish possession limit.

The Gulf preferred alternative is no action, just to leave it as is, no commercial permit requirement. This would continue to allow bag limit sales of cobia. Alternative 2 would just create a new commercial cobia permit and that is what you would have to have in order to sell them.

Three would allow you to have a king mackerel or a Spanish mackerel permit kind of in lieu of any kind of cobia permit. Then the South Atlantic preferred alternative right now is to allow a person to sell cobia as long as they have any of the South Atlantic or reef finfish commercial permits. Then I have a table in here that shows what each of the alternatives mean.

Really only Alternative 1 would continue to allow sales of cobia caught on any kind of recreational trip or for-hire trip, but 2, 3 and 4 would prohibit bag limit sales and then put some kind of permit requirement in place. I think there are some brief comments from the SEP on that.

DR. WHITEHEAD: We have the same recommendation for cobia as Spanish and king.

DR. BARBIERI: Consistency.

DR. MacLAUCHLIN: Continuing on, Action 3 is elimination of latent permits in king mackerel hook-and-line sector. The commercial king mackerel permit, which is the joint permit for the Gulf and South Atlantic, there are – I think we did an estimate of it like a half at least have not been active in a couple of years.

Because it is a limited entry permit program, if you don't keep it valid by renewing it every year even if you are not fishing on it, then you can lose it. People just in order to keep it in their permit portfolio and keep that option in there in case something happens with the fishery that they are dependent on and they need to move to something else, they will keep it valid even though they are not fishing on it.

The problem with latent effort is can the king mackerel stock support all 1,400 valid permits if they kicked into gear. That is for both regions. There are about 950 in the South Atlantic region. Could the stock support that? The councils have come up with different – basically they are going to define latent.

Then they are going to decide what to do with the latent permit, which would be to take it away completely or to just make it non-transferrable so it is kind of a passive reduction and over time as people retire or they no longer renew it. They can't sell it anymore and it just will go away once they are finished fishing and however different way.

There are different qualifying time periods. Under Alternative 2 is the one that just will basically eliminate any permit that is latent with some thresholds for the poundages. Alternative 3 uses a South Atlantic control date that was published with – you have to have king mackerel landings in one of five years or two of five years.

Then Alternative 4 is the one that would just make a latent permit non-transferrable and it has the same options; except one that was added, Option E at the last council meeting, that would allow your qualifying poundage to be of any commercial species. What this would do is just anybody who is a commercial fisherman would be allowed to keep it.

This one is a tricky one for analysis, but we are waiting on the data request, because I have to link the permit with the vessel with the landings for these time periods and this is taking a while. I don't have any kind of estimate of how many people would qualify, but you'll get that in April. The council will get it in March along with the APs. I do have in here – these are all the valid could be fished on permits right now. The SEP had comments on this.

DR. WHITEHEAD: The Socio-Economic Panel does not recommend eliminating latent mackerel permits without SEDAR-documented evidence of a biological decline in the stock of king mackerel. Recent low catches in the commercial sector do not justify the economic loss that would be incurred by fishermen who lose a limited access permit.

If the stock is biologically troubled, it should be addressed through biological measures. Removing latent permits in any fishery may provoke unintended consequences for management, including lessening trust in council actions and providing an incentive to fish simply to keep permits alive.

DR. MacLAUCHLIN: Action 4 is federal regulatory compliance. Basically this action under Alternative 2 and 3 would create any vessels that have the federal commercial king or Spanish mackerel would have to comply – and the CMP charter permit – would have to comply with the federal regulations even when they are fishing in state waters if the federal regulations are more restrictive.

Right now the Gulf Council has a preferred for Alternative 1. There are especially for Spanish mackerel a substantial number of vessels that only have state permits and only fish in state waters that this would not affect because if you have a federal permit on the vessel then you would have to comply.

DR. BARBIERI: Meaning if you have a federal permit, those regulations would be extended to state waters, right?

DR. McLAUCHLIN: Yes, and there are some other FMPs that they have these regulations. This would basically be to extend the bag limit prohibition if the councils choose that into state waters if you are a federally permitted vessel. Okay, Action 5 is the last one in Amendment 19. This is modify or eliminate the income requirements for the king mackerel and Spanish mackerel permits.

Right now you have to -- when you renew your king mackerel permit or you apply for a Spanish mackerel permit, those are open access so you apply for a new one every year. You have to submit an affidavit that shows that 25 percent of your income or $10,000 in one of the previous three calendar years has come from fishing.

The Gulf Council had a reef fish income requirement for their reef fish commercial permit, but they eliminated it recently because during the BP oil spill for that year the fishermen didn't have

any money. They didn't have enough income from fishing, so they were going to lose their permit. Alternative 2 would just establish the same income requirement for the cobia permit if it is created. The Gulf preferred alternative is to just eliminate all income requirements. Then Alternative 4 could be selected along with another alternative. It basically would just allow the councils to suspend any kind of income requirement if there is an event like an oil spill that would impact their ability to qualify.

DR. BARBIERI: Okay, thank you, Kari. Are there any comments, questions or suggestions for Kari? You said, Kari, that this will integrate – I mean, this amendment draft is going to integrate some additional analysis; that the comments from us and the comments from the SEP will be taken into account and perhaps presented to the council.

DR. MacLAUCHLIN: Well, in March – the council won't talk about this until March. At that point hopefully they will be able to see – all the analysis will be complete and in the document and they will be able to review all the impact analysis, especially the SEP recommendations for Brian and myself. That was to kind of help us and guide us as what kind of analysis they would like to see and other suggestions.

Then in April you guys will look over it again and be able to have a better idea of what the alternatives mean for everything and then also what went into the analysis, and you can comment on that because there is still six months or so before the council gives final approval. I just want you all to know that you have – there is not a lot of information in here, because we don't have this done yet, you will have plenty of time to comment on it again.

DR. GRIMES: I just wanted to ask a quick question. I presume that this doesn't change the allocation of the harvest against – I mean, how they are counted. They are counted regardless of whether they are sold or not against commercial or recreational allocation.

DR. MacLAUCHLIN: Well, that is one of the concerns for that is that when you sell it, it gets counted towards the commercial quota.

DR. WHITEHEAD: Our recommendation is that it should be counted against the recreational quota.

MR. CUPKA: I just wanted to point out, too, that this is a joint plan. As you've noticed here in Amendment 19, there are some differences between the Gulf preferred and South Atlantic preferred. Some of them we haven't even selected a preferred. We are going to have to reconcile where those differences are before this plan can move ahead. We may have a joint council committee meeting to try and resolve these before they can move ahead. It will be a while yet before it is submitted to the secretary.

DR. BARBIERI: Right; and we are going to have an opportunity to see this again in April after more of this analysis has been incorporated. Are there any additional questions or comments for Kari? No, well, I would say let's adjourn for the day and we will reconvene tomorrow at 8:30 right here.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday morning, October 24, 2012, and was called to order at 8:30 o'clock a.m. by Chairman Luiz Barbieri.

DR. BARBIERI: Welcome back to the October South Atlantic SSC Meeting. We are going to pick up this morning where we left off yesterday afternoon. Kari finished the presentation and discussion yesterday of the Coastal Migratory Pelagic Amendment 19. We are going to go through Amendment 20 summary and discussion. Kari, whenever you are ready.

DR. MacLAUCHLIN: Okay, this is Attachment 13. This is just a summary document. This amendment is on the same timeline as Amendment 19, so you will see it again with analysis in April. It has six actions in it. The first three are more – they are for the Gulf group king mackerel. Then we have some transit provisions, but the one that you may be the most interested in is Action 5, which would establish a state quota for king mackerel and Spanish mackerel for North Carolina.

I'll walk through each of these. Just to remind you, the king mackerel boundary for the Atlantic group is that gray area, November 1 through March 31. Then on April 1 the boundary shifts over to the Collier/Monroe County Line. This area in here, kind of in the middle around Volusia; the area between the boundaries is called the mixing zone. It is where the fishermen; part of the year they're fishing Atlantic group and part of the year they're fishing Gulf group.

The first action would modify some subzones for the Gulf group eastern zone, and they have a couple different subzones within the Gulf group eastern zone. I tried to make the map and we can just run through these and they are in the document, which is probably better for you to look at. Each of the subzones has a quota attached to it.

When the quota is met for that subzone, then it is shut down for the year. Alternative 2 would eliminate the northern and southern subzones, and so it would just make one large zone. The top map is November 1 through March 31, and the bottom is the April 1 through October 31. Alternative 3 would move the boundary between the northern and southern subzones.

Then also note these sub-options, where it says reallocating X pounds from the southern subzone to the northern, those are things that the Gulf Council is still working out. The third option creates a central subzone. You can see that here in the map. This would affect the South Atlantic fishermen that are harvesting in that mixing zone.

The options under Alternative 3 would not directly affect the mixing zone fishermen. That is why the South Atlantic will have to consider some of the impacts on the fishermen working in the mixing zone once we get all the data in there, all the alternatives set and do the analysis. Moving along, Action 2 would modify the hook-and-line trip limits for the Gulf king mackerel. They just have a couple of alternatives in here.

There has been some interest on the Gulf side to increase some of their trip limits. Then each zone has different trip limits and then step down for when 75 percent of the quota is taken to slow down their harvest so that they don't exceed. There are five alternatives; just set one trip limit for the entire year without any kind of step down.

Some of these increase quite a bit; especially Alternative 5 goes up to 3,000 pounds. Then there are options under there for the Gulf – within the different Gulf group subzones and zones. The lower trip limit in the western zone, which is the Western Gulf, will likely not affect any South Atlantic fishermen or communities.

The increase in trip limits would affect the fishermen in the Florida Keys, and this is something that during public comment that they are interested in increasing their trip limit. Then Action 3 would change the fishing season. Right now the fishing season starts July 1. There are some alternatives to change it to some fall openings. This is just for the Gulf group and only Option B under Alternative 2, 3 and 4 would affect the South Atlantic fishermen.

Action 4 establishes a transit provision for king mackerel harvest in the EEZ off Monroe County when the rest of the west coast of Florida is closed. This would just put in a provision for them to have the fish – to harvest the fish in one area and move to another area to land it. Florida has a provision set up for this, and so Alternative 4 is the language that Florida has.

Right now that is the South Atlantic preferred alternative, and it would allow fish harvested in the EEZ off Monroe County to be landed in Collier County, which is just one county north on the Gulf side when the rest of the west coast of Florida is closed with the following provisions only from April 1 to June 30; direct and continuous transit and gear stowed and only for fishermen holding a federal commercial king mackerel permit.

Action 5 establishes state quotas for Atlantic group king mackerel and Spanish mackerel in North Carolina. This started as an action that had some options in there as this is being developed for all the states or for combinations of states. North Carolina is interested in moving forward with this. We've come up with some different allocation scenarios.

When you see this again, you will be able to see exactly how much the proportion of the ACLs would be allocated to North Carolina. What would happen is this would be the percentage of the ACL landed in North Carolina; and once that is met, it would shut down; or vice versa if the rest of the South Atlantic met their quota, then you could only land in North Carolina. Alternative 2 is for the king mackerel and Alternative 3 is for Spanish mackerel.

Action 6 just modifies the framework procedure to allow for a framework when there are changes to AM and ACLs and ACTs, and a couple alternatives in there too allow each council to set the regulations for their migratory groups; and then the last alternative that would allow the councils to make editorial changes to the framework procedure to reflect changes in the advisory committees and panels. That is it really for 20; if there are any questions.

DR. BARBIERI: Thank you, Kari. John, did the SEP review this one? No. Okay, any comments or questions for Kari regarding Amendment 20? It looks like, Kari, there is forthcoming analysis that will be brought to the SSC in April that perhaps will entail a little more technical review. At this point I think it is just to give us an overview of what will be coming. I appreciate you giving us a summary. The next item on the agenda is review and comment of the Comprehensive Ecosystem-Based Amendment 3. We are going to have a joint presentation by Gregg and Anna.

MR. WAUGH: Originally we had a lot more items in CE-BA 3. The council has pulled the actions dealing with MPAs out. That is going to be in Regulatory Amendment 17, a separate amendment. Anna is here to help answer any questions as well, but I'll run through very briefly what is left in CE-BA 3 now. It is mainly items to improve our data collection.

The additional document that was sent around to you, the decision document is a document we are using with the Gulf council. This does amend the mackerel plan; they need to approve that portion, but it will only affect fishermen in the South Atlantic fishing on Atlantic migratory groups of king and Spanish and ultimately cobia.

On Page 8 is where we outline the first action. What we're doing as we go through is we are tailoring the purpose and need for each specific action. That is one thing that is a little different from the document you have now. The verbiage is basically the same, but it is just made more specific to each action.

The first action is to amend the snapper grouper, dolphin and wahoo, and coastal migratory pelagics FMPs to modify data reporting for charter and headboats. We considered requirements for charter and headboats. The National Marine Fisheries Service has conducted some work on headboat electronic reporting and they are ready to implement that. The charter boat is going to take longer.

The council's preferred alternative right now is Alternative 4 and 4B, which is to require that headboats submit fishing records to the Science and Research Director weekly or at intervals shorter than a week if notified by the director via electronic reporting. This will speed up the headboat portion of the recreational catches and help improve our ability to prevent exceeding recreational ACLs.

If you have questions, just stop me as I'm going through and we'll answer your questions. Action 2 would amend the snapper grouper, dolphin and wahoo, coastal migratory pelagics and golden crab FMPs to modify data reporting for commercial vessels. Here the logbooks, while they are not used to track ACLs, under Atlantic Coast Cooperative Statistics Program that forms a part of this system that helps verify dealer reporting.

The council has two preferred alternatives here. Preferred Alternative 2 would require NMFS to develop a system to allow fishermen to submit their logbook information electronically. Right now it is via paper and a number of them want to go to electronic, and ultimately NMFS is working on a system that will convert this to electronic.

They've suggested a new proposed Alternative 4 that looks at making this electronic. We haven't taken that out to public hearing, so we will have to see how the council handles that at the December meeting. The timing on this is for the council to approve this for formal secretarial review at our December meeting. A part of this is a timeline for having this information in. Right now it is seven days after the end of each trip. The fishermen have pointed out that they need a longer period of time to get the economic data.

Part of the instructions on the logbook says that they can use current market price information when they land. There is a way that they can meet the seven-day requirement; but if we want to

get actual cost information, it would need to be longer, 21 days. The council will have to deal with whether we leave it at the seven or change it to the 21.

Their preferred now is for it to be 21 days. There is some concern that, well, that is extending the period of time. Well, there is a lot of non-reporting on the logbooks. When the fishermen go to get the permit renewed, if they haven't submitted all their logbooks, then they are given the opportunity to pull out all the logbooks that I'm sure have been accurately filled out and just forgotten to be mailed in, and then they send them in and they get their permit.

What this does under Preferred Alternative 3 is to require that they submit no-fishing forms, and that they be current in their reporting in order to sell fish. Now we've done the same thing in a dealer amendment where the dealers are going to be required to be current in their reporting or they are not authorized to purchase fish.

This tracks what NMFS has implemented in the HMS fishery. It will improve the timeliness of the fishermen reporting here and this will allow us to be able to better verify the landings from the trip tickets and ensure that we don't exceed ACLs. The third action deals with bycatch and discard reporting. The council does not have a preferred alternative here.

ACCSP has a discard module. Part of that has specifications for levels of observer coverage, and that's the rub. The agency doesn't have the funding to implement this versus the requirement on the council is to specify a data collection program that will result in bycatch information being collected. The council will have to sort this out and pick a preferred at the December council meeting.

Then the final action deals with requiring VMS in our commercial snapper grouper fishery. The Gulf reef fish fishery, they are currently required to use VMS. We have VMS in our rock shrimp fishery. That has been very helpful as we look at area-based management. This has been strongly recommended by our Snapper Grouper AP for several years now.

The council is considering requiring all commercial snapper grouper fishing vessels to be equipped with VMS. The purchase, installation and maintenance must conform to the protocols established by NMFS. As long as there is money in the NMFS Office of Law Enforcement Account, that account will pay for the equipment and the fishermen are responsible for the upkeep and communication cost. That is a quick overview. I'll be glad to answer any questions and Anna is here also if you have any additional questions.

DR. BARBIERI: Are there any questions for Gregg? Gregg, I have one quick one. Maybe I'm just not up to date on the latest discussion on this, but I remember sometime earlier this year, I guess, maybe late last year, we were discussing this issue of the timeliness of reporting. I think our intent was to get it weekly. At the time there seemed to be some problems with weekly in terms of I guess the agency had some concerns about their ability to handle the weekly reporting. Have those problems been overcome and are we going for the weekly?

MR. WAUGH: Yes, and initially the council was exploring daily, because some of our ACLs as you all are well aware are very small. There was concern as to whether you could adequately ensure that you wouldn't exceed them with weekly as well. In the northeast they tried daily and

the system was just overwhelmed. Right now we are specifying weekly and the agency has indicated that they have the system in place to be able to handle that.

DR. BARBIERI: If no other questions, I guess we are ready to move on. The next item is Snapper Grouper Regulatory Amendment 17. I guess Gregg will be back for that presentation.

MR. WAUGH: Thank you, and my role here is just to indicate where the council is with this. This originally was a part of CE-BA 3. We took it out to scoping and the council has chosen to split this out into a separate snapper grouper amendment, Regulatory Amendment 17. They will be receiving a presentation I think similar to what you are going to get here.

What they want to see in December is a reorientation of existing MPAs that could better achieve protection for speckled hind and Warsaw. They did receive a presentation at the September meeting from observer work in the snapper grouper fishery, and their encounter rate for speckled hind and Warsaw was so low that they couldn't even calculate a catch rate in the snapper grouper fishery, so this is not a very common catch.

The council is going to receive that presentation from Nick at our December meeting, looking at reorienting existing MPAs, and then they will give us further guidance at the December meeting on the timing for Regulatory Amendment 17. We have a round of public hearings in January; but if they decide to go forward and we can't have the documents ready at that time; so it will probably be if their decision is to move forward, there is another round of public hearings scheduled in August. You would have a chance to see this probably more than you want to. Any questions about timing; Anna anything else we need to raise? Okay.

DR. BARBIERI: Thank you, Gregg. Do we get the presentation now from Nick?

DR. FARMER: All right, thanks for having me back. We've covered a lot of ground I think in the last few meetings on speckled hind and Warsaw grouper. I've got a few additional things to show you. I tried to keep it short by not repeating myself from April; but if you have questions about things that we talked about previously, I am prepared, of course, to help out and address those.

Just as a reminder, these two stocks have extremely complicated both long-term and recent management histories. Those make any analysis of their distribution or their stock status extremely complicated. The study that I have put together in the rather long document that we sent you guys looks at landings and discard trends for both stocks, which I presented to you guys in April.

It also looks at species associated with speckled hind and Warsaw grouper, also presented in April. We've gone some extra steps. We had a qualitative discussion of the distribution of speckled hind and Warsaw grouper previously. We've done our best to add a quantitative discussion of it in this presentation and in the document.

We have also looked at the impacts of proposed spatial closures and existing spatial closures on speckled hind and Warsaw grouper as well as the proposed ones upon associated stocks. There were a variety of data sources that were considered in putting together this work. Basically I

think just from the beginning of this it is good to know my assessment of this kind of approach is that not any one of these approaches is 100 percent satisfying.

The data is very limited and there are a variety of confounding factors with regards to regulatory history and sampling areas, geographic sampling zones, the way the data was reported that make every approach that I've taken somewhat unsatisfactory. But I've taken a lot of different approaches with a lot of different datasets and they all tell a relatively consistent story.

I guess legally you would think of it kind of like a preponderance of evidence kind of thing. If you feel like all of these somewhat flawed sources saying relatively the same thing, it may convince you that we are getting closer to the truth at least. Of the data sources that we looked at, we looked at commercial logbooks, headboat logbooks, reef fish observer program, MARMAP, ALS, trip tickets from all the states, the Deepwater ROV Study that has been done by Andy David's group.

We've got a variety of anecdotal fishing reports, some of them from people in this room. We've got information from SEFIS, from the Reef Voluntary Scuba Diver Program, the Oculina ROV Program, Chuck Manooch's work with the fisheries research group out of North Carolina, Georgia's own sub observations, museum collections and we actually also pulled data from the Reef Visual Census in the Keys, but it had no observations so I didn't list it here.

If you look at speckled hind and Warsaw grouper observations by all those various datasets, you will notice the red Xs, which vary in size depending on the number of headboat observations at that site, are relatively widely distributed. Now the headboat is our least precise of the somewhat spatially reporting data sources.

It is not 100 percent reliable in terms of identifying quite where that catch actually happened, but it does show you that over the long term there were quite a few encounters of these species. That is the longest running dataset with vastly more observations than any other for these stocks. But if you look at the point data source, all those other data sources that I discussed on the previous slide, you will notice a relatively consistent trend emerging for both stocks where the preponderance of the observations are in the 25 to 100 fathom range.

In looking at a habitat suitability analysis for these two stocks, we took that 25 to 100 fathom range and we broke it up into habitat depth grids. One of the reasons we looked at 25 to 100 fathoms was because that looked to be where the bulk of the observations were coming from, where we had point samples.

Another reason would be that the spatial closures that have been proposed are designed to reduce bycatch mortality using gag as a proxy species because it is relatively well studied with regards to release mortality. You've got 50 percent release mortality occurring from about 25 fathoms out. In addition, we had MARMAP and SEFIS and a few other data sources indicating that your probability of a fish being mature, that is spawning capable, were highest outside of 25 fathoms.

I've got a slide after the questions to address that but I presented it to you in April. In order to break the 25 to 100 fathoms into habitat depth grids, we basically intercepted the SEAMAP habitat grid categorizations, which are one minute by one minute squares, with five fathom bins that were created from the Coastal Relief Model.

We also used new high-resolution bathymetry that NMFS, USGS, and a variety of other sources have put together to reassign some of the SEAMAP unknown habitat. Places where SEAMAP hadn't sampled, we went through and used that high-resolution bathymetry. We pulled together what the maximum slope was there.

We looked at what the maximum slope was in the SEAMAP data for hard bottom habitat. We basically said if the average max slope in an unknown habitat is equal to or exceeds the average maximum slope in a hard bottom habitat that had been identified, then the unknown habitat was reassigned to a "maybe" hard bottom.

In order to do a qualitative habitat suitability analysis for speckled hind and Warsaw grouper, we had four categories; known, probable, no and unknown. The known category would be a point observation, so a non-headboat observation was observed in the grid. A probable habitat would be either there was a headboat observation within that habitat depth grid or there was hard bottom or possible hard bottom habitat in the grid.

No would be that there was no point observation and greater than five samples by a point data source. Unknown would be it is an unknown habitat and there is less than five samples in the habitat. Then we did a quantitative habitat suitability analysis, and I had some really great input from Mandy Karnauskas over at the Southeast Fisheries Science Center and also from Church looking at a logistic regression model of the probability of detection.

We used SAS proc logistic with a logit link and used a stepwise process choosing variables based on the reduction in AIC. The variables that were considered were latitude and a square or quadratic function of latitude. I felt that that was important; because otherwise if there was an increasing trend with latitude, it would never taper off, and it would just basically say North Carolina is where all the fish are.

Using a quadratic function of latitude, we looked at that and then depth and then a quadratic function of depth, and then a habitat so that would be hard bottom, possible hard bottom, not hard bottom, or unknown and then gear. The gears that were considered were the various gears where we had both an observation base and then also a sample base so that you could create a probability of detection.

Those gears were MARMAP, headboat, the fishery research group from Chuck Manooch's lab, SEFAS trap, SEFAS video, Oculina ROV, and then the Deepwater ROV Survey. The goal of this quantitative habitat suitability analysis was to solve the function by depth grid, controlling for the gear effect, so basically pulling out that gear effect to predict the probability of occurrence.

DR. REICHERT: For MARMAP you used the trap or you used all the gears that we were using?

DR. FARMER: For MARMAP we used all the gears that had an observation of speckled hind or a Warsaw grouper. I think that actually turned out to only be the trap because of the long-term time series. I think it ended up being only the MARMAP trap, but I would have to look into that. It may have also included the vertical line, but you guys have a relatively shorter time series on that. I should say that in terms of the probability of occurrence, the way we treated the observations was a binary function.

If there were a set there and there were an observation, that would be a 1. If there were a set there and there were no observations, that would be a 0. It didn't account for the number of fish that were observed because of the differences between these various sampling gears. It is simply a binary function; either you saw one or a million or you saw zero.

The results, basically we had 45 percent of the probability explained for speckled hind with this approach by incorporating latitude, habitat type and sampling gear, and then also depth for speckled hind. Then for Warsaw grouper it was just gear, latitude and habitat type. That explained about 20 percent of the marginal variability.

Those were your significant predictors that were incorporated. These are what the maps of the probability of occurrence look like. Basically what I've done is I've broken this out into quantiles. The deeper colors or the darker colors are areas where there is a higher probability. I recognize looking at that it is pretty hard to see it. There is a paper that we provided as well, and this looks to be Figure 37 in the PDF.

DR. BARBIERI: Yes, which is Attachment 15 in your briefing book.

DR. FARMER: You can see that basically north of Hatteras you get a decreased probability of observation. Then out on the edge there, which is a place where we have never seen them, the probability is extremely low. You get a relatively high probability kind of within the middle of the depth range here and tapering out to the sides.

Coming down into South Carolina – and I've overlaid the existing MPAs here – you can see that there is still relatively high probabilities, and then they seem to taper off beneath the Florida MPA, and you get just these habitat patches basically of very high probability surrounded by not much. Then going further south you get very low except for within some of the reserves.

I think that part of this is driven by the fact that the gears that we were able to consider were relatively limited with regards to their samples below about 28 degrees. I would say that this analysis is maybe somewhat robust, between about 28 and 34 degrees latitude; but below 28 it might not be all that useful and that really there is just not much sampling going on there where we had both a sampling scheme and the observations.

Looking at Warsaw grouper, one of the things you can note right off the bat is the probabilities of observation are much lower for Warsaw grouper coming out of this quantitative analysis. There is also not a lot going on up north of Hatteras, for sure. Moving down into South Carolina, you have got relatively high probabilities in certain areas, and I stress relatively because it is still extremely rare. Moving down off of Georgia, you get a pretty thick swath of high probability.

Then moving down into Florida, the probabilities begin to decrease south of Fort Pierce. Then into the Keys there is just this one spot the Warsaw Hole out beyond Key West. What we wanted to do after putting together these qualitative and quantitative habitat suitability analyses was to look at existing and proposed closed areas and the relative impacts of those.

We had a couple of different approaches to that recognizing that all of these approaches had some flaws. The qualitative habitat suitability analysis, the way we dealt with that is we looked at the sum of the areas of known and probable habitats within an MPA relative to the sum of the

area of known and probable habitats within the entire South Atlantic, 25 to 100 fathoms region, so it is a ratio percentage.

For the quantitative habitat suitability analysis, we looked at the sum of the area weighted detection probabilities within the MPA divided by the sum of the area weighted detection probabilities within the South Atlantic's 15 to 100 fathom region. Then we put together basically an ad hoc kind of binary CPUE treatment, which was that percent observation per gear sample.

We broke those per Jim's suggestion last time into a fishery-dependent and fishery-independent POGS is what I call it, percent observations per gear sample. Basically that would be the sum of the observations from headboat, the Fishery Research Group and the Reef Fish Observer Program in the MPA divided by the sum of the samples from those programs in the MPAs.

Again, those are binary treatments of the observations so it is either a one or a zero. This function basically effectively weights headboat, the Fishery Research Group and Reef Fish Observer Program equally. It would be obviously pretty easy to experiment with different weightings for those groups, but I felt like we sort of did that in terms of controlling for gear effects with the Quantitative Habitat Suitability Analysis.

For what its worth, it seemed to sort of work. It definitely had its limitations. Then for the fishery-independent POGS, we looked at MARMAP, SEFAS, Oculina ROV and the Deepwater ROV ratio of observations to samples. Moving on, the next series of images are basically the proposed MPAs.

These are MPAs that were proposed by the expert working group in addition to some other ones that we came up with relative to where the observations and highest probabilities of observations were found. We also took some of the expert working group MPAs that they had suggested and tweaked them somewhat with regards to their boundaries to better encompass the way that we were going to evaluate the MPAs' performance.

In North Carolina we have North Cape Lookout, North Carolina MPA, and a North Cape Lookout 2. Those are up at the upper right; then a South Cape Lookout, North Carolina MPA. On this map basically you can see point observations of speckled hind and Warsaw grouper. The speckled hind are the Xs, Warsaw grouper are the plusses.

You also have spawning speckled hind as the pink stars, so there is one here, for example. You have wrecks and artificial reefs indicated, and I put together a comprehensive database of wreck and artificial reef sites from fishing websites, state DNR resources, USGS and a variety of other sources, recognizing that speckled hind and especially Warsaw grouper tend to use wrecks in the South Atlantic as aggregation sites. I thought maybe that is something that we would want to look at within these MPAs is do they contain some wrecks?

DR. BARBIERI: Just a quick question – and you may have pointed this out and I just missed it – this covers the entire time series of data, so this is looking at this distribution or occurrence in this case over the entire lifespan of the database?

DR. FARMER: That's correct. In April I had presented some side-by-side figures of the speckled hind and Warsaw grouper from the whole time series and then just from 2000 to present. In looking at those, I did not see a substantial shift in the distribution of the stocks. Given how data limited we were, I decided to go ahead and include it all.

Also we had a lot of comment at the Expert Working Group, especially from Chris Koenig with regards to if they were there in the past and you protected, then they will likely come back. That is from his experience with Madison-Swanson and especially in the Gulf. We looked at the whole time series.

Moving down south of the snowy grouper wreck, we've got a snowy grouper wreck extension, and then that was it for the proposed ones off North Carolina. South Carolina is relatively well studied compared to the other states, because you have MARMAP launching out of there and you also have the reef fish observer program majority of observations coming out of there. Because of that, you are able to develop a lot more MPA options off of South Carolina, not to say that you should necessarily pick all of these.

The idea is there is a lot more data there so you can get a lot more refined with regards to what you are trying to accomplish. The Expert Working Group, for example, had several different reconfigurations of the Edisto MPA as well as an extension of it proposed. I've got to zoom on this later so we'll get a bit more refined on that.

You can see that the northern South Carolina MPA you don't have too many observations and you've got a lot of kind of no habitat out to the east; whereas, if you reoriented it, there is quite a large swath of observations and spawning speckled hind and Warsaw grouper observations within this zone.

You've got a mid-South Carolina MPA, the Georgetown Hole and Devil's Hole area, which is kind of that bend there. You've got a Charleston Shelf MPA that is coming off of Charleston. The Edisto then the Charleston Deep Artificial Reef, you can see there is not much in there nor in the Georgia MPA, which are existing MPAs.

But I also put together a Georgia MPA reconfiguration, which covers some Warsaw grouper observations and some hot zones for speckled hind. Moving down into Georgia and northeast Florida, there was a proposed St. Simons MPA. I also threw in a little St. Simons extension here, because there were more observations extending north of that.

Fernandina Beach off of the coast there looks like there is a pretty large shelf-edge swath of habitat. Then St. Augustine, Florida had some observations as well. There are also some hot zones as well as a wreck off of Daytona that appeared to merit some consideration. You can see the Oculina Experimental Closed Area, an extension off the St. Lucie MPA; and then moving all the way down to the Keys, you've got Key West in the corner here.

There was a proposed western Dry Rocks MPA, because there are a lot of spawning permit and snapper there and they believed maybe there would be spawning Warsaw grouper and speckled hind as well. Then there is the Warsaw Hole and there are a couple of different configurations of that; a large one with buffers and then one encompassing just the observations in a real tight box.

To zoom in on some of these MPAs so you can see a bit more of the detail, you've got the North Cape Lookout 1 and 2 and then the South Cape Lookout. You can see the habitat swath kind of running down. Then the maybe habitats are those known and probable habitats in yellow; known in red, and the observations are these Xs.

The habitats that are white are the unknown, so we don't have any SEAMAP or high-resolution bathymetry data for those. There is a reorientation here of the northern South Carolina MPA to encompass some spawning sites and some more of the known and probable habitat; a mid- South Carolina MPA, because there are Warsaw grouper and some speckled hind observations in here.

Then there are these three MPAs, Georgetown Hole MPA, and you can see some spawning Warsaw grouper possibly within here and also observations of speckled hind and a spawning speckled hind down here. There is the Devil-s Hole 2, which is this parallelogram. There is Devil's Hole 1, which is smaller and then the Georgetown Hole, which is a big square.

Let me just real quick let you know which figure this is in the document so you can follow it, because the presentation is pretty straight with the document. This is Figure 52. Then moving down, we had a lot of different proposed reconfigurations of the Edisto MPA. That existing MPA boundary is this east/west rectangle here.

There was a proposed reconfiguration here in the orange, Edisto Reconfiguration 3; an extension, Edisto South Extension. Edisto Reconfiguration 2 is this kind of oddly shaped kind of Fenway Park shaped reconfiguration. The Edisto Reconfiguration 1 is a pretty straightforward realignment of the MPA.

But you'll notice that the Edisto 1, for example, which was proposed by the working group, did not encompass these observations up here and also results in a non- east/west boundary. In keeping with the idea that maybe we'd like at least one of our MPA boundaries to run with a line of longitude or latitude, I put in the Edisto Reconfiguration 3.

The Georgia MPA Reconfiguration, you can see the Georgia MPA was basically designed I believe to promote sustainability for golden tilefish; not many Warsaw grouper or speckled hind observations in there, but if you moved it inshore and slightly south it would encompass some observations of both.

These are Warsaw grouper at the top and then mostly speckled hind with two Warsaws down at the bottom. Off of St. Simons Island, Georgia, you've got a St. Simons MPA that was proposed. You can see a whole swath of observations in there; and then another strip of them within the extension here.

Then off Fernandina Beach you've got a swath of both Warsaw grouper and speckled hind observations. Here is the St. Augustine MPA further down south and an extension of it to encompass some additional observations of Warsaw grouper; Oculina Experimental Closed Area; and then an extension off the St. Lucie MPA that would encompass a lot of Warsaw Grouper observations, and some Warsaw and speckled hind down here.

And then the Warsaw Hole down in the Keys had a variety of Warsaw grouper observations and it's believed to be a spawning site for Warsaw grouper. To determine the impacts of these closed

areas for speckled hind, we did, as I said, a ratio of the known and probable habitats contained within each of those MPA alternatives relative to the total known and probable habitat within the South Atlantic 25 to 100 fathoms region.

If you look at this, the existing MPAs are in sentence case down at the bottom. You can compare those to these proposed MPAs starting with the Charleston Shelf MPA and moving up to the Western Dry Rocks MPA. This is known and probable habitat along the bottom. I've got a table that will follow these various graphics if we really want to look at the numbers.

I think this helps you get an idea of the relative protections afforded under the qualitative habitat suitability analysis by the various MPAs. The Daytona MPA is really pretty impressively affective, but I should note that it is also much bigger with regards to area than any of the other MPAs that are looked at in here. Some of that is just due to the fact that it is really large.

Some other effective ones appearing to be effective at least for speckled hind would be the Edisto Reconfiguration 2, the existing Oculina MPA, the Fernandina Beach MPA, the reconfiguration of the Georgia and then the St. Simons. This is the estimated percent of the stock in the MPAs, so this basically is the area weighted probability of observation from that quantitative habitat suitability analysis.

If you add up the probabilities of the various areas and then multiply them by the area, so area weighted probability of observation, this is the estimated percent of the stock that would be contained in the various MPAs. You can see that Edisto, the existing has a really high amount. Some of the reconfigurations do even better, especially reconfiguration 3.

The Georgia MPA reconfiguration, St. Simons MPA and then a few of the others, the Daytona MPA, the Fernandina MPA, and then you move into those percent observations or positive observations per gear sample, the POGS. I have fishery-independent and fishery-dependent plotted on this graphic.

You can see the Oculina Experimental Closed Area has a really high fishery-independent positive observation per gear sample. Northern South Carolina has pretty high fishery dependent. Then moving up into the proposed ones we've got Devil's Hole 2, relatively high; the Mid-South Carolina MPA, the Edisto Reconfiguration 3, and then the North Cape Lookout MPA and South Cape Lookout MPA have relatively high ones as well.

This is the table for speckled hind; this is a table in the document. It is Table 9 in the document, Table 9A for speckled hind. My vision basically for the council is as they're considering MPAs what they could do is look through this with the various fields, the percent observations per gear sample fishery dependent and fishery independent.

The total number of point observations within the MPA, the actual area of the MPA, the percent of known area, known and probable area, and then the percent of the stock based on the quantitative habitat suitability analysis in the MPA – and I've color-coded this to try to rank it so that it jumps out at you as to which is highest.

Basically you'd be trying to weight these various datasets or various analyses to come to a determination as to how efficient the MPA is for the protection of speckled hind. Moving on

into Warsaw grouper; we are walking through these MPAs again. You can see this is the percent known and probable habitat in the MPA. You've got a really high ranking for the existing Oculina Experimental Closed Area; Daytona MPA, Fernandina MPA, the reconfiguration of the Georgia, Edisto 3 and St. Simons.

For the estimated stock in the MPA, again the North Florida MPA is pretty high, then Daytona, Fernandina, the Georgia Reconfiguration and the St. Simons. Then for Warsaw grouper those percent observations per gear samples, the St. Augustine MPA has a really high fishery-dependent percent observations per gear sample.

Then there is the table for Warsaw grouper. Again, you've got your existing MPAs at the top in sentence case; your proposed in all caps towards the bottom; the area, the number of point observations within each; the fishery-independent percent observations per gear sample; fishery-dependent percent observations per gear sample; the percent of known and known and probable habitats; and then the percent of stock based on the quantitative habitat suitability analysis.

But that is only one part of the story, right? We want these MPAs to be efficient, but we'd also like them to not adversely affect our fishermen as best as possible. The next thing to look at was the impacts on associated stocks. We looked at species associations with speckled hind and Warsaw grouper using a variety of techniques, percent co-occurrence, hierarchal cluster analysis, and dimension reduction analysis.

I've gone through those with you guys on a few different occasions. After determining which stocks were associated, we overlaid the proposed MPAs on the highest resolution we could force the commercial data into, which was about one degree tall by five fathom wide, because they do report depth.

Then onto the highest resolution we could get the recreational data, too, which was from the headboat, which are 1/6 by 1/6, or 1/36 overall degree squares. We looked at the mean landings from '09 through 2011 within those highest resolution areas; overlaid an MPA on top of it and computed the potential reduction in landings for the MPA as the percent of landings, the mean percent of landings from 2009 through 2011 times the ratio of area between – so if you've got this overlaid square, the percent that is within the MPA relative to the percent that is within the total area within that area.

I've got a picture of this that is a little bit easier to explain. The assumptions behind this analysis would be that the landings are uniformly distributed within the highest resolution that we could get those landings into. Obviously, if the MPA is sitting over the one piece of habitat within that area, then probably it will have a bigger effect than predicted by this analysis.

Conversely, if the MPA is sitting over an area where that associated stock doesn't really occur, then there could be no impact. The historical locations would have to be predictive of future fishing pressure. We do tend to use that approach a lot. Obviously, fishermen do change their behaviors; stocks do change where they are located.

We also are assuming here that there is no effort shifting. If you have an MPA implemented, basically the fishermen just don't fish anymore in that spot and they don't redistribute that pressure elsewhere for that associated stock. With regards to the associated stocks, you can see

some of them here. These are the various hierarchical cluster analyses and dimension reduction analyses that I've gone through with you guys a few times.

These are the percent co-occurrence, so there are a few species like red porgy, scamp, vermilion snapper, greater amberjack, gray triggerfish that tend to show up all the time. Those are the ones we focused our efforts on and gag and red grouper. As an example of how we looked at these cumulative impacts – and I'm sorry it looks like the presentation is cutting it off a little bit, but this is the possible impacts on gag harvest.

You can see here this is the map of the commercial average landings. It is color-coded basically using the percent of average landings within an area, and I color-coded it based on the standard deviation from the mean percent of landings within a reported area. You can see there are a couple of hotspots within this one degree tall by five fathom wide grids.

Down here is the headboat data at the bottom right and you can see how that reports to those 136 of a degree cells, and you've got some hot zones and some cold zones and some no observation zones. Then basically what you're looking at is you're overlaying an MPA. If you look at the lower left corner, you're overlaying an MPA over the top of these percent landing zones and you are slicing those areas and determining what amount of the area of, say, this yellow zone here is within this MPA.

The ratio of those areas, the area in the MPA versus the ratio of the whole area is the impact of the MPA potentially upon the stock. Looking at this table, which is Table 10 in the document; these are the potential reduced landings for the associated species. We've got red porgy, vermilion, scamp, greater amberjack, blueline tilefish, gag and red grouper.

I have it broken down into commercial and headboat with a reminder for you of the name of the MPA, the area of the MPA and the state that it occurs off of. You can see the total impacts here. If you picked all of the non-overlapping MPAs in the South Atlantic, the impacts range from about 8 percent for headboat scamp down to 0.7 percent for headboat blueline tilefish.

There is a range here and on average basically for a single stock, probably about a 3 percent impact is what we're looking at assuming that fishermen can't redistribute their fishing pressure. Now these MPAs are relatively large if they were in your backyard, but over the entire South Atlantic Shelf they are a relatively small area.

Given that a lot of these fisheries are currently constrained by ACLs, it might be realistic to assume that there could be at least some sort of effort redistribution to compensate for these closed areas. Another way of looking at that table, which I realize is pretty hard to look at, this is color-coded, the possible reduction in harvest by the various MPAs broken out by species.

You can see, for example, cumulatively the St. Simons MPA has a pretty high impact, and then for certain species like for vermilion and scamp it is pretty high; Georgetown Hole for scamp relatively high; Daytona relatively high for greater amberjack. This gives you a sense of how that breaks down and how it impacts the various fisheries assuming that there is no effort redistribution. Then for headboat a similar story, slightly less impacts, not a lot of observations in some of these areas; Georgetown Hole, for example, relatively high for scamp; Devil's Hole 2, which is in the same area, also relatively high for scamp and for gag.

One of the things that would be a question to pose to you guys would be what do you think about the headboat possible reductions as a proxy for recreational impacts? Obviously, I think my own take on it would be that some recreational fisheries do overlap with regards to how private and for-hire fishing pressure is geographically distributed as compared to headboat. For other species, I think there is probably a distinction.

Some of that is driven just off the fact that the headboats are located in some areas whereas private pressure is located in others. One of the things that we are forced to do due to the lack of resolution with the recreational MRFSS and MRIP surveys, sometimes when we're forced into these geographic questions we have to use headboat as a proxy to predict the overall recreational impacts.

I was hoping that you guys would at least discuss that a little big when I finish, because I think that would be a useful discussion to have on record for the council. Moving on, I think one of the questions is what level of protection is needed. Looking at a meta-analysis of a variety of MPA studies, you see recommendations typically falling within the 20 percent or 50 percent range of closures with some going on the fringes of that distribution.

But obviously there is no one-size-fits-all answer. It really depends on both the stock status, the objectives of what you are trying to achieve, the ability to enforce the MPA and then the fishery regulations outside the MPA as well. With regards to MPA impacts, I think there are a few things that we can say.

If the stock is uniformly distributed, then if you close 20 percent of the area you should protect 20 percent of the stock. Now I think we all know that stocks are not uniformly distributed; they are heterogeneously distributed. If we 20 percent close selective areas, we should be protecting greater than 20 percent of the stock.

That is what I've tried to get at with these various habitat suitability analyses. From a meta-analysis, it seems apparent that these are heterogeneously distributed, hard bottom associated stocks. Their release mortality is likely the highest and probably greater than 50 percent outside of 25 fathoms. We have some data supporting the fact that they are mature beyond 25 fathoms, and that most of the spawning occurs between 25 and 100 fathoms.

If you close some habitat areas with higher concentrations of the stocks, you should protect a greater percentage of the stocks than the amount of habitat that you've closed. For selection criteria, we have provided a variety of them. We've got the fishery-dependent and fishery-independent observations per gear sample.

We have the model percent stock with the quantitative habitat suitability analysis. We've got the percentage of known and probable habitats that are covered with that qualitative habitat suitability analysis. We've looked at the predicted impacts upon associated stocks, and we've mapped out the known spawning locations relative to the MPAs.

I think although a lot of these analyses have their limitations due to especially the data limitations and geographic issues with the sampling, overall we've got a pretty comprehensive picture of at least relative efficiencies for various MPAs. I would not say that any of the numbers provided are absolutes and that we definitely are protecting X percent of a stock, but I

think it is useful in a relativistic sense when comparing amongst different MPA alternatives this is probably relatively informative.

With regards to the most effective MPAs, some of these MPAs do provide better protections for speckled hind, others provide better protections for Warsaw grouper, and there are some that are relatively good at protecting both. In terms of the best MPAs for both stocks, I've got a list of eight here. In terms of other good MPAs for speckled hind, I've got a list of three; and then other good MPAs for Warsaw grouper, another list of three.

With regards to keys for success for marine protected areas, I think public support is critical. The South Atlantic Council has done an excellent job of that so far. They are getting the public involved in the MPA selection process; and in terms of soliciting areas where they think these MPAs might be appropriately located, I think it is important to have quantitative measures of performance.

We need baseline measures of the habitat within a reserve prior to implementation and the stock condition inside and outside of the reserve. We are going to need some information on space, use and movements. We are going to want some follow-up monitoring and simulation modeling so that we can model what the impacts of these MPAs are on the status of the stock and the condition of it.

With regards to enforcement, it is going to need to be adequate. We are going to need simple regulations that people can follow. We are going to probably need mandatory VMS to keep people out. We can also look at some passive listening devices that listen for vessel noise and let you know whether there is a lot of vessel activity in the reserve when you don't have an enforcement presence out there so that you know whether you need to get out there with your enforcement vessels.

With regards to adaptive management, I think the boundaries and numbers of MPAs could be modified through time especially as we collect new information. We should also try to collect data for a new stock assessment, because that basically is going to tell you whether these MPAs are working. With that, I am open for questions and discussion. If you need me to go back to any of the slides or pull up anything from the report, I am happy to do so.

DR. BARBIERI: Thank you, Nick, for this very thorough analysis and great presentation. Are there any questions for Nick? Marcel.

DR. REICHERT: Yes, that was a very impressive analysis, so thank you. Have you had a chance to – every time you change MPAs you not only affect the species that you are looking at but other species also. We've had some of these MPAs in place for a couple of years. If we change them, we may impact other species. Have you had a chance to look at that? I know that is a pretty extensive analysis to look at that, but have you had a chance to look at that and see how that potentially may affect some of the other species that are important?

DR. FARMER: With regards to that, we looked only really at the associated stocks with speckled hind and Warsaw grouper. Certainly, one of the reservations I have with reconfiguring existing MPAs is that for the most part the deeper ledge end of those MPAs is poorly or not studied at all.

It is hard to say what really is going out there and even really what the bottom type is out there. It may be, yes, that those are important refuges. It might even be that those are important for speckled hind and Warsaw grouper on those deep edges. We do have the Deepwater ROV Surveys that have been conducted in and around those MPAs.

Although they were relatively restricted in their depth range, I don't think that they covered the deepest end of those MPAs. I imagine if we talked with Andy David maybe he could put together a presentation that would outline a little bit of what they've seen in there with regards to – he has basically got kind of a CPUE metric I think for observations of various fish species.

Yes, that could be something that we could look at, because it could be, yes, that those are serving as important refuges for other things. We would have to also look at the rationale behind the implementation of them in the areas that they are implemented in right now. For example, the Georgia MPA was I think mostly for golden tilefish.

Golden tilefish seems to be doing well right now. I've heard arguments that, well, we probably could move the Georgia MPA because golden tilefish is doing well so it might not be necessary. But then that begs the question, well, is it doing well in part because of the Georgia MPA. I think that sort of information is hard to tease out with a more elaborate analysis.

DR. GRIMES: I just also wanted to say that was a lot of work and I realize that and it is very nice, very thorough. I think that we appreciate it. I have a small question. Does the assumption that fishermen can't or won't redistribute their effort tend to slightly exaggerate the impact of the MPAs and how much, if it does?

DR. FARMER: Yes, I guess that almost is a question for the public comment as the MPAs would be proposed; because as you are looking at these things, I imagine in certain areas, with certain MPAs that are proposed here, it would be relatively easy to redistribute your fishing pressure either because the MPA is relatively small or because that is not an area that is kind of anyone's honey hole.

But there might be some other ones, for example, like the Daytona MPA. Maybe that is coming right out of an inlet and that is where everybody likes to fish and it is relatively big, so maybe it is hard to get around the sides of that and really make up for it. Another question I think also is you've got different scales of impacts. You've got a local impact.

Anytime you put in an MPA, it is going to make somebody upset who fishes in that area. But when you are looking at the South Atlantic as a whole, which is one of the things the council has to do, you have to ask yourself, all right, we've got an ACL for this stock; are the fishermen going to be able to go out cumulatively across the South Atlantic and make up for that reduction of landings in that one zone by intensifying their pressure elsewhere?

Especially for things that are ACL managed where the ACL has been exceeded in season previously, it seems like just by fishing somewhere else they could probably hit their ACL. In a way, also if the core habitat for whatever they are fishing for is only in the MPA, then this might actually underestimate the impact locally. Whereas, if the core habitat is outside; this might grossly estimate it. It is the best approach I could come up with but it has its limitations. I think it is kind of like a bookend.

If you look at the various maps that I put together of the associated stocks in the document, which I think start around Figure 59 and go on, you can look at where those stocks are caught relative to the MPA locations, and you can see that the MPAs – even in this gag image here, you can see the MPAs are basically on the fringes of the fished distribution. There is a lot of area inside of that and in other places where there is fishing activity occurring.

I guess the question is can those people in other areas or those inshore areas make up for the small area that is covered by the MPA? I would suspect in most instances the answer is probably yes. In certain select cases the answer may be no. I think that public comment will let us know a lot about that.

DR. BOREMAN: Churchill asked my question, because I think that this redistribution of effort is the soft underbelly of this whole analysis, as elegant as it is. The value I think is, as you said, the relative comparison of what if we close this group versus that group or whatever. Also, the size of the individual MPAs; the bigger they are the more likely you will not get a redistribution of effort.

Then it goes back to the issue is the MPA there to protect spawning or is it there to reduce exploitation on the species? It is two objectives, and I think here the main objective would be to protect the spawning as opposed to trying to reduce the fishing mortality on the stock. I think unless you come up with some research that shows how effort would be redistributed out there, that is a big unknown.

DR. FARMER: I guess to that point, I think the council – and I obviously don't want to speak for them, but I would suspect that their objectives would be on both those counts, because the stocks are currently listed as undergoing overfishing by NMFS. I know that the SSC has had substantial debate on that and whether that actually is something that might still be occurring.

But in the absence of an updated assessment, that is the status determination for them. Reducing fishing pressure certainly would be an objective of an MPA, but, yes, I think a big goal of any protected area is to promote an increased spawning population and increase sustainability for a stock.

That is why in all these maps I've tried to show there is very limited information out there about where these things spawn. You can see I got probably ten points on a map over a 40, 50 year period of spawning locations. I doubt that those are all their spawning locations, and I wonder whether they are current spawning locations or not.

We've seen things like with Nassau grouper out in the Bahamas where they have been fished down so much that they've lost their links to a lot of their spawning locations, historical spawning aggregation sites, because the older fish that used to lead the younger ones out there basically aren't around anymore. I don't know if that is occurring in the South Atlantic or not. I think very little is known about the reproduction of these stocks.

DR. BUCKEL: Nick, as you know with the MPA literature, one of the things that will lead to the effectiveness is how much the fish move. Do we know anything about movement of speckled hind and Warsaw grouper and if they are high movement rates and they are just going

to move out of these reserves and get caught, anyway. They wouldn't be effective, or maybe you need to go to these larger ones where their movements would fall within that larger MPA.

DR. FARMER: Yes, and I've got a brief summary of that in my discussion in the report, basically using some proxy species, including some that I'd studied out in the Dry Tortugas and done a MEPs paper on home range movements for like black grouper and red grouper. Anecdotally, from what I've heard, Warsaw groupers seem to be relatively site faithful.

Similar to a Goliath grouper, you go and dive a wreck and it's there and you go dive that wreck next year and it's there. It's always there. With regards to speckled hind, I am not quite as sure. I think both of these stocks are suspected to be, and in certain instances I think documented to be ontogenetic migrators, so I think the juveniles are inshore the adults are moving offshore.

If you look at the graphic that I have at the end here of mature fish, here is your size at maturity, your L50 the red line and then minimum length at maturity for Warsaw grouper. Here you can see that you've got kind of non-mature fish inshore and then more mature fish offshore. That seems to support the idea that they do have an ontogenetic migration; but once they get out there in that deeper water and settle, I'm not entirely sure what they do.

Obviously, that would be something and one of the things that I had recommended as a followup would be the space, use and movements for these fish. In order to assess reserve performance, that will be critical. Now, even if they are the type of stock, like we have certain stocks where they will use a home range for a certain period of time and then they will move to another location, use a home range there, sometimes they move back, sometimes they don't; but if they are protected for a period of time, it is affording an additional degree of protection for them.

These MPAs are relatively large relative to the scale of movements for proxy species that I looked at. I think there would be some effectiveness there. Whether it would hit those actual percentages that I have listed in the tables would really depend on a variety of factors, including the movements, the enforceability of the MPAs and other things, and then obviously how accurate the analysis was to begin with in creating that number right.

DR. GRIMES: On your slide up there, you have under adaptive management boundaries and the number of MPAs can be modified, I know you already know this, but there are a couple of other variables of using that analysis might be circulation modeling, use ROMS of modeling to predict retentive circulation where it already might accumulate and the sea floor mapping, and we've talked about this. Do you know of some other things that you are interested in and pursuing that might enhance it and improve it?

DR. FARMER: I think the habitat mapping really is the key. The circulation stuff I think is important, but really these are pretty heavily benthic-associated fish and the habitat doesn't tend to change as dynamically as the current unless somebody is coming through and plowing it. But we've got some really great mapping, like off the Florida MPA.

Andy David's group has put together a very nice map of where the rock hard bottom habitat is, and there is not really any suitable habitat on the fringes of it, so if we could get that kind of mapping elsewhere. One of the things I found in my own study of fish movements and MPAs is that they were far more likely to move across an MPA boundary, because fish obviously don't

care where you drew a boundary on a map. What they care about is where their habitat is. They are far more likely to move across that boundary if the boundary is overlapping contiguous reef, if it is overlying it.

If you have a reef habitat within one of these proposed MPAs and there are some natural boundaries around it, you would want to adjust your MPA boundary probably to reduce the spillover by encompassing that natural habitat feature. That is kind of a first blush of refining the MPA boundaries.

When you are talking long term, if you are talking five, ten, multi-decadal modifications, then I think changes in circulation patterns; and certainly if you are able to identify using circulation models where a source habitat might be and you find a spawning aggregation, then, yes, you are really honing into a way of refining it to rebuild the stock. If you can protect the spawning habitat and then you can also predict the recruiting habitat, then you are creating links that are going to promote a rebuilding.

DR. SEDBERRY: Nick, you mentioned that the reorientation of the Georgia MPA might have an effect on golden tilefish or it was designed for golden tilefish and moving it would lose that protection for golden tilefish. I also think that the Northern South Carolina MPA, the existing one in its orientation, and the one off of Florida also provide some protection to blueline tilefish and golden tilefish respectively. I was wondering if you had done an analysis of the reorientation of these MPAs to see what would be lost; in addition to what would be gained for these two grouper species, what would be lost for other species.

DR. FARMER: I think the reorientation is evaluated in the tables for blueline tilefish especially. I didn't look at golden tilefish but I could. From what I've seen for blueline, especially from '05 onward where the commercial fishermen have been reporting depth and area, it is really refined where they are fishing; like 98 percent of the catch is coming from a swath that is not covered by any of these MPAs. I'm not as concerned about blueline refuge with regards to these MPAs. There definitely is an area where they are getting harvested and that is the bulk of the commercial harvest by far.

MS. LANGE: Just a followup to George's question; there was quite a bit of effort that went into the designation of the original MPAs. Did you make any specific comparisons to what those were designed to protect relative to what speckled hind and – I mean, you are focusing on those two species, so did you do anything specific to what the intent of the original ones were?

DR. FARMER: Yes, I read through the documentation that is available on the South Atlantic Council Website with regards to the deepwater MPAs and some of their intents, and I would suspect that the South Atlantic Council staff will probably be able to discuss that, as well as the council themselves – many of the members were there when those were implemented – with regards to the rationale for protection, and hopefully request some additional analyses from us with regards to some of the stocks that were stocks of concern.

I didn't have access to all the deliberations that went through. That was before my time, and I'd asked for them a couple of times, and I think we're going to get there with regards to that. At this point there are not actual alternatives in a document. Those will be emerging in December. I think once that happens, when we have a set of alternatives and actions in an amendment, that

is when we start to get really refined on our analyses with regards to the impacts. That will certainly be a key point of discussion in there.

DR. BARBIERI: I think Gregg has some comments regarding that issue.

MR. WAUGH: Just to clarify in terms of timing, we don't know what the council is going to do as far as developing alternatives in December, and I just want to make sure everybody is clear. What has been asked for is a presentation on reorienting existing MPAs; not this presentation but a subset of this. Then the council is going to determine what our next steps are.

I did have one question. Your depth range goes out to 100 fathoms. What is the justification for going out that deep when we got rid of the 240 closure because deeper than – and I think that is about 40 fathoms – that deeper than 40 fathoms didn't do anything for speckled hind and Warsaw.

DR. FARMER: I'll have to be cautious with my wording on that, but with the 240 Fathom Closure, the analysis indicated that the probability of observing a speckled hind or Warsaw grouper was higher outside of 240 fathoms – or, sorry, 240 feet relative to inside. But it also indicated that the vast majority of the fishing pressure, which would result in bycatch mortality of the species, was inside of 240 feet.

There is a tradeoff there. If you want to go find one, go look outside of 240; but if you want to keep them from being bycatch, then you need to also look inside of 240, because that is where the vast majority of them are actually being by caught, because the fishing pressure is like ten times higher in there.

If your probability is half but your pressure is ten times higher, you obviously have more actual individuals being encountered inside of 240. Also, the 240 Fathom Closure was across the entire South Atlantic; whereas, we have shown that there are areas far more refined where these things are actually located.

This is a refinement of that process and it deals with the entire swath of the vulnerable mature stock. With regards to 100 fathoms, initially I wasn't looking that deep and then I go some data from the South Carolina DNR with observed spawning condition Warsaw grouper in 90 fathoms of water.

Those are the only observations of a spawning condition Warsaw grouper that I am aware of in the South Atlantic. If they are in spawning condition, that means they are within probably a day of spawning was what I was told. If that is a fact and if they are not moving too far from that point to when they spawn, I think it is important that we consider out to that depth when we are looking at protecting these fish, because we don't want to miss the spawners. If we're talking about rebuilding the stock, that is going to be one of the main drivers.

DR. CADRIN: Thanks for the presentation, there is a lot of information there, it is well done. Just to let you know and put it on your radar screen for your analysis, Europe has a major initiative going on right now to mitigate bycatch and discards for depleted and threatened stocks. We just had an ICES theme session last month with a focus on mitigation strategies. Through dozens of evaluations, with very few exceptions the published evaluations of time area closures

were not effective for reducing bycatch. Gulf of Maine harbor porpoise, John may know more about scup in the squid fishery, New Zealand sea lions; cases where it was designed, similar spatial analysis, and it just didn't have the effect of reducing the bycatch.

Most of them had unanticipated negative effects because of this displaced effort. From my perspective coming down here and still being fairly new to the South Atlantic, the species diversity and complex fisheries interactions are still overwhelming to me. I would think that especially in this area, the effect of displaced effort on these species and other species really should be part of the evaluation, and we'd be missing something and potentially causing more harm by doing some things.

DR. FARMER: I guess to speak to that theme, we do have some documented successes from MPAs with regards to rebuilding species. Especially the Tortugas five-year annual report was recently released and that seems to show pretty compellingly some rebuilding with regards to increased biomasses both within the MPAs and then spilling over increased biomass and density outside of the MPAs, increased length in the exploited phase for a variety of exploited stocks.

Then you get a lot of feedback mechanisms in the unexploited stocks where some of them are going up and some are going down, potentially mediated by those recoveries of the larger predatory species. I think that an MPA as a tool for rebuilding a stock can be a relatively effective tool if it is located in the appropriate place.

With regards to impacts on other species, assuming that we have our ACLs correct, then if the fishery is hitting an ACL for one of these other stocks with this displaced effort, then that fishery is going to be closed. If that ACL is appropriately specified to end overfishing of that stock or ensure that overfishing is not occurring, I guess is the appropriate language there, then I don't think that there would be a risk there unless you are displacing effort into a place where you are adversely impacting some component of that stock that is more important than the one that was being impacted earlier.

For example, if you put in an MPA and all the fishing pressure shifts onto a spawning aggregation of something else, then, yes, you could have a big impact and that could be certainly an unanticipated impact. That will be one of those things that we are going to need a lot of public comment on and we are going to need some very creative requests for analyses to come up with.

DR. CADRIN: Just as a little more house cleaning; in the meta-analysis, first of all some of those aren't in the literature cited. The literature cited doesn't include all of the references in your figure for the meta-analysis. Not all of those figures are relevant directly to closed areas. Mason-Sissenwine '93, Goodyear '93, those are percent maximum spawning potential papers.

If you were to use those to say that 40 percent needs to be closed, the implication there would be you would have complete fishing outside of it; that that would be the only survival would be that 30 percent. I would probably go through those references, because not all of them are relevant to closed areas. If they are, then there are some important assumptions about the open area of fishing effort.

DR. FARMER: This meta-analysis is basically an updating of a similar meta-analysis that was presented by the National Research Council 2000 Report, and so a lot of that is coming out of there. We can do some additional cleanup there.

DR. CADRIN: So they got it wrong; you can't believe NRC.

DR. BARBIERI: Well, back to a point that Steve made earlier – and this is not really a question, it is just a comment in general for the committee. I think one of the challenges that we face here with this issue is the fact that we are dealing primarily – this is the difference I think – that we're dealing primarily with a bycatch mortality issue.

Most of the studies and most of the evaluations that have been made for MPAs, the effectiveness of MPAs in terms of conservation in fisheries management have been directed at – have been focused on directed effort. In our case it is a little bit of a curve ball and I think presents an additional challenge for us to evaluate.

You remember that there are unintended consequences in reconfiguring this. George and Marcel brought up this issue of what are we losing in terms of the original intent of the MPAs? I think your analysis is very thorough and very informative. I think we still face some challenges and will continue facing those challenges in trying to get a grip here on what these potential MPAs would be accomplishing in terms of that affording the protection that they are supposed to afford.

Now, unless we have any additional questions for Nick, he asked us a question or asked for our comments and guidance perhaps on the use of headboat data as a proxy for the private recreational sector. Would anybody have a comment? Well, it's not ideal, but in this situation it might be the only option really available. Would this raise any major concerns with anybody?

DR. BOREMAN: Are there data that track headboat and private to show that they do correspond; and if there are, I don't see an issue using it?

DR. FARMER: For the private guys you've basically got the MRIP data, so the finest you can get it in terms of spatial –

DR. BOREMAN: It's the finest anyone can get.

DR. FARMER: Yes, well, we're going to do better. It is going to get better. I'm actually working with FWC right now to develop some better mapping tools for recreational fishing pressure so we can get at this issue as this becomes more of a question. Basically the issue we run into is with the private guys and the for-hire guys surveyed by MRIP, you can get it state and then distance from shore; less than or beyond the state water line, and that is it.

You are relatively limited in your precision. Certainly, in looking at this map, we are looking at far more refined areas than state versus federal water off the coast of a state when we are talking about these MPAs, and they are much smaller than a state. I guess for red snapper, way back in the days of Amendment 17 we did end up having to use headboat as a proxy for recreational private and for-hire fishing pressure. It has got a lot of caveats. I think that there are some places that the headboats launch out of that you don't have a lot of private recreational guys or for-hire guys launching out of and vice versa, so it does have its limitations.

I guess the question is – I think it is probably the best we have; is it even useful would be kind of the question for this? I suspect the council is going to want to look at – if they are going to want to look at implementing an MPA or reconfiguring an existing MPA, they are going to want to look at the minimum adverse consequences. We have no real effective way of saying how it is impacting a private or for-hire recreational guy other than saying, well, the headboat says this; and assuming that is a reasonable proxy, that is the impact.

DR. BUCKEL: I guess in terms of the magnitude, the catch-per-unit effort on the headboat is going to be higher, would be my guess, than private recreational just because the headboat captains are going a lot more and they've got more spots to choose from. Particularly if they are targeting something that is going down in abundance, they are going to have more places to go compared to a private. I think you would need to have a scalar to correct downward that private recreational catch-per-unit effort if you are using the headboat sum.

DR. FARMER: I don't think that CPUE would make a big difference in this, because we are really just looking at geographic location, and then as a percentage of the total harvest. Although they might be catching 10 percent – for some stocks that might be true for others it is probably not. Like white grunt, I think headboat slays them whereas red snapper in the Gulf I think the private guys do a really nice job getting those.

If you are looking at just a percent of the total harvest over a geographic region, then your CPUE won't really factor into it. What is going to be important is where it fits in a relativistic sense geographically to the rest of the fishing pressure. I think the geographic question with regards to intensity in a location is going to be the only real concern.

I'm suspecting that public comment will give us a little bit of information on that and probably we could also make a map of headboat ports versus private recreational marinas or something like that, if we really had that data, or that we can have our state DNR representatives provide us some of their information, because I suspect they know a lot more about the relative impacts coming out of different inlets from those two different sources than we do.

DR. BOREMAN: As you were talking I was thinking about the first series of interactions we had on redistribution of effort. Perhaps one way to address that, to discourage redistribution of effort, is an issue we've run into in the Mid-Atlantic and New England has run into it with scallops and so on, is when the assessment is done, only base your ABCs on only the areas that are open to fishing and not closed areas.

You only base it on that portion of stock and not in the MPAs. That would reduce the fishing mortality outside the MPAs; because right now like in the Mid-Atlantic, I don't know if it's surf clams or quahogs, one of those species, the assessment is including the closed areas as part of the assessment; so when they calculate an FMSY, basically the fishery could be overfishing outside the closed area, but the closed area is big enough that it all balances out and the FMSY is not exceeded. Maybe the way to handle it is how these stocks are assessed when these closed areas go into effect.

DR. BUCKEL: I had a couple notes from reading through this earlier that I forgot to mention, and one hits on what John was just talking about. We've had MPAs already closed or areas already closed, the current MPAs, and so has there been any effort to look at the before closure

and then whatever time has expired since those start dates to see some of the metrics for speckled hind and Warsaw, the catches or the ROV sighting numbers have gone up or the sizes have increased to suggest that, yes, these things are effective for these two species?

DR. FARMER: I guess for most of the MPAs that are out there, with regards to the longevity of the species I wouldn't expect to see any biomass changes yet. For the eight deepwater MPAs the South Atlantic recently implemented, we do have Andy David's group doing all those deepwater ROV surveys, and they do look at density, inside and outside the MPA.

But I think speckled hind and Warsaw grouper are still so rarely encountered that you wouldn't be able to determine a statistically valid change between those. That will be either you'll have to have a larger increase in density than you've seen so far or further refinements of their survey technique to reduce the CV around it.

Now in the Dry Tortugas, which is a place I'm a bit more familiar with, we've got ten-plus years of MPA protection in the Tortugas Ecological Reserves, and we've got about four or five years in the National Park Service's Research Natural Area, and you do see statistically significant increases.

There are a couple of papers that I think I cite in this document with regards to that for a variety of exploited stocks. That's kind of in my mind the way that we would want to approach this issue is if the council does want to move forward with implementing something, I think one of the key recommendations is we need to get out there and get a nice baseline, a year of density survey data or at least a nice snapshot that we can then use to track the buildup in biomass over time of those stocks.

Obviously, if that type of survey went out there and looked and didn't see any, that would also be something that would be certainly worthy of discussion, because a lot of this data is relatively old. If they are no longer there, yes, if you protect the habitat, there is a possibility they might come back, but that presupposes that you have a supply of recruits that will be delivered to that site.

DR. BUCKEL: Then the other comment is in ecological literature there is a big boon in the use of occupancy models where you are estimating the proportion of sites occupied and along with that the probability of detection, so the probability of detection in the ecological literature has a specific definition. You used probability of detection, that terminology here with the logistic model, and I just wondered if you felt that that was analogous to what are in these occupancy models or if that is just a wording you chose.

DR. FARMER: I'm not super familiar with the occupancy models. I had a brief discussion when we very first started this work with Christina Schobernd up at the Beaufort lab, who I think has a bit more familiarity with those, but we haven't had a chance to pursue that yet. I think that the general idea behind why I called it probability of detection was it's a probability of that gear detecting the stock.

Once you control for the gear effect, using the logistic model and pulling gear out of the equation and explicitly solving for each of those habitat area grids, then it becomes in my mind a

probability of occurrence, so that a gear effect is removed. Then it might be somewhat analogous at that point to an occupancy model.

DR. BARBIERI: Are there any other questions or comments for Nick? If not, I'm going to ask, Steve, if you would, just put together a very, very short , very, very brief paragraph, perhaps pointing us to that working group, the ICES working group, because that might be a valuable resource for us to refer to, and it will be nice to have that cited in our report, please. Thank you, Nick, great presentation and discussion. We're going to take a break. Let's reconvene at 10:30.

DR. BARBIERI: It is time for us to reconvene. We are going to address our next order of business, which is Snapper Grouper Regulatory Amendment 13. I think we are going to start with a brief introduction by Brian Cheuvront and then follow up with another presentation from Nick.

DR. CHEUVRONT: Thank you, Mr. Chairman. I also wanted to make sure that probably after – well, you all can decide when you want to do it, but at some point the SEP talked about Regulatory Amendment 13, so you might want to get what they had to say on the record as well. Regulatory Amendment 13 is something that the council decided at its September meeting that they wanted to have the document put together and ready to vote on to send to the secretary at their December meeting. This is a very, very quick process we have going here.

What this amendment is about is updating the ABCs, ACLs, Sector ACLs and allocations for 37 unassessed snapper grouper species. These numbers had been set previously in the Comprehensive ACL Amendment, but as you all know there has been updates to the recreational numbers by the application of the MRIP numbers from I think it is 2004 through 2008.

There have been some updates that have been done also to some of the commercial landings numbers. This has necessitated another amendment to implement these. Now this kind of needs to be done largely because MRFSS is no longer being done. To avoid the problem of comparing MRIP-based landings to MRFSS, the numbers needed to be adjusted.

That is kind of where we are with this. This amendment has one action in it, either to update the numbers or not to update the numbers; that's it. I know Nick has done a tremendous amount of work over the last several weeks, after we had gotten the numbers from the Science Center. I think at this point it is probably appropriate for Nick to talk about how they got to the point where the numbers evolved from what was in the ACL Amendment to what is being proposed in Regulation Amendment 13.

DR. FARMER: We're talking here about the acceptable biological catch for South Atlantic snapper grouper. Previously we had calculated ABCs for 37 unassessed species. There were also ABCs for a variety of assessed species and other things like that, but this regulatory amendment in particular is going to deal with the stocks that are unassessed, where there is the least amount of decision-making that needs to be done.

Now, 20 of those ABCs were not actually assigned by the SSC. They were assigned using a proxy method due to the late council decision to retain many of the snapper grouper stocks in the FMU. The SSC I think had recommended the third highest landings for stocks that were

following a certain trend, and that was used to set those ABCs in order to get the ACLs for the ACL amendment so it could pass in time for the statutory mandate.

In looking at revamping those ABCs to correspond with the best available scientific information, we've developed this presentation and it's going to show you the ABCs and the landings trends from three different data-meta sources. The first of the data-meta sources is the comprehensive ACL data, and that basically is the data that you've seen before.

This was from 15 of September 2010 recreational ACL data, which was prepared by the Southeast Fisheries Science Center and on eighth of October 2010 commercial ACL data. The shore mode we've discussed with the SSC. Initially it looked like the shore mode was omitted from the recreational catch. We've since spent a ton of time digging and going back through all these various datasets. I think I summarized this dataset about 25 times or something in the span of about two years.

It turns out in this one particular summary shore mode had been inadvertently coded to get lumped in with for-hire landings. When we were looking at the private landings, we were like, man, the shore mode was omitted. It turns out that it was actually in the total recreational landings, and the council never looked at any recreational sector separation.

There is no actual impact on the ABC due to that inadvertent coding error. The recreational total at that time was correct. That is the first of the data sources that we look at here. Then we have a new MRFSS and new commercial data source. This is from a 30 August, 2012 recreational ACL data.

We include this to show you basically to provide that jumping point between the best available MRFSS and commercial data to the best available MRIP and commercial data. This is the MRFSS data at its current state of evolution with an updated wake backfill procedure. Basically what that means is the MRFSS data periodically will have a number of fish greater than zero in a particular stratum, and there will be no weight assigned to those fish.

When you do a summary in pounds, you will have, say, ten fish or something and zero pounds for those ten fish. The Science Center has developed an iterative backfill method with a set of rules, that is a hierarchical set of rules, on how to assign average weights to those when there is no average weight available.

They also have a revamped charter calibration for the early years of the charter mode, which was presented in SEDAR 25, so it is in the data workshop report. I'm not going to talk about it here, because I don't know much about it, but it was approved by the SEDAR process and it is the newest way of dealing with the older charter data.

The third of July 2012 commercial ACL data is basically identical to the eighth of October 2010 commercial ACL data, only it has a few additional years and it has a little additional QA-QC. Sometimes with those commercial records they do go back and look for duplicate records and remove them, because periodically records will be submitted more than one time and get entered into the database. They have a long-term QA-QC thing that they do, quality assurance and quality control thing that they do.

Then the final dataset, which is the dataset that we'd be using to specify the new ABCs, is the new MRIP plus new COM dataset. That is composed of the first of October 2012 recreational ACL data, which includes MRIP numbers, which are actually MRIP re-estimates which were published nationally and they are online and available from 2004 through 2011.

Then we have adjusted basically ratio-estimated MRFSS data from 1981 through 2003. There is a document available that explains this process in detail. That is the SEDAR 31 Data Workshop document for Gulf Red Snapper. It also has a Southeast Fisheries Science Center standardized weight estimation algorithm from 1981 through 2012.

Basically the Science Center, in recognizing that there were these multiple ways that they were getting average weights, so you have these MRIP average weights, you have these MRFSS average weights, and you have the Science Center weight backfilled average weights. It was very hard to keep track of all of them and hard to replicate over and over again as we do these ACL data pulls. Working with their various stock assessment scientists and their data managers and everything else, the Science Center has developed a standardized weight estimation technique to get the MRIP average weights.

The main difference I think between those average weight estimates and those that come from the MRIP Website is that within a particular stratum the retirement is there have to be at least 30 samples, I think is my understanding, of fish with an average weight or a length that can be converted to a weight in order to pull the average weight from that stratum or else they tier outward from that fine scale resolution until they hit a sample size of 30 so that the average weight estimate is more statistically robust.

You guys are probably familiar with instances in looking at MRFSS data in the pas, where you have these massive peaks in MRFSS landings; and then you look at the end and it is like nine fish, right, but those nine fish for whatever reason in 2000 weighed 10 million pounds once you expand them; whereas, in 2001 you had 20 fish and the total weight was less.

You are now trying to become more statistically defensible with your weight estimates. Then that data source also has that same third of July 2012 commercial ACL data. The only difference between the middle and bottom data streams or meta-data sources would be the change in the recreational data.

Now, the MRIP data from 2004 through 2011 basically is implemented based upon recommendations from the National Research Council that the MRFSS survey had a few biases that were not being handled properly in the way they were analyzing their statistical estimates. The goal of MRIP is to provide more detailed, timely, and reliable estimates from the recreational sector.

Currently the official MRIP estimates are available from 2004 through 2011. John was telling us earlier that they may be able to come up with some data-driven re-estimates from 1998 onward and that would possibly be available towards the end of next year. Obviously, we're in a pickle, because we have a lot of ACLs that are specified right now using MRFSS data, and next year we will not have MRFSS data available anymore. We are going to be into MRIP-only recreational data.

The concern is that we may adversely affect either the biological resource or the fishermen by monitoring using one dataset and using an ACL based on another, so we want to bring this back into an apples-to-apples comparison as best we can. Given that these are ratio-estimated MRIP estimates that we are using, it may be a Granny Smith to a red delicious, but it is still apples to apples, right.

The official MRIP estimates are from '04 to 2011, and then we looked at recalibrating MRFSS data or ratio estimating MRFSS data to make it look more like MRIP for the '86 to 2003 time period. In March 2012 there was a SEDAR/MRIP Recalibration Workshop, which resulted in an ad hoc working group that recommended applying ratio estimators based on the ratios of the means to hind-cast catch and variances.

We then developed a Southeast Regional MRIP Recalibration Working Group and developed some additional and more specific recommendations for the region. The primary difference, in fact I think the only difference between the recommendations from the two working groups, is the ad hoc working group recommended just comparing MRIP landings to MRFSS landings at a sub-region stock level.

We decided that it was probably important, given all the interest that we're seeing in the region with regards to sector separation and allocations between different recreational sectors, to get the ratios on a sector-specific basis. We also noted that there are very different ratios between the sectors. For example, the for-hire sector for the most part the ratio is much smaller than for the private rental boat sector. Then the shore mode sector actually seemed to have the largest ratios.

We went through and did this as a mode specific ratio of means, and that basically is described with this equation here. Your ratio estimate is the mean catches from MRIP divided by the mean catches from MRFSS, which is basically the sum of all the years of MRIP catches divided by the sum of all the years of the MRFSS catches.

These ratios were applied at each stratum at their species sub-region year, wave, state, mode and area level, so you've got a larger level ratio estimator that is then applied at the smaller region so that you can then do your more refined data summaries to the A, B1 and B2 estimates and variances.

Then they had some more elaborate variance recomputations, which I am not going to get into here, because they don't impact the ABC computations, but those are available in the SEDAR 31 Data Workshop Report Number 25. Then your MRIP catches are equal to the ratio times the MRFSS catch for each year.

Now we used those recalibrations or those ratios at the stock sub-region and mode level when they were available. There were some instances, especially for the less frequently encountered stocks, where we needed to calculate the ratio at a more condensed hierarchy, so we went from stock sub-region mode to stock and sub-region.

If we still didn't get what we needed, we went to just the stock level. You will notice, for example, these are the MRFSS to MRIP South Atlantic ratio estimators at the stock, sub-region and mode level. You will see that there are some gaps there. Those gaps, where there is no data value, would be filled at the stock sub-region level; and if that were not available, they would be

filled at the stock level. I believe in the Excel document that was posted to the briefing book, those various ratio estimates are in that workbook on one of the last tabs in there.

You can see that a lot of these things are relatively close to one. A ratio of one implies that there is not a big difference between MRFSS and MRIP. There are some where they are larger and you'll notice that there are differences in the ratios between the modes. This is the first set of species. Here is the second set. I won't belabor these points.

I've got a lot of graphs coming up next that will show you more of the differences. With regards to your ABC calculations from previously, you had three basic methods for computing ABCs for unassessed stocks. The first was using median landings from 1999 through 2008. You did that for yellowedge grouper, silk snapper, white grunt and scamp.

You used third highest landings from '99 through 2008 for 32 species, and then you used two times the maximum landings 1986 through 2005 for blueline tilefish. In this report I have calculated the ABCs for each stock individually using combined commercial and recreational annual landings following the method for computing the ABC that you previously recommended.

Then I'll indicate in the tables following where you didn't necessarily recommend that ABC method; it was a proxy method that was selected based on the discussions the SSC had for the species that were currently being considered for ACLs at your meeting prior to the implementation of the ACL amendment or the approval of the ACL amendment.

Here is yellowedge grouper. You can see for the most part the lines are overlapping each other to the point that there is not much difference. There are some differences in certain places. Just walking through, we've got blueline tilefish, silk snapper, misty grouper, sand tilefish, queen snapper, black snapper, blackfin snapper, and here is your table for the deepwater complex.

You can see in the ACL Amendment your ABC aggregate would be 675,908. Once you put in the new MRFSS and commercial data, it goes up to 707,030. The adjustment to MRIP adds an additional 5,000 pounds or so to 711,025. I guess that would be 4,000 pounds. You can see here the species in red at the bottom; so misty grouper, sand tilefish, queen snapper, black snapper and blackfin snapper were assigned using third highest landings based on the ABC proxy method based on SSC recommendations for other stocks.

Now moving into the jacks' complex, we've got almaco jack, banded rudderfish. I'll explain the colors real quick; sorry, I forgot to do that. This is a graph of landings versus year. The blue line, which is on the bottom and hardly visible in most cases, is the Comprehensive ACL Data. It tends to be very tightly overlapped by the new MRFSS and new COM line, which is the red.

Then you'll see some slight deviation, sometimes larger for the new MRIP and new COM line, which is the green. Here is lesser amberjack and here is your jacks' complex. Your ACL Amendment ABC was 455,489. That is changed with the MRIP and new commercial to 457,221, so 2,000 pounds different.

Moving into the snappers' complex, we've got gray snapper here. You can see that there was more of an effect from the recalibration for gray snapper than for most stocks. Moving into lane

snapper, cubera snapper, dog snapper, mahogany; and here is your snappers' complex, so you've gone from about one million pounds to about 0.94 million pounds for the ABC. You have dog snapper and mahogany snapper as proxy species or proxy ABC method as third highest landings.

Here is white grunt, so we're into the grunts complex now; sailors choice, tomtate, margate; and then the grunts' complex, 776,774 previously, moving up to 806,652. You have sailors choice, tomtate and Margate were added at the last minute, so those were assigned using the proxy value of third highest landings '99 to '08.

Red hind, rock hind, yellowmouth grouper, yellowfin grouper, coney, graysby all form the shallow water grouper complex, with yellowmouth, yellowfin, coney and graysby being assigned with the proxy. That went from 97,817 for the ABC to 96,432, so a little over a thousand pounds difference.

Now we're into the porgies. We've got jolthead porgy, knobbed porgy, saucer-eyed porgy and scup, whitebone, and those were all assigned using the proxy value. We went from 147,614 to 143,263. Now, it should be stressed that although these ABCs are changing, the method by which the ACL will be monitored is also changing.

Functionally, it is kind of like you measured something with a yardstick and now you are measuring it with a meter stick. You are going to get a slightly different measurement, but that's okay. It is not actually resulting in a loss to people on the docks. Atlantic spadefish, blue runner, bar jack, gray triggerfish, scamp hogfish, were all assigned as individual ACLs with individual ACLs.

Your ABCs for those, I won't summarize all of them, but you can see there are some changes. Some of them are subtle, some of them are bigger and it really depends mostly on how the MRIP recalibration factor worked and also a little bit on how the Science Center has improved weighting and charter calibration methodologies impacted them.

That is the end of the show. With regards to what I think we're looking for from the SSC, I think we're looking for some discussion as to whether the ABC proxies reflect your ABC Control Rule appropriately for these stocks. We would also be looking for any comments with regards to the calibration method or the overall outcomes of the analysis.

DR. BARBIERI: Any questions for Nick regarding the presentation? I guess no issues with the approach that was used for this. We are going to have John present the SEP report on this.

DR. WHITEHEAD: Yes, this is short; we didn't look at the method. We just were asked the broad question should we be doing this? The SEP feels that the council should update allocations and ACLs for unassessed snapper grouper species based on updated MRIP numbers for two reasons. First, the MRIP estimates represent the best available science; second, if the MRFSS numbers are not updated, the data series will be inconsistent since it is using numbers based on two different methods of estimating catch.

DR. BARBIERI: Nick, here on our roadmap document under action for this item, it mentions review and comment on the methodology used to update the allocation and ACL values. I didn't see anything on allocation. Did you really have anything or that's coming up?

DR. FARMER: Yes, I didn't understand that was something the SSC would want to look at. It is in the workbook I believe that I sent out, the Excel workbook, but basically we used the exact same allocation and ACL methods as were used in the Comprehensive ACL Amendment. It was actually really easy, because I had a datasheet; and when you change the data on the datasheet, everything else automatically updated. It was the exact same method down to the way the tables were formatted.

MS. LANGE: I think when we went through and the three options we had for what we would use, the number of years or the third highest were based on what we saw with the pattern in the fishery of the time series. Based on each of the slides that Nick presented, I didn't see any glaring changes in the patterns, so I don't know that with either dataset that we would have chosen a different method. The rest of it is just canned, straightforward calculations. I don't see any problem and it is appropriate to use the best available.

DR. BARBIERI: Excellent, Anne, because this gets to the core issue here, the discussion, whether we saw any differences in patterns there from the data that we used to make those choices in terms of the length of their series. No additional comments or concerns from the SSC regarding the ABCs? Thank you, Nick.

Moving along, we are going to have a Snapper Grouper Regulatory Amendment 15. Myra is going to give us an overview. At this point Myra explained this is supposed to be a preliminary analysis that is being presented. If there is anything that the committee feels could be provided in terms of comments or guidance, any concerns that you see with the general summary that Myra is going to present, I think that will be welcome.

MS. BROUWER: Yes, and the document that I'm going to use to walk you through this is one that was e-mailed to you a few minutes ago. The reason for that is because there were no preliminary analyses by the time I compiled the document that was sent to you in your briefing book.

The document you now have is a summary that I put together for the Snapper Grouper AP. They are meeting on November 7 and 8. This document here has a little bit more information, nothing very enlightening, but I figured I would use the most current document to walk you through it. A little bit first on the timing; Regulatory Amendment 15, the council intends to approve this amendment for submission to the Secretary of Commerce at the December meeting.

It is moving very fast and there is going to be very little time to provide input. There will be a public comment session at the December meeting where the public will have the opportunity to submit their comments. We are going to also have, as we always do, an e-mail address where people can submit written comments for a certain period of time.

Like I said, this is a summary for the AP so the introductory part of the document is just sort of background. If you move down to Page 2, it has the purpose for the actions that are included in this amendment. Action 1 would be to adjust the ABC and the OY and the ACL for yellowtail snapper in response to the latest stock assessment.

This action was included in this document after the October 10 meeting that you all had with the Gulf SSC. That is why it is not included in the document that you received in your briefing

book. The other two actions are the same. One would be to potentially adjust the commercial and recreational fishing years and put in a spawning season closure for the commercial sector. The third action would be to consider removing the accountability measure that closes all of the shallow water grouper complex when the gag ACL is met or projected to be met.

This is something that was left over from Amendment 16 when the council put in this accountability measure to address bycatch of gag. A little bit more background there; the Comprehensive ACL then went on to establish ACLs for some of those shallow water grouper species like red grouper, black grouper and scamp, but this accountability measure was never removed.

Even though those three species have their own ACLs, once gag closes then the entire complex closes. You can imagine this is something that has the potential to have some significant socio-economic impacts, and so the council is looking to possibly remove that accountability measure. Action 1 has the ACLs for the two sectors for yellowtail for the South Atlantic Region based on the recommendations of the SSCs at the October 10 meeting.

The no action alternative kind of includes what is currently in place now, what the temporary emergency rule is going to put into place based on those recommendations in the next couple of weeks, I assume – I don't know exactly the status of that rule – and what the ACL would be adjusted to.

Alternative 2 has the adjusted numbers. Again, this is based on the jurisdictional apportionment between the South Atlantic and the Gulf and the sector allocations. Then Alternatives 3 and 4 are similar to what was considered during development of the Comprehensive ACL Amendment. The guidance from NOAA General Counsel and the NEPA folks in the region was that these alternatives needed to be included for the council's consideration.

Those are the numbers that we will look at. Because this was put together in the last couple of weeks, there are no preliminary analyses, obviously. Just for some background, the council has chosen for all other snapper grouper species, at least the ones in the Comp ACL, to establish the ACL equal to the ABC without any kind of a buffer. Are there any questions so far on Action 1?

DR. BARBIERI: I have one, Myra. Here for Alternatives 1 and 2 you have ACL equal OY equal ABC. Can you explain a little bit; because looking at the assessment, the ABC had been set really based on MSY. There was an estimated value of OY that was updated, but is was a council choice for OY?

MS. BROUWER: This is how it was chosen to be specified in the Comprehensive ACL. The SSC did provide some good feedback back in I believe it was November of 2011 that was passed on to the council. They are aware of your concerns with setting the OY at the same level as the ABC.

MR. CARMICHAEL: Yes, just to follow up on that, that is exactly right. In the past we've often asked that an assessment provide the alternatives for OY that were typical, 65, 75, 80 percent, 85 percent of FMSY yields, and OY was often given as an equilibrium so that you could see MSY would be at equilibrium, OY is giving it equilibrium, as well as in potential yields

given the current stock size. For the most part in the future we won't be asking for that, because now the council has specified that once you set ABC, you've set OY.

There won't be a need to do that type of OY calculation in the future. I think while we're on this, we should just maybe pause a moment and make sure that there are no questions about the assessment or anything. I know we had a meeting of both, but I understand there were some technical difficulties. I think it would be good just to put it out there and see if anyone had any questions about that assessment since it wasn't handled at this meeting.

MR. WAUGH: To that, I think your concern should be more focused on where the council set ACL equal to ABC. From the council's perspective, if you are setting an ACL, the intent is to let them harvest that so that is your optimum yield. You want them to harvest that. I think where the issue is, is setting then the ACL equal to ABC; not so much the OY equal to ABC.

DR. BARBIERI: At this point I am not sure I would present it, Gregg, as really a concern. From a technical perspective, there are differences between optimum yield, maximum sustainable yield and ABCs. If we follow how the whole definition of OY is presented in the Act, I think there was some flexibility there.

But I think that the SSC at some point – I think it would be valuable for the council if the SSC did some additional discussion on optimum yield from a technical perspective and just sent that to the council as some suggestions or guidance on perhaps better ways to define OY that may be helpful in managing the fisheries. It might facilitate also this reconciling of OY definitions for other species in the yellowtail snapper.

I just want to get a clarification based on what the council expected in this. I understand and now I don't have a concern. It is something that I think would be helpful in the future, a discussion that would be helpful for the SSC to have in terms of OY. We haven't revisited really OY since the SFA, the Sustainable Fisheries Act.

We haven't updated our definition of OY, and I think the council could benefit from some input from the SSC. My comments are really in that light. John brought up the issues of questions regarding the yellowtail snapper assessment. I got a few comments by e-mail. Chip sent something regarding the age composition. I think you saw some signs of juvenescence in the commercial sector.

MR. COLLIER: Yes, it was just a quick look and it looked like there was an expansion in the early 2000s and then since then there has been a truncation. I mean, you guys looked at it in a lot more detail and you know the data a lot more down in Florida. I don't know what sampling issues might have occurred, if there were more samples in the early 2000s, if that is what caused it or not.

DR. BARBIERI: It's definitely something to keep an eye on for the different sectors. There is this issue of a potential expansion of the commercial sector with yellowtail harvest. It would be good to keep an eye on the age composition of the different sectors and see if we are seeing any creeping of harvest on a level that is impacting the age structure. Are there any other comments or questions?

MS. BROUWER: Okay, Action 2 would look at considering changes in the commercial and recreational fishing year for yellowtail snapper, and this is something that was suggested by the industry. The alternatives are up on your screen. There is also an alternative to establish a spawning season closure for the commercial sector.

If you scroll down below, there is a very simple graph of the average landings, commercial landings by month for 2006 through 2011. Landings are heaviest during the summer months. Here are the average landings in table format. April, May and June seem to be the peak. Here are the recreational landings by month for the same time period; a little bit of a shift towards the right with maybe July being the highest month.

Basically all we've written in here – and I'm not going to go through it in detail, but shifting the fishing year to after – well, I should say the spawning peak for yellowtail is June/July. It is protracted spawning; it starts in April and goes through August. Starting the fishing year after the spawning is done evidently would have positive biological impacts.

As far as the socio-economic, I can't really speak to that but what I have heard from the fishermen is that they would prefer to begin fishing in August mainly because they think that will stretch out the season into the spring months, and they consider that more beneficial to their business. Are there any questions on that?

MR. CARMICHAEL: How much of that might be related to the fact that the fishery was facing closure, for changing the season, the fishing year stuff? I mean if it is not going to close, then it probably doesn't make a difference? I think in doing this we should consider the assessment implications, because we do assessments on annual years and you get things like black sea bass where it gets difficult – it's not impossible, but it is certainly difficult and unclear when you start splitting that out across the year. It has some decision of how you allocate that proportion of an ACL on a calendar year to the different fishing year components.

MS. BROUWER: Right, so the closure that John is referring to – and I'll just give you a little summary just to make sure everybody is on the same page – in September, right at the start of the September council meeting in fact, NMFS announced that there would be a closure of the commercial yellowtail fishery because the ACL was projected to be met.

Now this fishery has never closed before, and it's very localized to southern Florida and the Keys. We had a lot of folks come up from the Keys to give public comment at the September meeting to the council, and evidently they were very distraught. A couple days later the Center came back around and said, well, our calculations were not correct.

There were some errors in filling in the blanks and the matrix or something along those lines, and therefore they established that there was in fact still some yellowtail out there to be harvested, and so the fishery did not close. John is correct in that some of the feedback that we received from the fishermen at that meeting was prompted because of this imminent closure of the fishery, which they had never had to deal with in the past.

For this action, as you know in our amendments we have a section in the document that is called council conclusions and we explain what the various advisory groups had to say. If you had any input that we could include in that summary, now would be a good time to bring that up.

DR. BARBIERI: I think that John has already pointed out a key one in terms of the fishing season, which is having different fishing years for different sectors will make the assessment work much more complicated. Perhaps if we take into account a fairly large increase in the ACL and the fact that it is unlikely that this quota will be met in the early mid-fall this coming year, I think that the issue has been resolved. I think that this adjustment might create more of a problem than a solution. Scott.

DR. CROSSON: I completely agree with you. I would think with a 40 percent bump in the ACL that the chance that there is going to have to be an early closure in the coming years is unlikely unless there is a significant increase in the number of trips. I don't think there is any movement to change any of the other regulations that are out there. Again, we are just speculating, because we don't know if there are going to be increasing number of trips. Maybe fishermen will take that as a signal, but again for the recreational sector I think that is unlikely.

DR. BROUWER: Finally, the third action in this amendment, as I said, is to consider making changes to this accountability measure that would close shallow water grouper. For this we have the no action. Also, bear in mind that the composition of that shallow water grouper complex changed a little bit since implementation of the Comprehensive ACL.

It now includes red hind, rock hind, yellowmouth grouper, yellowfin, coney and graysby. Tiger grouper was, of course, removed. Here are the alternatives. I should also tell you that the Gulf Council has recently put together an amendment, Amendment 38 I believe it is, to the reef fish management plan to also look to have a similar accountability measure for their red grouper and gag in the shallow water grouper; you know, the accountability tied to the shallow water grouper. They are also looking at changing that.

Currently their preferred alternative is to change that accountability measure so that only the species whose ACL has been exceeded or met is the one that closes, and it leaves everybody else alone. That is currently what they're looking at. One thing that we are proposing – and again these analyses are not yet ready – is to look at the post quota bycatch mortality of gag and perhaps consider subtracting that amount from the following year's gag ACL to make sure that bycatch of gag is being accounted for, because that was the initial intent of this accountability measure.

Of course, the problem there would be that if bycatch continues after gag is closed, then your seasons would become shorter and shorter over time. Again, here is where we would want to know what the SSC has to say about these alternatives. Okay, let me go a little big further here. Table 2, if you scroll down a little bit more, has the commercial and recreational ACLs for all our snapper grouper species, including the shallow water grouper up there on the right upper corner.

There have been a number of regulations that have been put in place since Amendment 16 that seem to have had an effect on protecting gag. There has been a spring closure for the shallow water groupers. There have been regulations put in place for red porgy. Here is a dendogram that shows the species that are most often caught with gag and in that particular group. You can see red snapper is among them, and, of course, we know there is an ACL of zero landings for that species.

Red grouper is under a rebuilding plan, so there have been some regulations put in for that. You could say that the regulations that have been put into place seem to have had an effect on the discard mortality of gag. This graph here shows the commercial discard rate based on the discard logbook data. It seems to have gone down considerably. One could say that the regulations that have been put into place for other species have had an effect on gag, and so biologically it seems to be okay to be considering removal of this accountability measure.

DR. BARBIERI: Questions or comments for Myra?

MS. BROUWER: Another thing – I'm sorry Jeff, perhaps you can speak to this actually. I was going to bring up that off of North Carolina it seems that according to the fishermen and what folks have said as far as people who target red grouper, they are able to do that without impacting gag.

The reason this does not show up in the data; so clearly is because the data are looked at in a trip level. You are looking at trips that have perhaps caught gag or red grouper inshore or at a trip level, and so that is something that we would also like to take a look at. I don't know if Michelle wants to speak to that as well.

DR. DUVAL: Yes, definitely. The conversations that I've had with fishermen lately, they have indicated that they can fish for red grouper without encountering gag. They are just found in different places and on slightly different structures. Gag is more structure associated. We've tried to dig into some of our trip ticket data a little bit and actually having some of these analyses updated right now.

I hope within the next week or so that I'd have some more updated information. There were some previous trip ticket analyses done only with data from 2003 through 2007. I'd like to look – I want to update that information. But from what I've looked at thus far, you can clearly see that on I guess what we've classified as targeted red grouper trips, you are not seeing nearly as many gag and just a very rough cut of what I guess I would call the top co-landed species are on those red grouper trips.

If you look at I guess what I would call a targeted red grouper trip, I think that the next most highly landed species is actually vermilion snapper. I think based on those very rough analyses, plus what the fishermen have told me, it seems that there is definitely something there in terms of being able to fish for red grouper without impacting gag.

DR. BUCKEL: Yes, just to second what Michelle just said; we have worked with a group of fishermen, two brothers actually out of Morehead City, and that is exactly what we see. When they target red grouper, it is predominantly red grouper that they catch and just a few gag. Then when they target gag, it is predominantly gag. I sent those data to Gregg, but I think that certainly gag could be shut down and then red grouper could continue to be fished.

There is going to be some discard mortality, but how you deal with that, either saving some quota, have a projected quota that is slightly less than what you are shooting for to handle that remaining discard mortality that you would have for gag or take it off the next year, I guess that is a council decision to make. But the discard mortality for gag and allowing continue fishing for

red grouper and scamp, at least for the situations I'm familiar with off of North Carolina, it wouldn't be a problem.

DR. BARBIERI: Myra you said in the very beginning we're going to have another opportunity to review – no, not this one. I guess you were referring to the previous one. Yes, I'm sorry. This one, this is it. Well, I guess there are really no additional comments or questions for which I'm interpreting is no concerns from the SSC regarding the action as presented; that the discussion of the targeting of different grouper species and the reduction in the bycatch seems to warrant this action and the SSC has really no concern. Myra since you are up there, it would be great to get through Snapper Grouper Amendment 27 before lunch unless you feel that this one is going to be an extremely long one.

MS. BROUWER: Sure, I'd be happy to go through this; it shouldn't take very long. Again, this is another one that has been updated a little bit since you received the initial summary or list of actions. This is Amendment 27; again one that the council requested be put together at the September meeting. This is on a little bit of a slower track than the one we just talked about.

The council is going to be looking at this in December and approving it for public hearings in January. Again, this is a summary that I prepared for the AP. Again, we are looking at actions to modify management jurisdiction for yellowtail snapper and mutton snapper in the Southeast Region.

This is something that is a response to a request that we received from the Gulf council a while back – I believe it was in April of 2010 – indicating that the Gulf C\council would prefer that the South Atlantic take over management for yellowtail and mutton throughout their range. The majority of the landings are attributed to the South Atlantic side and they wanted the South Atlantic Council to consider this.

At that time the South Atlantic Council was all wrapped up in the Comprehensive ACL Amendment. They knew that there would be some permitting issues that were going to have to be resolved for making that transfer in management, so they chose not to deal with it at that time. This has come back for them to consider that.

Of course, if that does come to pass, then you have to consider modifying the recreational and commercial allocations for yellowtail and mutton snapper, because the way that we have them now they are relevant only to the South Atlantic. You are all familiar with the allocation formula that the council uses that we commonly refer to as Boyles' Law, and that looks at average landings between 1986 and 2008 for half of the allocation. Then the other 50 percent looks at recent landings, which are from '06 through '08.

Action 2 would incorporate the landings from the Gulf region into Boyles' Law in order to come up with sector allocations that were appropriate for the entirety of the region. Action 3 would address these cross-jurisdictional permit issues that I was telling you about, so I'll get into more detail on that when we get to it.

Then we would have to also make some modifications to recreational regulations, bag limits in particular so that there isn't an overlap where folks can get two bag limits because of the current regulations. We also have to deal with management for Nassau grouper. This is another species

that the Gulf council requested that the South Atlantic take over management for. The Gulf Council went ahead and included an action to remove it from their reef fish FMU in their generic ACL amendment, and that was approved, so Nassau grouper is no longer included in the reef fish FMU in the Gulf.

Then there was a Federal Register Notice that came out indicating that the secretary agreed to transfer this species to the South Atlantic for management, but the South Atlantic never took action to include the Gulf portion of Nassau grouper into their own FMU. That is what this action would do is more of an administrative thing. Of course, we just want to make sure that the regulation that prohibits harvest of this species continues to be in place.

Action 7 is again an administrative thing. What we'd like to do here is make it easier and quicker to make adjustments to ACLs in response to stock assessments. We're adding some language to the framework that we hope is going to be okay with NMFS and NOAA GC so that these changes can take place without having to develop an amendment or a regulatory amendment, NEPA document, so that it can simply be done by a Federal Register Notice, and make those adjustments like that.

Then Action 8 is an interesting one; this has to do with blue runner. They are included in the Snapper Grouper FMU and have been since the beginning. However, it seems that folks who fish for Spanish mackerel have been catching them for a long time and selling them, because they were not aware that this species was included in the snapper grouper FMU and that they were required to have a snapper grouper permit in order to harvest them and the dealers to sell them. This is something that has been happening for some time.

These folks derive a good chunk of their income from the sale of blue runner, and so the council wants to consider taking action that would allow these people to continue to take advantage of that resource and just take care of all the administrative bits to allow that to happen. It is very straightforward for this management jurisdiction.

There are only two actions, either we do it or we don't; nothing too complicated there. This modification of the allocations, we anticipate that this could potentially create some ruffling among fishermen in the Gulf, because over there there isn't a separation between the two sectors. There is a single ACL that both the commercial and the recreational folks can fish under.

What this action would be doing would be imposing a sector allocation to Gulf fishermen, so we anticipate that they would be the ones that would be impacted. Biologically there is really nothing there because the harvest would still be constrained by the ACL and there are appropriate accountability measures there. I don't know if you want to discuss this at all at this point.

DR. WHITEHEAD: The Socio-Economic Panel discussed Boyles' Law. Our report was sent around and you can read what we think. A lot of it is what you've heard before about allocation. I think the most important thing is that we have significant concerns about the arbitrariness of Boyles' Law. I think one of the lines that I heard was as far as an arbitrary rule it is as good as any other. I think we prefer to see allocation done a number of different ways, but it is probably not worth reading that into the record.

DR. BARBIERI: Did the SEP then propose any alternatives, provide guidance to the council regarding your concerns or you basically just expressed your concerns and you expect some kind of potential alternative to be presented?

DR. WHITEHEAD: We made a number of suggestions about a more economically efficient way to allocate fish across sectors. That is in our report.

DR. BARBIERI: Excellent, thank you. Scott.

DR. CROSSON: Yes, there is also in our briefing book a NOAA technical memo on allocation between the sectors that is worth at least a brief read. John mentioned economic efficiency to standard, but the report also mentions that there are standards that address fairness or social issues as well that the council might consider as alternatives to Boyles' Law.

DR. BARBIERI: Yes, excellent, thank you.

DR. WHITEHEAD: It would be good to rename Boyles' Law to something else. We heard that Mr. Boyle would appreciate that, too.

DR. BARBIERI: By the way, John, I spent part of this past weekend studying Boyles' Law with my 13-year-old son, and I was quite confused by the two definitions.

MS. BROUWER: Okay, moving on to Action 3, this again is an administrative-type thing where the South Atlantic Council would recognize the permits in the Gulf to allow those folks to continue to fish for these species without them having to purchase a snapper grouper permit as the South Atlantic Council requires. It's just an administrative thing.

Then here we would modify management measures for yellowtail to be consistent with the transfer of management. There is another action that does it for mutton snapper, but it is exactly the same thing. We just divided them in separate actions for ease of analysis. We're looking at establishing a bag limit that would be applicable to the entire region.

This, of course, hinges on whether Action 1 comes to pass or not. There are some preliminary bag limit analyses that the region has done, but I am not ready to talk about any of that. Like I mentioned earlier, the impetus for this would be because if you didn't make this change, then people could harvest under the Gulf bag limit and also under the South Atlantic bag limit and then have twice as many fish.

If you are interested, here are simply just illustrations of the number of yellowtail that are caught per angler in the various databases according to the headboat and charter and private. This is in the Gulf of Mexico. Like I said, the same thing for mutton, the alternatives are almost exactly the same; again the same illustrations for the South Atlantic and for the Gulf. Are there any questions on that one?

Okay, and then as I mentioned, Nassau grouper, again an administrative action that the SSC – unless there is anything anybody wants to say about that. Action 7, our framework is pretty extensive. Basically it allows the council to make changes to harvest levels without the need for a full plan amendment.

Things like ACLs, accountability measures, allocations are not covered under the framework. What we would propose is that we add simple language, which is under Alternative 2, that basically says that in response to stock assessments the council could make these changes quickly via the Federal Register, and then we'd be done with that.

Then possibly the most interesting actions in here as far as you guys are concerned is the one that pertains to blue runner. Blue runner, as I said, is under the FMU, so it requires a snapper grouper permit, either an unlimited permit or a 225-pound trip limit permit. Then the Comprehensive ACL established ACLs for this species and accountability measures.

The alternatives that we are analyzing in this amendment would be to remove it from the Snapper Grouper FMU and instead place it in the Coastal Migratory Pelagics Fishery Management Unit. This would be, as I said, because it is being caught mainly in the Spanish mackerel gillnet fishery.

Alternative 3 would retain it in the Snapper Grouper FMU, but you would allow harvest with a gillnet, which is a prohibited gear for snapper grouper species; allow harvest with a Spanish mackerel permit and require an endorsement on that permit for the commercial sale and harvest. The Spanish mackerel permits are open access. They are easy to obtain; you just buy one every year. It would not be administratively burdensome nor costly for the fishermen to be required to obtain a Spanish mackerel permit in order to land this species.

Then the last alternative would retain it in the Snapper Grouper FMU but make changes to the requirements; basically exempt it from the permit requirement for purchase, harvest and sale. Here are the landings of snapper grouper species and the percent of those that constitute blue runner, so evidently they are not a significant part of the fishery. This graph shows the percentage of mackerel and other snapper grouper species that are landed with hook-and-line gear that caught at least one pound of blue runner in the South Atlantic for five years.

MR. CARMICHAEL: I can't really read the numbers; what's the peak?

MS. BROUWER: Seventy percent; the vertical axis is from 0 to 70 percent. Then looking at it another way, these were the species that were landed on blue runner gillnet trips. You can see that the majority of those are Spanish mackerel, which are the blue bars. Like I said, based on anecdotal evidence from fishermen, harvest of blue runner constitutes up to 30 percent of their income so it is pretty significant.

Then the other issue that we are looking at that will have to be addressed is the percentage that is reported in the logbook and the amount of blue runner that is reported through the trip tickets. It looks like at least a portion of the harvest is not being reported properly.

That's another problem with what has been happening is we don't really have as accurate an idea of the landings of blue runner because they have not been attributed to the appropriate database consistently. That is basically all I have for now.

DR. BARBIERI: Are there any questions or comments for Myra regarding this amendment? This one is in draft format and we are going to have an opportunity to review.

MS. BROUWER: Yes you will. During your April meeting, we will have had public hearings and you can review it at that point before the council approves it in June.

DR. BARBIERI: At this point I don't see any concerns. Chip, did you have a question?

MR. COLLIER: I just have a slight concern. The information presented shows there are pretty low landings of blue runner overall; but when you look at the ABC, we have an ABC of over a million pounds. It is a significant catch. It just might not be all that significant in gillnets.

MR. CARMICHAEL: I don't know that it should be judged based on the percentage contribution of blue runner to snapper grouper overall, because we've kept a lot of species in the management unit that have much lower percentages than that, so that's not maybe the appropriate grounds.

DR. BARBIERI: Okay, so that would be one concern that perhaps we can give the council.

MR. CARMICHAEL: Under Alternative 4, how would that affect reporting? That wouldn't make it so that they didn't have to report blue runner, would it? I think if they don't have to have the snapper grouper permit, does that affect them not having the snapper grouper logbook and then not reporting landings through that on this?

Obviously, there would be the other reports that go in, which are important for landings, but what about the logbook stuff which gives you the data on gears and such that is used sometimes? Yes, that would be a problem, you think.

DR. DUVAL: But that information would be collected on state trip tickets, correct? If I recall, I am pretty sure that at the last council meeting the Florida representative did state that they would be willing to take over state management of blue runner if the council chose to remove it from the management unit now. Things may have changed between now and then, and I'm certainly not going to speak for Florida, but I did just want to note that for the committee.

DR. BARBIERI: Myra, it looks like it might be good for us to see this again in April in a little more finalized format and perhaps incorporating some of this more detailed information and perhaps if you can try and address some of our concerns and discuss with the council, I think this would be a good productive discussion for us to have in April.

Are there any other comments or questions? If not, I think this would be the appropriate time for us to break for lunch. We have a little more flexibility with our schedule today. Considering the grind that we had to go through yesterday, we thought that perhaps it would be a good idea to give the committee a little more extended lunch. We are going to reconvene at 1:30 sharp.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday afternoon, October 24, 2012, and was called to order at 1:30 o'clock p.m. by Chairman Luiz Barbieri.

DR. BARBIERI: (Recording started here) If there are no concerns regarding this adjustment, I think we are going to go ahead and make it so. Would anybody have any problems or concerns with Katelin? If not then, Katelin, after we finish, which should be mid-afternoon, we are going

to have your presentation. With that, we are going to resume our review and discussion of snapper grouper regulatory amendments, starting this afternoon with Amendment 28, Myra please.

MS. BROUWER: Okay, Amendment 28 was born after the council meeting. Initially the actions that are in this amendment were a part of Regulatory Amendment 15. Then we received guidance that we could not take this type of action in a regulatory amendment because our framework does not allow it.

The action this amendment would be taking is setting up a process to establish the ACL for red snapper, to allow a limited harvest on an annual basis depending on certain criteria like it was done this year. We started working on this amendment. It has one action; many subalternatives, but just one action. That is to establish that process, to allow harvest of red snapper.

The no action includes two parts. It is what is currently in the regulations and then the actions that were taken by a temporary emergency rule for the 2012 fishing season. Back in June of this year, the council was presented with several ways of calculating the ACL for red snapper. They chose one of those ways to do it, and there is the equation to show that.

They also chose other regulations. For example, they put in a 50 pound trip limit. They specified a bag limit. In this amendment the council will have the opportunity to go ahead and formalize this process that was used this year and make that the way that it is going to be done in 2013 and beyond or look at other ways of approaching it.

What we've put here are other methods of calculating that ACL. I'm not going to get into the details. Just in general the alternatives look at comparing the ratio of underages and incorporating that into the ACL calculation; then either doing that on an annual basis or including I believe is down here underages from previous years and then averaging those to come up with a percentage that would then be the one that would dictate the ACL for the following year. Does that make sense?

This is what we're going to analyze right now. We don't have any of the analyses done for these alternatives. The Southeast Fisheries Center did have some feedback on at least two of these approaches I believe that were discussed at the June meeting, but we haven't looked into a couple of the other ones. The other thing that needs to be done in order for the whole process to work like it is supposed to is establishing seasons.

This year they had what they called a mini-season that began on one weekend where the recreational sector was allowed to fish and the commercial guys were allowed to fish during that week, and then it was closed down the following weekend. The council will have a chance to establish that for 2013 and beyond, and the same thing for the recreational.

This year it was done on two consecutive three-day weekends, so Friday, Saturday and Sunday. As I said earlier, the council wanted a 50-pound trip limit for the commercial sector, and so we've included other alternatives for them to consider; and same thing for the bag limit. That is pretty much what Amendment 28 is about.

Again, the timing of this is quick because the regulations that were put in place for the summer are going to expire. It was done through a temporary rule that expires 180 days from the day it is implemented. The council needs to have basically an approach of how they are going to deal with red snapper for 2013. They want to approve this for submission to the secretary in December, so this will be the only time that you all get to see it.

DR. BARBIERI: Are there any questions or comments for Myra? Myra, you said that the regulatory amendment or the approach that is being used was actually submitted to the Science Center for review, right? They have provided some input and you have adjusted or you have implemented any of the modifications they have suggested, or they haven't yet suggested any?

MS. BROUWER: No, they have not had a chance to suggest any. What I was referring to is the input that they gave to the council during the June meeting when the council was presented with the various approaches, and they discussed many other things, including a tag program and a lottery. They just went all over the place.

Ultimately the council chose the approach that was scientifically defensible in the eyes of the Center, because one of the approaches that were being proposed, according to the Center, was not defensible. The one that gave an ACL that was reasonable in order to have a season, because some of the other approaches gave an ACL of 2,000 pounds.

That is where the council is looking at this from is if there is going to be a season, then we need to have a way of calculating the ACL that not only is it going to be okay with the Center, but it is going to give us an ACL that is going to be reasonable, practical exactly.

DR. BARBIERI: Are there any questions or comments for Myra regarding?

MR. COLLIER: What was the harvest from this season?

MS. BROUWER: The overall ACL was 13,067 pounds, which was then split up into commercial and recreational sectors according to the established allocations. I believe the recreational sector ended up with something like 9,000 pounds and the rest was commercial.

MR. COLLIER: But what was the actual harvest?

MS. BROUWER: The actual harvest; I think we are going to be finding out about that in December. We got a preliminary report from the state. The various states had put in ways to collect carcasses and ear bones and all sorts of things. The data just haven't been made available to us yet. I suspect in December the council will have a better idea of what the harvest was.

DR. DUVAL: Wasn't it 13,067 fish? Okay.

DR. BOREMAN: I was just madly looking for this equation on Page 2 and just trying to figure out if there is any instance in which the ACL for the year can exceed the ABC for the year, buy I don't think so. You are shaking your head no, Myra?

MS. BROUWER: Well, I don't believe that the equations that were put together – and I should say that the Regional Office submitted these alternatives for the council to consider – would have

allowed for that to happen. I guess I should also mention that the projections that are being used come from the SEDAR 24, I believe it was, stock assessment.

At the June meeting one of the things that happened is the council hadn't formally adopted or specified the ABC for red snapper. SEDAR 24 was presented to the council after Amendment 17A was approved. You recall there was a proposal for closure and all these things, and the outcome of SEDAR 24 was included in the amendment that took away that closure, Regulatory Amendment 10.

We were told that because the results of the assessment had been included in the approved amendment, that therefore the results of that assessment had been adopted. What we didn't know was how the council wanted to handle the specification of ABC, if they wanted to do it on an annual basis and use the projections from the assessment or if they wanted to do it differently.

In June they went and specified – and I believe the differences in the ABCs had to do with the weighting that was used for the headboat index. I believe the council ultimately picked the ABC that resulted from the weighting of 0.3 for the headboat index. They took action to do that in June.

DR. BUCKEL: Yes, just looking at the equation, is it ABC that is in between the parentheses? This is the equation on Page 2; is that supposed to be year minus one?

MS. BROUWER: I couldn't answer that question; I don't know.

DR. BUCKEL: It says plus closed season landings during the previous fishing year.

MS. BROUWER: Then it probably does.

MR. CARMICHAEL: It looks like on that it is looking at landings for last year and the year before and then the ABC in this year; take an average of the three, the one that is on the screen there, Alternative 2.

DR. BOREMAN: If you look at the top of Page 3, it says the ACL will be computed by first averaging the estimated dead discards for the two prior years with projected mortalities from the current year ABC so the equation is correct.

MR. CARMICHAEL: Does anybody have any opinions, suggestions or feelings either way about any of these alternatives of calculating this or things that the council should maybe consider when trying to choose which to use?

DR. VAUGHAN: I'll plead ignorance. I'm not sure I understand the equation under Subalternative 2A. I mean, equation under 2B makes eminent sense to me, what they are trying to do, but I don't understand why you're averaging the discard; is that CST? You're averaging the discard from year minus two and year minus one, plus you are averaging in the ABC from this year. What is that doing?

MR. CARMICHAEL: Yes, the CSR is basically the removals. It is the discards plus whatever landings were allowed during the season. It is the total removals in that year and the total removals in last year.

DR. VAUGHAN: You've got two different years; you've got the discard plus you have the ABC from the current year. It is not quite clear to me what is going on there, why you are averaging in the total landings with the discards.

DR. BOREMAN: Well, let's look at the case where the CSRs for year minus two and year minus one are zero. Then you have ABC in this year – ACL equals the ABC in this year minus ABC in this year divided by three. That to me makes no sense.

DR. VAUGHAN: It is two-thirds the ABC.

DR. BOREMAN: Yes. By the way, there is a line at the end of that that I should have caught. It says if the ACL is calculated as a negative number, then the ACL will be set equal to zero. My recommendation would be if they have a choice to go with the simplest one they can explain to the industry and not have all these rabbits coming out of hats.

DR. VAUGHAN: The KISS principle works.

DR. REICHERT: Myra, it may help us – and I may have missed that, but do you know where this equation is coming from or what it is based on or maybe someone else in the SSC can explain that briefly?

MS. BROUWER: Marcel, I'm not sure I would venture to try to explain. What I know is that the council had proposed a way to calculating the ACL that they talked about in June. The Regional Office presented the various approaches with examples. The approach that the council had proposed was not agreeable to them. It was changed at that meeting, and that is where the equation was born. Alternative 2 should be the same thing as the no action except with this conditional statement at the top is what I understand.

DR. DUVAL: Myra, I'm just trying to remember back to that very lengthy June council meeting – it was a bear – but the approach that we chose in implementing some limited harvest for red snapper, there were four different ones that were presented by the Science Center, and I think we chose a middle-of-the-road kind of one that wasn't the maximum potential harvest that we could have and it wasn't the lowest, but it was right in the middle. When you say the approach was not acceptable to the Regional Office or the Science Center, it wasn't that that you were referring to?

MS. BROUWER: No, I'm sorry, I misspoke or you misunderstood what I meant to say is that the approach that the council originally thought would be feasible to use which was the one that gave the most fish. I remember Bonnie explained, and I cannot recall the reason she gave, but there was some rationale for the fact that the way that ACL had been calculated was not in her opinion defensible.

DR. BARBIERI: Myra, you said that this is going to go in December, right? Yes, this is our last opportunity. Well, John has brought up some good points, John Boreman. Unless anybody else

in the committee has any additional input or comments or questions, I think we are ready to move on. Thank you, Myra.

We are moving on to Agenda Item 17, Other Amendments and Actions. We have a number of brief amendment summaries that are in development for consideration by the council in 2013. We will be provided greater detail about these amendments later, but right now we are just being given the opportunity to have an overview of what this amendment will be and give us the opportunity to provide some input on the front end if we have any; correct, John?

MR. CARMICHAEL: Yes definitely. I add to that you might have noticed there are an awful lot of amendments, and there are a lot of amendments that didn't exist when you last met that are scheduled to be approved in December. We wanted to have your attention focused on that, but we also wanted to make sure you are aware that there are a lot of other amendments that are also out there on a slightly longer timeframe.

We wanted you to at least have them in your mind so when they come to you in a little more detail, you have some familiarity. This goes back with us trying to keep you up to date with every amendment and wherever it stands at each meeting. A lot of these are maybe perhaps a bit farther off and we'll talk about in more detail. It is just a chance to say if you have an analysis you would like to see for a particular issue, this is a great time to bring that up.

MS. BROUWER: I'm just quickly going to mention this is in your overview. Snapper Grouper Amendment 26 would be developed after your recommendations from the April 2013 meeting to apply the ORCS methodology to snapper grouper species that are unassessed. That would take care of implementing those recommendations as well as making any changes to sector allocations. The council's guidance for this one was that they would discuss it again at their June meeting and then provide guidance to staff as far as development of this amendment.

Then there is Snapper Grouper Regulatory Amendment 14. This is one that includes a lot of modifications to existing regulations, some of which have been recommended by industry, Snapper Grouper AP, or just folks that have provided public input at council meetings. This amendment would hopefully put in place additional protection during the spawn for mutton snapper.

We've been receiving a lot of anecdotal accounts of very heavy fishing activity during the spawning season. For gray triggerfish, because the assessment will not have been done by then, the council decided to not muck around with any changes to those regulations other than just for consistency sake change the way that the size limit is specified. They want to talk about again changing the fishing year for black sea bass and then any adjustments to black sea bass as a result of your P-Star recommendations would be done in this amendment; also changes to vermilion snapper, increasing the minimum size limit for hogfish. That was a recommendation from the AP.

Then they had some actions to modify the bag limit for red porgy, which I think is going to have to be reconsidered in light of the results of the assessment. This is just the current list of actions in this amendment, and this one will come to the council as an options paper or as a draft at the March 2013 meeting.

Snapper Grouper Amendment 22, this is one that the SEP had a chance to discuss and provide input on. This is the one where a recreational tag program would be put in place for red snapper and for the deepwater species; golden tile, snowy and wreckfish. Again, this is on a much longer timeframe. The council wants to wait until June or September of next year to look at this one. I'm sorry; I neglected to perhaps get the SEP to give their comments on Amendment 22.

DR. WHITEHEAD: A lottery opened to all citizens of the United States appears to be a fair way of distributing recreational tags. The SEP recommends that lottery winners be able to transfer their tags. This should facilitate the movement of tags to hire or value uses, especially if an official trading platform was established to provide information on past trades and help buyers and sellers connect.

It should be clearly and prominently stated in the lottery rules and instructions that lottery winners would need to own a recreational fishing permit appropriate for the fishing destination at the time of application. This would help deter speculative purchases by pointing out that there is a cost to receiving a tag.

The SEP recommends that tag recipients be selected with replacement across years; that is if a fisher receives a tag in a given year, the recipient should be allowed to participate in the lottery in the next year. Within a given year, in the case where the number of tags is less than the number of lottery participants, the SEP recommends that recipients be selected without replacement.

This prevents the outcome of one lottery participant receiving multiple tags when other participants receive none. In the case where the number of tags is equal to or greater than the number of lottery participants, then each participant should receive the same number of tags with any remaining tags being allocated to participants via lottery without replacement.

The lottery and tag transfer market should be electronic if possible. If tags themselves could be distributed and redeemed electronically, this might help lower administrative costs and transaction costs for buyers and sellers. Concerning the question of when management should switch from a tag lottery regulatory scheme to some alternative, perhaps less restrictive scheme as the fishery recovers, the council might wish to consider switching schemes when the alternative would not have a significantly different biological impact on the fishery.

In addition, the council might wish to consider waiting to switch regulatory schemes until the stock recovers sufficiently for a full MRIP wave of sampling information. Finally, the SEP notes that data from the tag market could be used to generate economic value estimates for future management decisions; for example, allocation between sectors. I should have said before that was a long rambling response. We were asked a number of questions and a lot of them were about the fairness of the lottery and just any other recommendations that we might have.

DR. BOREMAN: As I'm listening to this, if a person wins the lottery and gets a tag, they can sell that tag to somebody else? This is a backdoor ITQ system is what we're talking about?

DR. WHITEHEAD: That's what we're recommending. I wouldn't characterize it as a backdoor ITQ.

DR. BOREMAN: Okay, side door.

DR. CROSSON: There are some differences between the ways an ITQ usually operates in a commercial fishery, because this is proposed to be an annual lottery. They are not proposing and we are not proposing any kind of permanent allocation of recreational fishing tags to anybody. They are just saying that if you happen to get a tag – first of all, to get a tag you are going to have to have a recreational fishing license beforehand. You can't just apply without incurring some cost; but once that is the case, if you did want to transfer the tag to somebody else, you would be allowed to do that.

DR. GRIMES: Make sure I understand this; this will be done if you have a special season and you actually open the fishery. I mean, like this year the red snapper fishery was closed, but you opened it but it was no tag program. But if they do that again, then you'll have this way of deciding who gets to catch the red snapper, right?

DR. CROSSON: This would ideally be done in place of the season, because you would be giving out individual tags. You wouldn't have to compress everything down to a three- or four-day weekend and hope that you can estimate the recreational catch. You wouldn't need to have any kind of – in theory at least you wouldn't have to have any kind of margin of error, because the number of fish that would be landed would be the number of tags that were distributed. This is a way of avoiding all of that pressure and lessening the danger of going over the ACL.

DR. YANDLE: I think Scott pretty much covered it. The whole idea is it gets us away from those crazy small seasons. You know how many fish are going to be caught. You can catch them essentially whenever you want. It gets us away from the small seasons.

DR. BUCKEL: How do you deal with unfilled tags, folks that go and don't catch the fish or don't get a chance to go? Is that monitored, is that the plan?

DR. WHITEHEAD: Has anyone mentioned that the whole purpose of the tag system was to be able to count the fish that were caught because they are not showing up in MRIP because there are so few? We did, okay. Yes, if the tags aren't used, then we are catching fewer fish than is in the quota. That is the information that we are getting.

DR. BARBIERI: It won't be easy for you to account – I guess that is Jeff's point – to account for the fish that are not harvested, for the tags that are not used; no way to account for that as the system is set up now, which there is no concern about overage, but there is a limit and people may want to still know what the harvest is.

MS. BROUWER: Right; and this is the initial stages of this. These are the things that the council is going to have to consider. One thing that they could do is make a requirement that unused tags be turned back. There are some programs in place that use that. If there are any things that you guys see that the council is going to have to address such as this, then, please, this is the kind of input that would be good.

DR. DUVAL: All the questions that I'm hearing are pertinent, and they are similar to the questions that we had when we talked about this in terms of trying to brainstorm what the criteria

would be for a program like this. That was one of the questions that came up was, well, what if somebody gets a tag and then they don't use it?

The discussion on the record was that this would simply be a program for allowing harvest. It would not be for data collection, because it would be – especially if the region is going to be setting this up, they couldn't enforce a requirement that people use their tags or lose them or require that they actually report the characteristics of the fish that they caught.

It would be very administratively difficult to do so. Am I characterizing this correctly? I think so. It would be just the most basic thing where if you have a tag, you are allowed to harvest. I think we had a little bit of conversation about tag transfer, but I don't think we ever came to any kind of resolution about would transferring of a tag be allowed. It would certainly not be something that the agency would facilitate or administer. Just to add some clarification as to the conversation that occurred at the council level.

DR. CROSSON: Yes, a couple points; one is that with mostly a group of economists discussing this, the idea of transferability was on – to us they are going to flow to the place where they are most highly valued if that's an option; and if somebody can't use a tag or doesn't want to use their tag, the idea that some place where it would be highly valued and would add considerable economic surplus to the economy is sort of natural. We tend to favor that sort of thing.

The second thought that came up during our discussion – and this is more of a fairness factor – is that under the current short seasons, people that live in immediate access to the coast and can very quickly take the time off to go fishing have an advantage over somebody who lives inland. This sort of program would definitely even that out; because if you happen to live several hundred miles from the coast, the idea that you could suddenly run out to the coast on a short notice and plan your whole vacation and get access to the water is probably unlikely for a lot of people. I think the tags would definitely help even that out.

DR. DUVAL: Just to respond to that; that was part of the discussion that we had as well was that you could not legally set up a program like this and just simply restrict it to residents of the four South Atlantic states. I think the chairman would like to say something.

MR. CUPKA: Also, we discussed that it wouldn't be restricted for use during a short season that we had this year. You could use it any time during the year.

DR. BUCKEL: Just one other thing that has happened in terrestrial tag systems; it sounds like you talked about a lot of these, but often NGOs will advertise and say just go and buy these things or put yourself in the lottery so you get one of these, and then they don't fill the tags. They are trying to keep you from shooting a swan or shooting an elk. NGOs will try to get those tickets so nothing is killed.

DR. JOHNSON: I just had one potential concern, just thinking about it in terms of stretching out the season, is there any potential for high lining or something where folks who go out and save their tag for sort of waiting for the biggest fish towards the end of the year?

DR. BARBIERI: Michelle might be able to go into more detail about this, but I remember that was part of the discussion. There are several of these concerns that the council is discussing at

this point, but they have been not able to zero in on a mode yet that completely takes care of all of them. I think all of that is still part of the discussions. I think this is a great opportunity to provide them with a list of our concerns.

DR. MacLAUCHLIN: Amendment 22 is in really preliminary stages. It is going to be like another year and a half. The overall goal is to figure out how not to exceed these really low ACLs. This is a slide that I made for the SEP discussion that are counted at fish, except for wreckfish, but it is about 390 fish. They are really low. Golden tile went over 223 percent. Snowy was at 192 percent of its ACL in June. This is an idea, and if you guys have another idea of how to count the harvest with these really low number, that is also something that we would love to hear about.

MR. COLLIER: I think a really important point is MRIP isn't designed to count 523 fish. It is designed for a much larger number than that. Going with a different approach, it is good they are thinking outside the box.

MS. BROUWER: I just wanted to also add that there are no in-season accountability measures for these species. I'm thinking golden tile is the one that I've been working on recently. But there are post season accountability measures that are supposed to be put in place, but they haven't yet. It has been two years that the recreational ACL has been exceeded, and those post season AMs haven't been implemented. The AM that is currently in the books is to shorten the following season based on the overage. But, again, it is difficult to arrive at those calculations.

MR. CARMICHAEL: There was a comment earlier on what data you get out of this and whether it tells you essentially a census. I think it has to be clear that this is viewed as a way of not exceeding the limit, because as this group has recognized and the SEP recognized and staff recognized and council recognized every time everybody has talked about this is if you try to create this system so that you can track every individual fish and start requiring people to return back tags that aren't used and all of that.

It gets extremely complicated and it probably gets more complicated then it is worth in some cases, and I think that has the potential to pull the rug out from under the whole thing. I think in most cases viewing it as a way to set the limit, people are going to catch what they are going to catch out of that limit.

But at least if they have more flexibility in going after those in the cases of things like red snapper, then that might be the best that you can get at this time, such a kind of new idea in marine fisheries like this.

DR. BARBIERI: Yes thank you, John. I think this is a very important point that this is not being used, and Michelle made that point as well, not as a data collection type of approach, but really as a way to cap the harvest and to better monitor that very low ACL, so we don't have these overages.

As you can see over there, some are brutal the overages that we are going through now. No system is perfect, but as Kari pointed out this is still in the very early stages of development. If there are any suggestions, we can always incorporate those into our report and provide that information to the council. I'm sure that they would appreciate it.

DR. DUVAL: Yes just for the committee's information, Luiz actually came and presented to us on the snook stamp program and the tarpon program that the state of Florida has and some of the pros and cons of that. I think that – and I forget for which program it is – but something like at least half of the folks who get those; was it for tarpon?

DR. BARBIERI: Tarpon, yes.

DR. DUVAL: Yes they don't report even though there is a reporting requirement, I think. I mean we recognize that there are issues with something like this, but again it is really just to try to prevent exceeding that limit. If it could be made into a workable data collection program, I'm sure everybody would be supportive of that, but at this point I'm not really sure. Any ideas that you all have would be great, but I'm not sure that is feasible at this point.

DR. BOREMAN: I just mentioned this to John Whitehead, but kind of like what Jeff Buckel was hinting at, right now if you get a tag you are taken out of the pool so you can only qualify for one tag a year. But there is a potential if you start trading for someone to come in and grab a substantial market share. There is a market share issue. Maybe they should think about also no matter who has the tag, that is the only tag you are going to get for the year, only one tag per fisherman per year or something like that. If that is the intent of when you get a tag, you are taken out of the pool to get a second tag.

DR. MacLAUCHLIN: Well, just another tricky part of setting up a tag program like this is that this is for private anglers and for the charter folks. You may want your charter businesses to be able to accumulate, which they could really only do through a transferrable market. That is something else. This is tricky and it is not going to be perfect, and that is why you are getting it so early because we are still trying to figure out what to do.

DR. BARBIERI: Yes, and it depends on the goal, the purpose of the program that you are trying to achieve. With a tarpon tag program in Florida, this is the way we handle it. We have a limit of one tag per person if you are a recreational angler; but if you have a charter license, you are eligible to more tags. I don't remember what the number is, but you are allowed to buy more tags that are not assigned. They are assigned to you, but you actually use them for your customers, and you have to fill the paperwork for each individual customer that uses the tags.

DR. YANDLE: I think, first of all, Kari captured very well our main thinking when we were discussing the program, that allowing transferability would allow charters to accumulate tags on behalf of their customers who may not be aware they need to get a tag prior to making their vacation to the coast.

The other thing is just more philosophically. If one person has more value in going fishing twice in a year than some other person has in going once in a year or one person's plans fall through and they want to sell their tag; why not? I don't see there is sort of any deep moral issue with someone going fishing for snapper twice in a year.

DR. BARBIERI: Good point.

DR. CROSSON: Addressing the issue about somebody getting a large portion of the market, the tags are being distributed in a lottery every year. You are not going to have any kind of

permanent monopoly or your monopoly develop. Somebody would have to be willing every year to go down and try and track down everybody that would be willing to sell a tag. The annual nature of that is going to prevent this. That would be an issue if it was a permanent assignment of tags, but this isn't.

DR. BARBIERI: Yes, good point. Kari, do you have some more on Amendment 22?

DR. MacLAUCHLIN: This is Myra's amendment; I just got in there. No, I just wanted to show the ACLs for these, but I can talk about mackerel. I don't remember what was in here so I have to pull it out. Okay, we have one South Atlantic framework. You don't have this document. I'm just using it to remind myself.

This is another one that you will see again in April with analysis. Really, the council talked about it in September. First we went out in August and there were public hearings, so I went on the road with them and just kind of had these discussions with the fishermen that came. We talked about Atlantic group king mackerel and the commercial landings have declined.

It was like is this a problem, what's happening and got information from them and then what do you think we should do? The council kind of used that input to select some items and then some other items were added. I'm going to walk through these. These actions and alternatives are kind of – I got some guidance from the council in September of what they wanted, but the council hasn't even seen these. These are completely draft actions and alternatives.

This is just basically what the council is going to look at in March. They want to consider changing the Atlantic king mackerel minimum size limit, which is currently 24 inches. In late winter and early spring, they can catch a lot of undersized king mackerel, so there is concern about the discard mortality. They want to look into 23 inches between the Georgia/Florida Line and the Miami-Dade/Monroe County Line.

Action 2 would create an exemption from the Spanish mackerel minimum size limit for the pound nets. This is something that Michelle brought up at the last council meeting for fishermen in North Carolina waters that catch smaller Spanish mackerel in pound nets in the late summer. The council will consider an exemption to the size limit for Spanish mackerel in North Carolina waters with pound nets just in August and September.

Then we have another alternative in there for now that would exempt any Spanish mackerel caught in pound nets in August and September. Action 3; this is allow the addition of a portion of the third net in the Atlantic group Spanish mackerel gill net fishery. We are going to work with enforcement to come up with some alternatives.

What is happening here – and Ben might have to come and explain this – is that currently you can have two gill nets on board, but there are times when you catch more than the trip limit and in which case you can transfer a portion of one of your nets to another vessel, but they need to legally be able to have more than two nets on board to do this.

Then the last is consider changing the king mackerel trip limit in the East Coast Florida Subzone. This is the mixing zone, which is that area on the east coast of Florida where some parts of the

year the fishermen are fishing Gulf group king mackerel and some parts they are fishing Atlantic group king mackerel.

Right now from November 1, through January 31 it is 50 fish; and then in February 1 through March 31, it is either 50 fish if there has been 75 percent of the quota caught or it goes to 75 if less than 75 percent of the quota is caught. Then from April 1 through October 31, it is 75 fish. Right now we just have the no action alternative and then an alternative to make it 50 fish all season for everybody.

Some of this came up because the Atlantic group king mackerel – this is the percent of the Atlantic group king mackerel commercial quota that has been caught. It kind of goes up and down, but in the last few years it started to decrease, and last season it was at 55 percent. Then this year I haven't added anything to this since August, but I think it's around 30 percent of the quota that they've caught, and they are just about finished with this season.

There has been some concern from some people that there is something going on with the stock, but then we've also heard that it's a cycle and the landings go up and down. This is a graphic that shows the king mackerel trips. Basically in the areas where it is red is where trips have actually increased. This is the mixing zone area.

In the inset you can see up here trips have actually decreased around North Carolina. These are just informational things that we brought out. Then the number of vessels reporting king mackerel in the past few years has decreased over time. These are just things that were in my document FYI. That one will come back to you in April with some alternatives and analysis and have you guys take a look and make recommendations. That's about it. I can just take questions if you have any.

DR. GRIMES: Is there any provision to change these percentages of Atlantic or Gulf quota that you would be allowed to catch based upon what the actual mix of Atlantic and Gulf those years between the Volusia/Flagler County Lines and the southern tip of the state? Every so often could someone use otoliths microchemistry or whatever actual tagging to estimate what the actual mix is? Because that will change over time, and you really ought to be able to change these percentages based upon it some way or another to reflect it.

DR. MacLAUCHLIN: There is a SEDAR for king mackerel next year and John says that they'll talk about that, but Ben could comment, I guess.

MR. HARTIG: Yes, Churchill, it is dynamic just as you alluded to. The winters have been fairly mild in the last 20 years compared to the first 20 and there was quite a different migrational pattern. The one cold winter we had – I guess you remember two or three years ago we had an extremely cold winter. We had significant Gulf fish come back around to that Palm Beach area in the mixing zone, which they used to do on a yearly basis when it was colder.

Those fish actually stayed into April when we start counting them as South Atlantic. We caught another 700 and something thousand pounds of fish out of the Gulf stock that were actually counted as South Atlantic fish in the first two weeks of that month. We've done some work with weekly catches showing the trends on a warm year and a cold year and how they differ.

You can tease out that just on the weekly trends of how they're moving up or down the coast based on those weekly landings, which is very interesting. It was some of the more interesting stuff I've seen, even more convincing to me than the tagging, because it showed the fish moving county by county up the coast on a warm year when you had that traditional mixing zone and then that great big catch we had in that one winter did not go that way.

Obviously, it went the other. We don't have the numbers to prove it went that way unless we go back into the Keys. I'm not so sure that they have that much effort there. They didn't go north, which was pretty cool to see that difference. I think we've gone back and looked at these landings long term, and we're going to have several papers going into this data workshop that show the migratory patterns even stronger I think than the tagging data, which I think will be very helpful.

Yes, the latest science is otoliths microchemistry analysis, otoliths shape analysis are papers that have been done relatively recently. I participated in providing fish for those studies. Those are going to have to go be vetted through the data workshop as well combined with the tagging to see whether that shape analysis actually can be as useful as it is purported to be. We'll have a lot of stuff to look at in this next assessment, but thanks for asking.

DR. REICHERT: Anyone else? The SEP, did you guys have a chance to look at that and comment, John? No, okay. Is there anyone else? All right, thank you. Luiz had to step out for a second. Do you want to move on to the next presentation, Katelin?

MS. SHUGART-SCHMIDT: Hello, everyone, my name is Katelin Shugart-Schmidt, and I am a current Master student at Virginia Tech working underneath Dr. Jim Berkson, the last remnants of his Virginia Tech Lab. He is now at the University of Gainesville. The project that we've been working on deals with an estimation of management uncertainty.

Since it focuses on this region, we thought it might be interesting and applicable to some of the work that you do here. I know it has been a long day, so I promise that I will not use the words need for action, and my presentation will not be in NOAA blue. To start with, I know that more than probably any other group there is, everyone in this room is very familiar with the concept of scientific uncertainty. It is pretty much all you deal with.

But let's say that you woke up on Christmas morning this year and it turned out that we dealt with it; that we could sit in this room and know exactly what landings were best for a particular fishery, and we could say this year we want 100,000 pounds of catch for this particular species. Well, chances are once we actually put that regulation into place, we wouldn't end up catching 100,000 pounds, right? There are a lot of realities of fisheries that happen once a regulation has been enacted.

The focus of this project was to say once we've come up with the intent of a regulation, once we've decided what we want that particular landings to be, how do we account for the other things that happen? How do we account for the catastrophic events that lead to a decrease in effort or gas prices that change how a fishery works?

Now, of course, there are a huge number of factors that could affect this time of uncertainty, from weather conditions and catastrophic events all the way to stock crashes and changes in how

an ecosystem functions. It is pretty much impossible to go through and determine which one of these factors contributed to a particular amount of management uncertainty.

To say was it the hurricane that caused this to decrease by 20 percent; chances are yes; but was it fuel costs? That is harder to say. Instead of trying to answer that question, we instead thought we would try to answer the question of what is the magnitude of this management uncertainty. In the South Atlantic, when we set a regulation, how close do we actually end up getting each year to hitting that regulation?

Now, the way that we decided to do this was fairly simple. We focused on eight stocks in the South Atlantic that I'm sure you are all very familiar with. We were successful for most of these, because they tend to be fairly information-dense. The data collection simply focused on two phases; first looking at what the preseason estimates were of what landings would be for a particular regulation.

So when we set a 12-inch size limit, what do we want landings to be digging that out and then comparing that simply to the post-season landings estimate; what did we actually catch in a given year? The preseason estimates were taken from many of the documents that are developed in conjunction with this body of fisheries management plans, SEDAR reports, that sort of thing, and then just compared to the annual landings pulled out of the Southeast Fisheries Science Center.

I know this is a little bit hard to see from where you are, but just to give you an idea of why this was actually quite difficult to do, it turns out we've changed a lot in how we report our methods over time. Back, say, for vermilion snapper in 1991, when we put a regulation in place for a 10-inch length limit, we basically estimated the impacts like this.

We put together a table. Somebody did a simulation, we're not really sure who, we're not sure what went into that simulation, what parameters were used, but they basically said this is what we think will happen once this regulation goes into place, but not a lot of real information was provided.

We dug that out and then, of course, compared it to what actual landings were in those years. Then comes along the next regulation in 1998/1999, and we've maybe gotten a little bit better. It turns out now we have a person that did this particular simulation. We have an idea of where the information came from for it, but we still don't have a lot in terms of what methods were used to create that simulation.

On into the future, we are actually doing quite a bit better now, which is appreciated. The way that these results will be presented is fairly simplistic. It's just a relative error measure so actual minus expected, so that was what catch actually was compared to what we anticipated it would be based on our regulation; those post-season landings compared to our preseason target.

The results here are on a scale on the Y axis from 0 to 200 percent; 100 percent represents us catching exactly what we intended to catch with the regulation, because this is an adjusted relative error. On the X axis is just the year. Generally the nineties and two thousands is where we could generate data.

To start with an example of just one species, this is recreational gag grouper. You can see in the 1990s we actually ended up generally catching between 50 and 20 percent of what we anticipated we would catch when the first regulation went in to place. In 1998/1999 we put in Amendment 9 and our management uncertainty changed.

Now we're catching closer to 100 percent, closer to what we intended, but we are also having a couple of years in which we catch over, which didn't happen previously. This is also a good example of why management uncertainty composes a lot of different other factors. The regulation was to catch more in the nineties even though we caught so little.

We lowered that regulation and then we got closer to hitting it, but we also exceeded it on occasion, which we didn't previously. A second example is recreational vermilion snapper, which displayed a similar reaction to an amendment. Previously we were catching about 75 percent of what we anticipated catching throughout the nineties.

We put a new regulation into place and we then started catching quite a bit more than we had intended throughout the two thousands. More cumulatively then, this is the results of commercial and recreational stocks. The thing to notice is that the Y axis is changed from 0 to 200 percent to 0 to 650 percent, because in a couple of cases our recreational catch ended up being 400 to 600 percent of what we intended it to be based on our regulation.

I know this is a bit tricky to see on the screen, but on I think it is Document 27, both the recreational and the commercial, it should be easy to pull up on your computer. Split up then, this is again what recreational catch looks like for seven of those stocks. Generally speaking, recreational catch would exceed 100 percent of management uncertainty.

It averaged about 150 percent, meaning in general we were catching about 150 percent of what we intended based on our regulation. The lowest was about 30 percent and the highest was about 600 percent. In general we were over here. The commercial picture looks quite a bit different. The axis has once again gone down, meaning with commercial stocks we are quite a bit better about hitting our targets.

Now we're averaging about 80 percent and we're only ever going up to about 140 percent of what we intended to catch. Of course, the ones that are above the line are, of course, troubling, because that means that we are overfishing essentially; that we had an intention to catch a certain amount and we did catch more than that.

Although the ones below also potentially are an economic loss for our resource users, they are also not ideal. Just to look at the data in a slightly different way, this is to give you an idea of how it was distributed. The zero in this represents just a histogram. The zero represents catching 100 percent of what we intended. You can see in about 70 percent of cases we caught 20 percent more or 20 percent less than we intended to catch based on a regulation, so quite a bit farther out than what we would have anticipated.

If you split that out by recreational versus commercial, you can see again that commercial is much more bunched around the zero or negative two. Recreational has quite a long tail going out to these points where we catch drastically more than we anticipated. With that in mind,

fairly simply we have this process of our stock assessment, setting our targets and then enacting a management action.

When we go through that first process of setting that catch, we have to assess that scientific uncertainty; and maybe what this shows is we need to be a little bit more cognizant of what the management uncertainty associated with our management actions may be. In this study there weren't any clear trends between the type of management action that was used and the amount of management uncertainty that it produced, but perhaps that is something that we can continue to look for in the future as we go forward and our dataset expands. With that, I'd be happy to take any questions or have a conversation with anyone at a later date.

DR. GRIMES: It looked like most of the ones that really went over or under were the relatively rare species; did I see that right?

MS. SHUGART-SCHMIDT: We didn't find a very clear correlation between the size of the fishery and what the management uncertainty was, but I'd certainly believe you if that seems like a true trend.

DR. GRIMES: Even for individual species like black grouper, it looked like it was frequently weighing –

MS. SHUGART-SCHMIDT: In an individual case that could certainly be true, but overall there wasn't really a trend between the size of the fishery and the amount of uncertainty.

DR. CROSSON: I know not all of these species had a hard ACL or whatever it was called back in the nineties, and so I was wondering – the ACLs definitely in recent years, whenever these species have been declining, they are being increasingly restrictive in terms of what the overall target is. I was wondering if that was linked with an increasing difficulty for sort of staying within that target window. Just because you are shooting at smaller number, the chance of missing it by a substantial amount is going to increase. Did you see anything like that in your analysis?

MS. SHUGART-SCHMIDT: I didn't see any clear indication of that but I could certainly believe that it could be a factor. The hard thing with all of this is, of course, you can have a species that is collapsing and that will lead to very high management uncertainty even though we know it is not really the management uncertainty that is causing a problem. It just shows that it is a problem.

DR. BERKSON: I wasn't in the room to introduce Katelin. Like any good advisor, when I was needed, I wasn't available, but I do like to brag about my students. If I can just give some quick background on Katelin, she went to Randolph-Macon Woman's College for her Bachelors Degree. She was a NOAA Hollings Scholar along the way. We found her for the RTR Program, or should I say she applied. We accepted her into our workshop program as well as our summer program. Then we invited her to be part of our Masters Program.

Based on her work as a graduate student, she has been named the Outstanding Graduate Woman of the Year at Virginia Tech this year, and that is not just for the fisheries program or the college of natural resources. That is out of the 8,000 graduate students on campus. She also was just

asked this week to be the commencement speaker at graduate commencement on behalf of the students.

Anyway, we are very proud to have Katelin as part of the program, and she's graduating and considering potentially going to her PhD or taking a job; so if any of you might be interested, she is interested in looking at the Science Policy Interface. I think I can say she is a pretty good student. Thanks.

DR. REICHERT: Thanks, Jim. With that, thank you, we appreciate that. Let's take a ten-minute break and then we'll discuss the SAFE report.

DR. BARBIERI: Okay, folks, let's take advantage of the fact that we are a little ahead of schedule here mid-afternoon of the second day and try to get ahead on some of our items that were originally scheduled for tomorrow so we have more time tomorrow to get started working on our report. The next item on the agenda is an overview of the Draft Snapper Grouper SAFE Report by John Carmichael.

MR. CARMICHAEL: All right, this Attachment 25 is the Draft SAFE Report and reflecting the snapper grouper fishery now. We are trying to get this to where it is going to be useful to keep you and the council up to date with the management recommendations, ACLs, ABCs, allocations to the different fisheries, as well as what the landings were, including things like seasonal closure and such as they happen during the year and report all that information through this.

We are offering it up for discussion and review to really at this point see thoughts on content and how it is presented and if people have some better ideas for how we should present some of the information or additional content that might be useful. Some of the big changes from the past are showing landings for the different complexes, which is what the council is using for tracking of ACLs, adding in CPUE from the MARMAP program, reflecting all the ACLs and ABCs that are now in place.

It was mentioned the other day when we talked about the assessments and setting the ABCs is what type of information might the SSC want to keep up with on an annual basis. I think that would be – we mentioned that this is a place to maybe do that. If there is some thought, say, for a stock such as vermilion where we've set an ABC, if there are thoughts for what you'd like to see in the SAFE report so that you can judge how those stocks are doing relative to that ABC, we would really like to hear that as well.

DR. BARBIERI: Comments, questions or suggestions for John? I know John Boreman had brought up some issues. I think in that case it was regarding vermilion snapper when we had projections and we wanted to keep an eye on some of the metrics of the fishery and the population just to see that things were not getting out of hand. You made some suggestion at the time, John.

DR. BOREMAN: Right, that was not a projection; it was a multi-year ABC; was it vermilion snapper? We've been tackling this at the Mid-Atlantic. What we're going to be doing at our mid-winter meeting is looking at time series of catch and abundance indices and then choosing a bound like one standard deviation from the mean or two standard deviations or 10 percent above or below or 20 percent.

It depends on how much these stocks have wobbled over the years. That would be our bounds. If the landings go out of bounds, either too high or too low, or abundance index or some other measure that we're using, then that would cause us to go into bunker mode and rethink our ABC. Otherwise, if it is within a reasonable, historical variability, then just let it go. Yes, we were looking at – obvious ones or catch, landings, abundance indices.

Also we're looking at the distribution of the fishery. If there is a significant shift in the fishery, they move offshore, inshore or up the coast or down the coast, so the information that we were looking at is not representative of the current fishery or other items like that. I can probably go back and get the list of things we're looking at.

We're not finished yet. We all agreed in principle on the approach. Then we're asking staff to pull together a time series for all our managed species, all 16 of them. That is a lot, right? Then look at those at our mid-winter meeting and then make some judgments on a species-by-species basis what is an appropriate out-of-bounds line to draw.

MR. CARMICHAEL: Yes, here is one of the tables that is in there and it is one that shows the OFL, the ABC, the ACL and then the landings, in this case in 2011, so here is vermilion snapper. What we're showing is the ABC recommendation and the ACL and the 2011 landings, which are greater than the ACL.

Obviously, this is the type of thing which might catch the SSC's attention in a multi-year specification; but if you have landings above your ACL that would be maybe things that we would highlight for discussion and consideration. It shows it by sector so you can get the sense there. Then there is information on individual species. In this case. vermilion it shows the landings by sector with a line for the ACL. Of course, next year this will be updated, presuming that is going to change.

I've also got the commercial value – thank you for our economist up there, Kari, for putting this in there for a lot of stocks, which I think is also a good addition to this. In the case of this one we have the CPUE form the MARMAP – from a report that they do each year. It does give you the landings and it gives you the CPUE for stocks that have it, which hopefully would be what we need to judge some of these multi-year ABCs.

DR. BARBIERI: A quick question here, John, because this is what I was thinking about, since MARMAP produces their annual fisheries-independent report, whether you guys were pooling this and combining, which facilitates quite a bit in this SAFE report, or if we are going to look at the fisheries-independent data separately just by getting access to the MARMAP annual report.

MR. CARMICHAEL: WE took this from their report and just put it here.

DR. CADRIN: Yes, there is quite a bit of information here. I think the value of it is really in the comparative information, whether it is the life history stuff or the FMSYs. I wonder along those lines if the tiering for our ABCs could be included in here, which stocks we're considering Tier 1, 2, and 3 for each of the categories I think can help us with some consistency evaluations. Some of that is a bit subjective. If we had a table like that, if it is all in record, I think it would help.

DR. BELCHER: I know in some way it is actually kind of an allocation thing with the management; but in looking at that one table with OFLs and ABCs and ACLs on there, I know it shows commercial and recreational, but I know for me one of the things I think would be helpful, too, would be to see which one of them is actually – like in the case of almaco jack where you are seeing that the total landings exceed what the ACL is – to know which one is actually not hitting the bar. It might be helpful to see that ACL breakout, because not all of us are familiar with what those allocations are.

MR. CARMICHAEL: Yes, and I'll point out that is sort of how we had it at one point. It gets a little complicated in these cases; because if you go down to the next table, you see the actual allocations because we have these groupings. But perhaps if we kind of back this out and treat each one of these separate, maybe as a way, as Steve said, you organize it more along the tiers, perhaps; taking that idea further using that as some of the organization of the report for giving this information, it might let us get that in there without it becoming really busy. It is a good point to say which sector is having that overage occur.

DR. REICHERT: I had the same comment Steve made, and also it took us a couple of years to revamp our trends report. We are including a lot more species. We can have that available for every April SSC meeting, so we'll distribute that.

DR. BARBIERI: Is there any other input, comments or suggestions for John regarding the Draft SAFE Report?

MR. HARTIG: I found it very helpful and great to have a one-stop shop where all this information can be found; it's great. The only problem I had with it – and it is probably similar to the diatribe you had to sit through a couple of meetings ago when I harped upon sampling protocols – is in the otoliths it is listing as total otoliths collected.

I think it would be much more productive to have the otoliths listed by species, the collections, so we can know what species we're collecting sufficient amounts of data on, what species we aren't, what species we could possibly move ahead with an assessment with the number of otoliths we have and where we are lacking and put some direction possibly to those others. I think that would be very helpful.

DR. BARBIERI: That is an excellent suggestion and I am overhearing the staff saying that this is obtainable.

MR. CARMICHAEL: I would presume so since we do get the total sampling effort. I would think that it is also available by species. We get this in a disbursement from the Science Center, so we will have to ask them what is entailed in getting that additional level of detail on this.

DR. REICHERT: Yes, that is information we currently don't have in the MARMAP report, but we can include it. If there is other stuff that we can include, I will be open to any suggestions.

DR. BELCHER: Just a point for John; is actually council staff going to be responsible for generating the SAFE report?

MR. CARMICHAEL: Right now it is a collaborative effort between primarily council staff creating all of this and a lot of help from Jack McGovern at the regional office in terms of getting the management straight and putting things in there about quota management. But, yes, we are taking the lead on that. We get a big data file from the Science Center, this year sometime in August, and then all that you see, document and everything; yes, council staff is working on that.

DR. BARBIERI: Well, let us express our appreciation to council staff for taking this up, because this is something that we have been asking for a long time. It is an extremely valuable report both for us and the council. It is great to have it. We appreciate you putting the extra effort to put it together. Are there any additional comments or questions regarding the SAFE report?

If not I think we are ready for our next item, which is the SSC ORCS Workshop Report. John Carmichael is going to talk a little bit about what we did back at our workshop, and perhaps we can solidify a little bit of discussion of what is going to be coming up in April.

MR. CARMICHAEL: I thought you may have more to add about the particulars, but I suppose just about everyone who is here was there, so we probably don't have to rehash a whole lot of what we talked about. We did hold a workshop and Luiz briefed the council very thoroughly on that in September, and they seemed very supportive of the progress that you guys made and understanding of the need to have an additional effort and not getting as far as we had planned.

I think there was a lot of support for what we accomplished, and especially – Ben spoke very favorably, as I recall, at the meeting of the kind of last effort that was put forth there to really apply expert judgment to those quantitative scores and get some good qualitative information. That was very well received, which was nice.

Our plans now are that we'll hold the second workshop the day before your April meeting and try to essentially wrap up the work at that time. One of the big things left to accomplish was determining what the appropriate catch measure is, as I recall. We made good progress in terms of categorizing the stocks.

Now we've got to dig into that issue of what is the appropriate catch measure. That will probably take us some time, because there are an awful lot of options before you in doing that. That will be our primary focus and we will hopefully accomplish that in April and then be in the position to start putting this really into practice and maybe updating some of those ACLs, which at that time we should have all of this data stuff straightened out.

DR. BARBIERI: One quick thing to add to that, John, is I think we are going to have to start thinking about also the stocks that we removed from the ORCS application.; stocks that we felt were not having a reliable catch series or a catch series that was not informative enough for us to use for a catch level determination.

I tried to do a quick count here. We had a total of 43 unassessed stocks that we looked at in August; and of those we treated 20 with the ORCS approach. We still have 23 to be dealt with. One of the things that we discussed at the end of our ORCS Workshop was potentially creating a new tier in our ABC Control Rule that would be even lower than what we have now in our Tier 4 for application of the ORCS approach, because those are stocks for which we don't even have a

reliable catch series of landings or the level of landings is not really informative of stock productivity and not representative of what a proxy for MSY should be set.

In that case we are going to have to do something different. We have a few other approaches that we have used in the past. Obviously we are not prepared. We don't have enough time at this meeting to handle that, but perhaps this is something that we discuss in April. I mean at some point we are going to have to deal with those stocks in revising some of the methodology that we have applied in the past, and we're refining them to the point that we feel that we can propose a new tier.

MR. CARMICHAEL: I was going to say I think that is good; and maybe now if people have any ideas of things that could be considered for those, what do you want to call them, URCS, unreliable catch stocks, maybe we could put some strawmen together or explore some options that might help further that discussion in April. We would be glad to try and do that if we have some thoughts.

DR. BARBIERI: Well, right off the bat I would say one of the things that we had been using, which was looking at the 75th percentile of landings there; again using landings information for stocks that don't have reliable landings is a problem, but we are going to have to use some metric there to at least cap; knowing that for those stocks we are not going to have ABCs that are really even close to being valid proxies for MSY, but they may provide some level of catch that we know we are not going to biologically impact the stock and will provide the council with some catch level recommendations; so something for us to keep in the back of our mind for the April meeting.

DR. BOREMAN: For a stock that is a TURC, I guess the terrifically unreliable catch, there has to be a penalty imposed; a penalty imposed because we don't have the science, there is more of a risk there. Something to think about and to throw out on the table is for those stocks where we don't have reliable landings data, but we do have data now because we know they are being caught now, is to say that the catch level will be status quo and it cannot be more than that until we do have a reason to raise it to the next lowest level. I don't know if that is an incentive for the Service to do anything about it in terms of collecting better data, but somebody will start pressuring the Service to get out there and get better data.

DR. BELCHER: I still keep coming back to this question – and I've had it since the last meeting – is the fact we've always said that the OFL for these catch series were going to be unknown. That was with our first rule. I guess my question is even though we are now adopting an ORCS-type approach, how does that change? If before we weren't comfortable saying that these are measures of OFL, how come now we're actually going back to saying that these landings are now going to be an OFL?

DR. BARBIERI: That's a valid point for discussion. The ORCS approach was really looking at coming up with something that would be a proxy of sustainable catch that most likely we know it is not maximum sustainable catch, but at some level we are going to have to have some idea of the OFL. I guess in April, us as a working group if we decide that there is not enough information there for us to consider that level an overfishing limit, we don't.

This is part of the issue that we're going to have. John mentioned that we have a big part of this process to discuss in April – and this is a big part of it, deciding whether we can actually use that catch level to recommend both OFL and ABC or if we don't really have a good idea of OFL and we are going to just recommend an provisory or interim ABC.

DR. BELCHER: The only reason I brought that up was when you are reading through and it says one of the tasks is determine the appropriate catch statistic for OFL, whether it is the mean, the medium the maximum, whatever; we've kind of already been through that discussion, because we were ending up with the third highest point.

That is kind of where I guess in some ways I'm kind not understanding if we are going to re-pound the ground again. We've already had those discussions to say that we weren't comfortable with it. At what point are we going to at least kind of start where we've already had these discussions? We've made those statements that we're not comfortable with it as a measure of OFL, and the best that we would do is an ABC at 75 percent.

DR. BARBIERI: I understand that, but I think it would be useful for the council to have us revisit that discussion. I think a lot of times it is just a matter of having good documentation and reasoning. Because we actually set out to apply a method that is published and peer reviewed and that envisions the recommendation of an OFL, I think it has really put us in a situation that if we are going to depart from that, which I think the method is flexible enough to accept, it is just a matter of us having that discussion in that workshop setting, creating that documentation record and presenting that to the council.

I think it is going to put us in a much better, more comfortable position to have that discussion formally through the workshop and to document our reasoning for not going there or for going there if that is what the decision of the group is; similar to how we revised the table of qualitative attributes that we are using as indicators of exploitation level for the different stocks that we modified and we adjusted the table to better suit South Atlantic stocks.

But we have our report and after our discussions we have good documentation then of why we modified the table and what were the new attributes that were added, the ones that were removed, et cetera. My intent in April would be to take some time to discuss that and basically to create good documentation.

DR. BERKSON: I'm just wondering if it is realistic to think that we can get done everything we still need to do on this in a day given how much time it took us to get as far as we did last time. I think we probably want to be pretty much through with this rather than having this continue on and on and on, and so wrapping it up in a follow-up meeting sounds really good to me, but I'm not optimistic about being able to finish it in a day, but I tend to be pessimistic about these things.

DR. BARBIERI: To that point, Jim, I've thought about the same thing. One day is probably not going to be enough. My thought was for us to send something ahead of time or a little committee of the four or five amigos that handled that initialization of the workshop, would be to send out some thoughts in summarized form; basically what we did by e-mail right before the workshop that would basically explain some of the thoughts for what would be discussed and the methods that we are going to be using to discuss them; and try to get people to think about some

of these things ahead of time. That way we maximize the use of our time at the April second part of the workshop. But I agree with you, it is going to be a challenge to get all of that finished in one day. Are there any other comments regarding the ORCS Workshop?

MR. HARTIG: Luiz, that was a very productive interaction between the SSC and fishermen. It was kind of a feeling-out process at first. I think by the end of the meeting we were all on the same page and going in the same directions. I think you saw give and take from fishermen on a lot of the different species, about as far as everybody wasn't saying max, max, max. You had a lot of good input from individual species about, no, this shouldn't be that high or shouldn't be rated in that category.

Following on with this, getting into your next section about how you are going to deal with the lowest tier, we would like to continue to be involved in this process. I think that last meeting was very productive and to continue this in some manner would be very productive. I've got some things, and I've talked to you about some species that the productivity isn't indicated by the landings.

Some of those conversations we need to have. Like I said, I'll write a paper on some of those species about why and what the evidence is that those landings aren't showing the productivity. I think it would be productive to follow in the same lane as a collaborative approach between the SSC and then the heads of the AP like we did last time to continue down this path.

DR. BARBIERI: I completely agree, Ben. I think that is an excellent idea actually continuing to have council participation as well. I've thought that the workshop as a whole was excellent, and it was excellent because we had all the different perspectives and all the different types of input and were able to discuss all that together, and that made the whole thing much more productive. I agree, if we can follow for this next step with a similar type of workshop that would bring that level of discussion and expertise, I think that would be terrific.

MR. CARMICHAEL: That was my intention. That was the guidance I took from the last workshop is that we would bring all those same people back for this.

MR. CUPKA: Yes, and I would certainly support that. I think that was one of the better workshops once we got past some of that initial jousting and all. But I think as you move on to these next levels, it is even more critical to get the input from the fishermen. We've been looking for years for ways to try and incorporate the experience these guys have on the water. I think this is one way we could do that. We need to try and use that approach as much as we can, so let's do it.

DR. DUVAL: I want to just play ring-around-the-rosy here. I guess one more question -- and it might be Myra who is best able to answer this, but I know that there is nothing with regard to the SSC's discussions of the ORCS approach that is on the agenda for the Snapper Grouper AP Meeting that is going to be in November. I guess I was hopeful that we might be able to have something on that in April.

Jim's pessimistic assessment of time and being able to finish the work that we have set out for us in terms of finishing the ORCS application to all of those species, I heard that and I guess I am just hoping that there would be something that would be able to be presented to the Snapper

Grouper AP even if there are still some finishing touches that need to be put on the ORCS document, that the Snapper Grouper AP would be able to review at least. I don't know if that was part of the plan for April or not.

MS. BROUWER: Yes, the Snapper Grouper AP normally meets at some point in the spring before May 1, because that is when fishing begins. I usually plan the meeting some time in April. We'll just have to make sure we coordinate to have the Snapper Grouper AP Meeting follow the SSC Meeting, absolutely.

MR. CARMICHAEL: Right now the plan is that you would have the workshop follow up all day on April 9, and then we'd have an SSC meeting April 10 and 11. We can look into beginning the ORCS workshop earlier, and perhaps begin at one o'clock on the 8th, if you think you need the extra time.

We picked a day because that is what we discussed at the end of the first workshop that we needed a day. I think we are right here at this hotel and we can look at getting into the room at one o'clock on Monday. Instead of having the day to travel at your convenience on Monday, you will try to get here by one o'clock.

DR. BARBIERI: To some extent I think that would be better to have that extra time. I feel that the comments from Ben and David regarding the next step, it goes beyond just the ORCS application. It goes towards this Tier 5, what to do with the stocks at this next year for which we cannot apply ORCS.

Maybe if we have enough time, we could take advantage of that and start that discussion with the chairs of the APs and the council representatives here. I think that would be ideal. It may not be enough time; but if it is, it will save us time and money to have that taken care of there and then.

DR. BERKSON: I think there are some tasks that you can finish in whatever time you have put in front of you. If you have a half hour, you will find a way to get it done; if you have three days, you'll find a way to get it done. I don't think this is one of those tasks. I think this is going to require some minimum amount of time. We saw that trying to go through stock by stock by stock last time. We've got a number of steps after that. I just think it is better to plan for that.

DR. BARBIERI: Yes, is there any concern from anybody about adding this extra half a day to our meeting?

DR. BOREMAN: Just personally I have a conflict so I couldn't make it, but I can show up for the second day, I think.

DR. BARBIERI: The next item on our agenda is stock prioritization; how we are going to prioritize our stocks for stock assessment?

MR. CARMICHAEL: Yes, this is a follow-up discussion from the April meeting when we presented the annual research and monitoring plan that we bring to you. If you will recall, it has primary and secondary stocks with intentions of targeting different types of assessments and having different data collection needs depending on whether it is primary or secondary.

The point was made at that meeting that it would be nice to have perhaps some more definable, rigorous, qualitative approach to determining which stocks are primary, which stocks are secondary, and which stops should rise to the top of the heap in terms of doing stock assessments.

That is what this time is set up for just to give you an opportunity to have a discussion, give some guidance as to what you'd like to do here, really get some feedback from the committee and take this as far as you can. It would be very nice if you could come up with some type of criteria that you think should be considered in making stock priorities. We could begin to put that in place over the next six months as we do the next version of the research and monitoring plan.

DR. BARBIERI: Comments or questions for John regarding this prioritization? Well, I think that as one comment I would say that I think it's a good idea. I think it is a good idea for us to prioritize. Personally I think we need to go beyond just prioritizing. I think we could, like we discussed earlier during the meeting, that we discussed this issue of how we are going to handle SEDAR assessments and the fact that SEDAR assessments might be handled through different tiers. We have been doing this is an informal way.

I mentioned the example of the yellowtail snapper benchmark assessment that we conducted in Florida. The idea was we actually provided the analytical support for the assessment, but we felt that this was not a stock that had any controversy or any problem with data collection or information for the assessment that required a data workshop, an assessment workshop.

I contacted the SEDAR folks and we discussed this and I requested can we have this assessment done just by FWC, by our analytical team; we are going to have the lead analyst discuss internally with our other assessment analyst and then go to SEDAR for the review part. This was added to SEDAR 27 to be reviewed with Gulf menhaden at the time. Unfortunately, the assessment wasn't ready for prime time by that time.

We had some horrible patterns with the residuals and having model fits, a completely different story, which eventually got resolved, but it took a while to resolve that, and we felt this is not ready for prime time. We removed the assessment from that review process, but then we still felt – and this is why I'm telling this story – we still felt that since this was a benchmark assessment, it would make the most sense for it to be reviewed by the CIE before coming to the SSCs.

We requested support from NMFS to have the assessment sent to the CIE for a desk review. They provided three desk reviews for the assessment, and it came before the SSCs; and by that point we really had a very good review of the assessment. That's a model that I think is just a matter of coordinating perhaps ahead of time with the SEDAR folks.

But discussing with the Steering Committee, can we propose to save you time, can we propose some model of how we would handle this tiered approach, even if we have industry or some other NGO or academic analysis that had been conducted or an assessment that could be integrated as part of the SEDAR process.

It is just a matter of coordinating ahead of time and fitting into the appropriate tier. It is something that I think we need to discuss some more and make some proposal to the council and

to the steering committee to that affect that would be complementary to this stock prioritization process. Jim, you had a comment?

DR. BERKSON: Yes, I wanted to mention that it is my understanding that Rich Methot is working on a document on how stock assessments could potentially be prioritized. I believe that is still in draft form. I'm not sure what state that is in; but when it is done, I think it would be extremely helpful. It might be beneficial to find out what state it's in and when it's going to be out.

DR. BARBIERI: Thanks, Jim, that would be very helpful.

DR. BELCHER: I think just because of past experience – and Marcel can speak to the frustration with this – that maybe if we do decide to look at the prioritization, having folks from the SEDAR Steering Committee that have made those decisions, because in the past we've had species get bumped all over the place, and we've had recommendations about what we think priorities are. Sometimes it holds and sometimes it doesn't.

I think in some ways maybe having their input as to why, when we say something is a priority species and it gets bumped down a list, we can understand at least some of what input they are putting in there to say, no, it is not as high a priority as what we think these other ones are. At least everybody has kind of got some say as to how that priority is being established.

DR. BARBIERI: Just to that point, I guess I'll defer to Chairman Cupka as a member of the steering committee.

MR. CUPKA: We've certainly had these discussions in the past and we know that it creates problems when all of a sudden we start changing priorities; because the people who are collecting the biological samples, it affects their ability to provide that information as needed to do the assessment.

I thought one way we were approaching some of this – and John you can correct me on this, but we tried to put together a committee that would involve some of the people who were working on collecting the biological samples so that there would be other individuals involved in the decision process.

I don't know how well that has happened or whether it has made it better or worse, but I think it's something at our next steering committee meeting we need to review just how that approach is working or not working and see if there are other ways to tweak that. But certainly the steering committee is very cognizant; and I always try and remind them whenever we meet together that we do start changing these priorities – and sometimes there are valid reasons for doing that, but it creates all kind of problems with the whole SEDAR system when we do that. We want to try to keep that to a minimum if we can. John, I don't know if you have anything to comment on that committee we have put together.

MR. CARMICHAEL: Yes, we have and generally what they will kick into is when we are doing the scheduling and balancing when the workshops take place. Then like we have the preliminary intentions from the councils for 2014 and then we'll run it by them and find out if there are any

issues; and also looking forward to 2015, are there any concerns that they have with particular species that don't work well together.

I know Marcel has been involved quite often in our planning efforts to try and balance that kind of stuff. In terms of trying to keep you guys informed about the changes, that is one of the reasons at every meeting we go through that first step of here's what happened with SEDAR, like at this meeting where I thought I tried to describe why things rose to the top like black sea bass and why red snapper ended up like it did, and all that kind of stuff, and the reason for red porgy.

If anyone wants more detail than that, there are reports from every steering committee meeting. They are available on the SEDAR Website. The meetings are public. Lately they have been held by webinar. Anyone is welcome to jump in and listen if you really want to hear what is going on. Marcel in particular has done that quite a bit because of the impact at what this schedule really has on his group's work program. But, yes, it is the SEDAR Technical Committee is what it's been called.

The idea is that they are going to help head off potential major species conflicts or issues now. Their role was never envisioned as having a lot of influence necessarily on the priorities. That's always envisioned as coming up through the councils and being set at the steering committee level.

The balancing there often is in response to developing management issues where there is just concerns that are huge, which has been the case in like black sea bass and red snapper lately. That is really where we have had some stocks on there, but then we are also obligated to keep up with rebuilding stocks.

That is probably one of the priorities right now that is perhaps at odds with this SSC and the Gulf SSC as well is that the managers feel a pretty strong obligation to not get so far behind on these rebuilding stocks, especially ones that under the current management scene might have very restrictive landings, and then you're seeing overages, enclosures, because the stock seems to be doing better, with black sea bass being probably the best case in point there.

That has taken a toll in terms of doing new species, which the steering committee talks about every meeting, but until we get more assessment resources we are not going to make progress. That is why hopefully we can make some things like we talked about here about wreckfish and shrimp, and pursuing some sort of SEDAR sidebars and be able to get some of these stocks moving and increase our output.

DR. BOREMAN: In the Mid-Atlantic we're going through similar exercises at least on the SSC in terms of prioritization. Our intent is as we develop our five-year research plan, every time we develop an ABC we have a laundry list of information we'd love to have that is not out there now, surveys and whatever; but when you have all these species, how do you sort all that out? Mark Holliday, who works at headquarters in NMFS, has come up with a decision tool where first we rank the species and then within a species we rank importance of what we want to study and so on.

But when you put it all into a matrix and you score it and it comes out, and it's a pretty good – it forces this discussion and you start by agreeing on what criteria you are going to use. For us the first thing is to rank the species. We have come up with five criteria, the commercial value, recreational value, whether the stock is overfished, the more overfished the higher the rank, the more overfishing is occurring on the stock the higher the rank.

The fifth one is impact on other species; is it a forage, but also is it a choked species? Like right now our scup fishery and our squid fishery in the Mid-Atlantic is limited by butterfish bycatch. Butterfish, it's a forage, but it's also a choke species. We have a lot of those down in the South Atlantic where red snapper is obviously impacting the ability to catch and meet the ABCs for other species. We're working on it, too, and this is what our train of thinking is on it.

DR. BARBIERI: Well thank you. I think we will continue this discussion, John, in April. We might beef up our recommendations a little more as we prepare our report, but at least come up with a list of what are the different issues that we want to address in terms of getting the prioritization list put together and our suggestions for modifications and improvements to the SEDAR process.

DR. BERKSON: Well, for the April meeting perhaps we could get some more of the background documents out for people to look at ahead of time like the method that John is talking about. Hopefully, Rick will have his paper out by then. There may be others we could look for as well so we have some background on which to base our discussion.

DR. BARBIERI: Okay, are we ready for the council work plan update?

MR. WAUGH: The council went through a ranking process at the September meeting and came up with our work plan for the remainder of 2012 and into 2013. Already there has been a little bit of change to this, but this will give you an idea of what we're looking at right now. To finish out the year, we're looking to approve and submit Regulation Amendment 13 that you looked at here at this upcoming December meeting.

Regulation Amendment 14 we'll work on March of next year and approve for public hearings in June so you'll have another shot at that. We hope to finalize that at our September meeting next year. Emergency rule for yellowtail we've already submitted. Regulatory Amendment 15, that is going to be finalized at this December meeting.

What is interesting here timing-wise; we've got one amendment and two regulatory amendments that we're approving for final action at this December meeting. It is going to be quite challenging to get that done, because it's gone from the council giving us direction at least meeting to completing that at this next meeting.

In addition, we are splitting out the actions dealing with the red snapper framework as a separate amendment. There is quite a bit coming up at this meeting. We're also approving – well, you got the presentation on speckled hind and Warsaw. We'll be getting a much-reduced presentation just focusing on the reorientation of existing MPAs at our meeting and then get some guidance in terms of what alternatives they want evaluated and timing.

Amendment 22 you have looked at. We'll talk about setting a timeline on that next year. What will become 29, the allocation in ORCS, you all talked about that. We'll be setting a timeline next year as well. Dolphin and wahoo, we have to go in and look at establishing a framework, ABC, ACL adjustments based on the similar analyses that have been done for the snapper grouper species. That will go out for scoping, and then we will finish that up during next year, so you'll have a chance to look at that at your April meeting.

Golden crab catch shares is on hold; we'll discuss in March and figure out where we go with that. CE-BA 3, which you looked at here, we hope to finalize at December, and that will make some improvements to our data systems and law enforcement. Coral Amendment 7 we had planned to try and approve that for public hearings at this upcoming December meeting and take it out to public hearings in January.

There is a good chance that will slide to our August public hearings; because the Deepwater Shrimp Advisory Panel has asked us to make sure we use the updated VMS data, and we won't have that until early next year. Then we've got the Mackerel Amendments that you have gone through.

We had hoped to approve those for public hearings at our December meeting, but that will slide in all likelihood to March. It is planned to slide to March, and then we would take those out to public hearings at the August round of public hearings. You'll have another shot at that and it basically will pick up with the timing that we've got for the framework here; so approve for public hearings in June, finalize in September.

That will still get regulations in place in time for the following fishing year. Our Dealer Amendment should be sent in for formal review any day now. As you can see, we've still got quite a bit on our plate for next year. Longer term timing, we've got our Fishery Ecosystem Plan that needs to be updated in 2014, and we're laying the groundwork next year to begin doing that. I'd be glad to answer any questions.

DR. BARBIERI: Are there any questions or comments for Gregg regarding the council's work plan for 2013 and beyond? I guess not. Thank you, Gregg. I think we are getting there; we are getting to other business.

MR. CARMICHAEL: Do you have any other business?

DR. BARBIERI: Well, here on our overview we have the additional SEP Items Report by John Whitehead.

MR. CARMICHAEL: That's the placeholder just in case there were any items that the SEP discussed which he didn't already get to report on.

DR. BARBIERI: No additional items from the SEP? Thank you, John. Are there any additional items for discussion? We had discussed this issue of presentations to the committee or analytical reports to the committee like the MacCall Assessments, the MacCall and the Butterworth presentations that we had yesterday and how we would handle those. I would be more than glad to entertain some discussion on this issue.

My personal opinion, and I'm going to put this out there up front, is that those things should be handled through our regional stock assessment process. I don't mean having assessments done by the Science Center or having three costly and time-consuming workshops. I mean having folks aware that since the same way that we collect public comment, that there is a deadline for submission of public comment and written comment to the councils; that if there is an externally conducted stock assessment or any analytical report to be given to the council or to the SSC, those people should coordinate with the SEDAR program.

After we develop those tiers, we will be given the opportunity to participate in the process, as Jim pointed out to Dr. Butterworth yesterday, because we'll be given some more knowledge of the schedule or the plan for the analysis to be conducted. There are a whole variety of ways that we can handle that. I think that making it clear that our councils have a formal regional stock assessment process in place and a coordination process as well should take care of that issue. I would like to hear other opinions or comments to that.

DR. VAUGHAN: My only comment is that I want to stress the importance of the data workshops. Now, that is what I thought was always critical in the way we set up SEDAR. There is a lot of knowledge out there; and when you are doing a first-time assessment on a species, it is amazing how much data comes out of the woodwork.

I'll just say in the old days when I used to do it in the closet at Beaufort, as I've been accused of doing, then later on at these data workshops there is a lot more data sometimes out there than you might expect. When I used to do menhaden, of course, we would the source of menhaden data at Beaufort so that wasn't particularly an issue.

Even there a lot of fishery-independent data turned up from the various states in the Gulf and the Atlantic; that after several sequences through the process, new data still would turn up. I just want to emphasize the importance of a data workshop, especially for a new process for a given species.

DR. GRIMES: Not to be overly bureaucratic, but we had a discussion of review of third party assessments in coordination of this and review of those. We never really reached any kind of conclusion about it. Jim Berkson suggested the other day, if I understood him right, anyway, that we ought to have a little more formal policy on this, should we, something you refer people to when presented with this. We're going to see it more and more would be my guess.

DR. BARBIERI: Just to that point, Church, my understanding of this issue, it involves two separate topics. One is the actual process of coordination of submission of analytical work, primarily stock assessments and the like, to the council that would come to be reviewed by the SSC.

As Jim pointed out yesterday to Dr. Butterworth, if somebody is conducting an assessment in their closet and eventually it comes up here to us without us having any previous knowledge of that, it is an after-the-fact notification for which we didn't really have any ability to participate. Perhaps our participation is not warranted or necessary in every specific case, because that could become very burdensome for us to be engaged in every single analytical process that could be brought before the committee.

But at least we'd be given that opportunity if those people know to coordinate with the SEDAR process. Another thing, which I think is very important, is what are the standards for document submission and for presentation to the SSC after that coordination took place, so we make sure that we have the proper materials and we have a presentation that is informative in front of us, enough time to review the documentation so we can actually – I'm seeing those as two separate and important – both of them are important processes; one being coordination with SEDAR for submission of analytical stuff and the other one being the one that you mentioned. If I understand your suggestion correctly, this is something that we could develop some set of criteria for document submission and for presentation, timing and the like.

DR. GRIMES: Yes, sort of. For example, you say coordinate with SEDAR; what does that mean? Who owns SEDAR? Is that the council or is that the National Marine Fisheries Service?

DR. BARBIERI: To that point, SEDAR has its own organizational structure. To me you call John Carmichael, Julie Neer, or Julia Byrd for South Atlantic, and you'll say we are in the process of developing – I mean, that is what I did. Every time that we have an assessment that we want to bring, we actually make proposals or bring those proposals to the SSC.

We'll communicate with SEDAR and it goes before the steering committee. They have the option to remove those assessments from the schedule. Now, it is easier for us not to have our assessments removed, because we try not to get a burden on the Center. We provide our own analytical support.

But they have that discretion, and we have to – our reports to SEDAR have to follow the SEDAR formatting guidelines. I coordinated with Julie or I haven't yet with Julia, but she sent us deadlines. All the reporting has to be done according to SEDAR standards even though it was not done by the Science Center.

It may not have had – like yellowtail snapper, three workshops were done in the closet at FWI. Those are the things. It is not completely thought out, Church. We have to think about this and maybe put together a list of suggestions, but those are the things that I think we need to start discussing.

MS. LANGE: First, I agree with you that there are two issues at point right now. One is how do we do the SEDAR, like the SEDAR light that Michelle mentioned. The other one is what form and when do assessments come through the SSC? I disagree with you when you said we don't want to be burdened by all these different ones that come through, because I think it is the SSC's role and responsibility to provide recommendations on any assessment before it gets to the council. Even when SEDAR approves it, the SSC is supposed to go through and recommend that, yes, we agree with what has come out of SEDAR. I believe that is the format.

DR. BARBIERI: Anne, what I meant to say is that we would be there participating in that. Like in the case of Dr. Butterworth's analysis or Alec MacCall's, that we would have coordinated – traveled to the west coast or traveled to South Africa to conduct – I'm not saying our review here. It's that usually we have participants in this process throughout. And this is one of the things that Jim pointed out yesterday is were we participants or given the opportunity perhaps to participate.

MS. LANGE: I guess that is the key point here is that there needs to be some set policy, which is what Jim was pushing for yesterday. I think the longer we delay that discussion, the more times we are going to wind up with suddenly at the last minute getting an assessment. We've got a day now.

It seems to me like we're rushing through to finish up today the meeting, because we are going through the agenda. It seems to me when we have quite a bit of time for this currently scheduled meeting, that we could get some ideas down and have some open discussion amongst ourselves on what we as a group consider important criteria for getting other outside assessments submitted and reviewed.

DR. BARBIERI: Absolutely, we can do this, we have time. We are going to have quite a bit of time between the rest of the afternoon and tomorrow and we can get this started now. I'm just trying to get a feeling for whether the committee was prepared to start this discussion immediately. But I agree with you, we can actually move forward with that.

DR. BELCHER: I just wanted to kind of stress – because this is frustrating as past chair. We talked about this last November and we kind of pushed it off the agenda. Now all of a sudden we are back in full circle. It is frustrating to just sit and watch us go through this. One minute we think we need to do it and we start working on it, well, we can kind of wait. Now all of a sudden we are pushing it as another high priority again.

Either we need to go ahead and pin it down and do it or kind of just let it go. I agree it needs to be done, the same way I agreed with it last November, last April. I'm still agreeing with it. It's frustrating when you watch that wax and wane of priority on it. Is it a priority? We have a whole day basically to talk about it. I mean we're at the end of the agenda. Is it enough of a priority to hash it out over the next day or not?

DR. BARBIERI: Absolutely it is.

DR. VAUGHAN: I'm going to go ahead of Jim, because he's frustrated and that is good for him, but I'm going to beat my dead horse one more time. I'm just using wreckfish as an example. One of my curiosities is the data that they used in the wreckfish assessment. I don't know how good it is.

I'm assuming what Alec MacCall has; I presume he got it directly from the Southeast Center; though I'll have to admit there are some inconsistencies in what I have seen from them versus what I had back in the nineties that was generated and stored locally at Beaufort. That is where all the wreckfish data was.

I walked across the parking lot to get the data and it doesn't agree with some of the data that I've seen in recent years. I think there are some issues with the wreckfish landings data in the nineties and early two thousands. That is the kind of thing that always bothers me if when we see the assessment, it is a finished product. That is why the data workshops I think are critical in any of these assessments. To be honest, the few times I've been burnt have been over data issues and not model issues.

DR. BARBIERI: I understand, Doug, and I don't disagree with you. The problem is can we afford it? Can we afford the time and do we have in the Southeast U.S. the resources to do it? I was looking here while you were talking for the presentation that John Carmichael gave at the ACL Science workshop in February 2011, which was basically a summary of SEDAR and the changes that needed to be made for us to be able to keep up with the requirements of the ACL.

There were three issues; transparency, speed and timeliness and quality; pick two. I thought that was a very good way to handle that, because in reality we all know what the ideal is and what we would like to have. If we are not there yet, can we come up with an interim plan that will allow us to go through the number of stocks for which we have to provide catch level recommendations?

Until we can have the resources to afford – one of the problems last week that the Gulf SSC had is that there are some of the assessments for a species that are as relevant as gag that are being proposed to be assessed through SEDAR solely through webinars. True or false, what the reasoning was; the discussion was because we don't have the money to send all these people. That was what was presented at the council.

It turned out it was incorrect, but one way or the other that is the issue. This is what made me think, going way back to when Nancy and Jim and the others started talking about SEDAR, and the idea at that time that I can remember was that SEDAR was not going to be a process that was going to be used for every single assessment in the Southeast U.S.; that we would prioritize only our most contentious and controversial stocks. It is great in providing transparency and it is great in providing quality, but it is very expensive and it is very time-consuming. Do we have the resources to do that for every single stock that we have?

DR. VAUGHAN: Clearly not.

DR. BARBIERI: Right.

DR. BERKSON: I think this meeting we saw why this is pressing, and why we have to deal with this, and that is because we had two wreckfish assessments brought before us that didn't go through any kind of process. It is no longer hypothetical; we had it in front of us. That is why we need to have a process in place. If we'd had one before they were brought in front of us, we would have been in even better shape.

Now, there need to be two oversight processes taking place; one by the Southeast Center, because ultimately they have to certify regulations as being based on best available science, and then there has to be an SSC oversight process. As we talked about yesterday, our oversight doesn't have to be the exact same for every type of assessment, in my opinion at least.

If we are talking about a production model based on one CPUE index, we don't necessarily have to be looking over somebody's shoulder to the same extent that if we're doing a statistical catch at age model. We've got different tiers of assessments and data that will require different degrees of oversight.

If the theory is we'll just have all these people doing external assessments go to SEDAR, how is SEDAR going to decide what tier an assessment is and what level of oversight is involved? It is

a very incomplete process if we tell them just to go to SEDAR. Who better to state what level of oversight is required to review than the SSC, who needs to do the actual oversight in review? It is sort of kicking the buck out or skipping the important part of the process if we say we don't have to get involved in that.

DR. BARBIERI: No, I'm not saying we don't have to get involved. I just don't think it is our role to play that one – our responsibility to play that one role. I do think that the SEDAR program has staff that is capable of making that call. Now we could decide – and I'm not against it – we could decide that people would send a list that will come before this committee, we'll look it over; or if it goes to SEDAR, SEDAR requests input from the SSC, I'm not against it.

But I'm just saying if you think about STAR and SAW/SARC, and SEDAR, each region has its own assessment process, and I think adapting ours to be more inclusive, more flexible in format to be able to absorb and help us coordinate it with the agency and all the other parties would be a benefit. But I agree with you, we might have to play a more direct role in actually recommending what level of oversight we provide.

DR. YANDLE: Okay, before somebody jumps in on me, I'm going to go. I just want to agree with the need to discuss this thoughtfully and sooner rather than lately. I'd definitely support using this miraculously appeared time tomorrow morning. The thing to me is regardless of what the rules are, we need some decision rules guiding us in how we are going to make these decisions of what we look at and how we look at them.

When we develop them, we need to be aware of having a process but at the same time allowing for some flexibility and responsiveness in that process. But at the same stage, we need these decision rules, because otherwise we are coming very close to slipping into ad hoc decision-making.

DR. BOREMAN: Tracy had my first comment. From the perspective of a former Center Director who dealt with this in New England, and my friend, Doug Butterworth, sent us through a few hoops there showing up at a council meeting with an assessment, which is an alternative assessment on cod – I believe it was cod – that was totally away from what we were working on.

The fact that it took us a long time to get his algorithms and all the background data that he used, get it out of him to share, that was a problem. First, I don't agree with the statement should be done through the SEDAR process. I think it should be something like should be done through a SEDAR-like process where you have independent peer review of the assessment.

I'd like to see the datasets go on for any assessment. I got pushback from my staff up in Woods Hole on this, too, but when you pull together the datasets for an assessment, put them online so anybody in the world can take the data and come up with an assessment and bring it to the assessment workshop. That is where you have your dueling assessments and so on.

But I'd like to see a process, and the Magnuson Act does not require the SSC to go through the SEDAR process. It says that we are to get peer-reviewed information through a peer-review process. In the Northeast we've done assessments that were done outside the process. The ASMFC does some, where they go out and they hire CIE; or it doesn't even have to be CIE, just

recognized independent peer reviewers to review the assessment and come forward with recommendations.

I think that is the essence of it, too, is just to maintain the flexibility in the process; the willingness to share information and putting the information on the web so everybody can have a look at it and a fair shot at it, too. Then if a person comes in with an assessment who is not an agency person from the Center, they have to express a willingness to share their information, their background and their algorithms.

If they have special software that they are using that is not part of the assessment toolbox, they need to have some method of verification or validation that software is acceptable, et cetera, et cetera. That is the problem we've had. I don't know; probably Steve knows more about this than I do. I was just carrying the flag for the troops, but that was the problem.

We had people come in with their data or with their assessments and refuse to share their raw data, because its academic privilege or whatever, and it brings everything to a halt. Also to the point when you come to an update and it is a person's own personal software package, you've got to go back to South Africa or whatever to get updates because nobody else is allowed to run the software. Just keep those processes in mind, too. I think we should have a more open discussion to this; and I agree we should take the time to talk about it and business rules I think are a good way to go.

DR. BARBIERI: All very good points, John, but there are some practical issues here that we are going to have to deal with, and I'll tell you one. As soon as we were not able to meet the deadline to have our yellowtail snapper assessment reviewed by CIE with SEDAR 27, which by the way the agency was picking up the tab for that CIE review – somebody has to pay – I contacted CIE and I talked to Ménage.

I said, "Listen, Ménage, I would like to set up a contract. How much does it cost; we need a desk review for yellowtail snapper." He said, okay, the standard price is $50,000. This is standard – by the way, without going through some discussion with my board of directors, I cannot even approve this, because in reality CIE has a contract through the agency to avoid a flood of third party assessments.

DR. BOREMAN: It doesn't lock you into going with the CIE. There have been a number of peer reviews where we went outside the CIE. The recent one we had on market shares for clams in the Northeast that we're dealing with, we went out and hired our own panel, the council did, of independent people, as long as they are independent scientists.

DR. BARBIERI: Who are we, John? This is something that, yes, the council staff and I guess the council would have to weigh in as well about their willingness. My suggestion of SEDAR is simply the fact that it is already a process for stock assessment coordination and review that actually involves the councils, coordinates with the Science Center and integrates with the interstate commissions, ASMFC and Gulf States Marines Fisheries Commission, South Atlantic, Gulf, Caribbean plus NMFS. They have paid staff to actually handle this coordination process. It is just a matter of can we perhaps improve our SEDAR process to make it a little more inclusive. There are other ways to get there. The thing is who is going to handle the cost and the administrative burden of those other issues if it is not through SEDAR, which is already in place.

DR. BOREMAN: But my point is if somebody comes forward willing to handle it, we should be flexible enough to accommodate it, and say, no, you've got to get in line on the SEDAR and we've got you down for a reservation now for 2024; that is when we're going to get to you. No, if there is a way, somebody is coming forward and people know how to do that.

If it's an important like red snapper, I'm sure when push comes to shove and they said we can't get to red snapper in four years, all of a sudden we'll see a rider on the budget, giving money to the South Atlantic Council through the agency saying this money is to conduct an assessment of red snapper. It could happen. I just want to make sure that the system is flexible enough to accommodate something like that.

DR. CADRIN: I'm not hearing much disagreement. I think that we all have the same principles. I think we don't have to start from scratch. John mentioned Magnuson has National Standard 2, that management should be based on best scientific information available, authorizes the SSC to advise the council most specifically in ACLs but on anything related to management.

I think National Standard 2 Guidelines are still draft. I don't know if anyone can clarify that or not, but I think they are still draft. The way they are written is that best scientific information available is determined through these regional peer review processes, so SEDAR. But the SSC recommendations can deviate from the regional peer review as long as they're justified and the justification is provided.

If we go back to the second National SSC Meeting, those of us who were in St. Thomas heard that the interpretation of those was that NMFS determines best scientific information available for the Secretary of Commerce, and the SSCs provide best scientific information available for council decisions.

As everybody just said, we serve the council. If the council wants us to consider new analyses for wreckfish, they are authorized to task us to do that. I think it is responsible of us to come up with a policy in how we want to do that and live by those policies, but I think really the decision is up to the council.

There are principles that we've touched on throughout the discussion, National Research Council, AFS, the Wildlife Society have all determined the principles of best scientific information available. That phrase is in a lot of science-based management laws; so relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation, peer review are all of the touchstones of best science.

I would think whatever we develop; we would want to consider those. I agree with you; some of those are tradeoffs, timeliness and inclusiveness, for example, but we want to try to reach the ideal as much as we can. In New England we have had some issues that were just not suited for our regional peer review process.

For example, we had an Essential Fisheries Habitat Omnibus Plan. Stock assessment experts are not – our stock assessment review process is tailored to stock assessments and this was not, so we brought in different expertise. It was done under the council SSC umbrella. It was not a plenary, it was not all the SSC members, it was a representation of the SSC. It can be done, it has been done and I think that it would be wise of us to develop a policy for this.

MS. LANGE: John, where did the two wreckfish assessments that we got a couple weeks before; how did they come to us? Were they specifically sent to the council and the council requested that we review them or did they come directly to the SSC, to you or your staff?

MR. CARMICHAEL: These are complicated and perhaps not good examples, because there are lawsuits involved. My understanding is that the one from Butterworth came through the Justice Department as a result of impending litigation; and the MacCall effort, as he mentioned, has been underway for quite a while. That came along with this I think to expand out the amount of information available.

MS. LANGE: That was one. I guess that is sort of how they will come, because we've had some others in the past where they have come in similarly through the council. The other issue is – and John touched on it – other groups like the Atlantic States Commission have set peer review processes.

They use SEDAR for southern stocks; they use the SAW/SARC process for more northern stocks. But they have a three-tier system, and it's been a few years so I can't remember specifically. The highest tier is going through SEDAR or SAW/SARC, but they've got two additional levels of assessment being conducted and also the peer review associated with it. I think one is within the state agency or several state agencies, but there are other templates out there. Steve mentioned as well that there are other ways to do it. I think we should pursue some of those.

DR. DUVAL: Because my council chairman is sitting right next to me, I don't want to express any opinions that might conflict with his. I agree with what John said – and Anne mentioned it – I've advocated for something that can be more inclusive, a SEDAR like process. I guess as a council member I would be fully supportive of this group developing some kind of decision tree or policy document in order to deal with these kinds of unforeseen circumstances.

I think those are only going to become more frequent. I mean the fishermen know that decisions have to be based upon the best available science. They know that in many instances, unless there is a stock assessment or stock assessments update, oftentimes management is not going to change.

The allowable catch is not going to change; and when they see changes in the environment, when they see changes on the water, and when is the gag assessment going to be, well, unfortunately, we kicked it down the road one more time. If there is a way to allow for more flexibility in the process in order to have some of these assessments occur, I see this inter-lapping and intertwining with your prioritization process that you spoke of previously. I'll just leave it at that and turn it over to David.

MR. CUPKA: When we set up the SEDAR program and as it has evolved, I think we always envisioned a point where we would get to where we are now, and that is we would see assessments brought to us from outside the SEDAR process. I don't think we've ever had a problem with that. In fact, that may be the only way we can get some of these assessments done that need to done that we haven't been able to get to through the SEDAR process.

Part of the problem and part of what you have been talking about are standards. Several years ago I think we started some of these discussions with the SSC back with Jim and all. We definitely saw a role for the SSC to take a look at some of these assessments that are brought forward and to make a judgment on whether they met certain standards or whether we ought to proceed with considering them or not.

I think a couple years ago some of these discussions were started. Unfortunately I don't think we ever finalized some of that, but now we're at the point where we are starting to see outside assessments come to us that is outside SEDAR. We certainly want to take advantage of those when we can, but we want to make sure that they meet certain standards before we try and use them to make decisions on.

That is where I think early on we saw maybe a role for the SSC to look at some of these and get us an idea whether it was worth proceeding with considering these things or whether it was just completely out in left field. It is going to take the SSC time to do that, but I think you could play a very important role in doing that for us.

It has been said before and we always knew it was not only get to this point but that probably these sorts of situations were going to increase in the future. We need to have a way to deal with these and decide which ones we want to accept and which ones we don't. I think the SSC can play a role in that and help us with that.

MR. CARMICHAEL: A lot of good discussion here. I appreciate Steve bringing up the National Standards because that is going to have a role in this. My understanding of that is that with the regional programs, those things like SEDAR and STAR and SAW/SARC would be recognized as providing peer review and meeting of the standards.

In a way you can vision that as removing that from you; that now that is something that comes to you with peer review that meets the standard, but it also says the SSC can provide peer review, and I think that creates a bit of a separation between some of the discussions where it has been said at times that the SSC should receive peer-reviewed information.

Well, that is true in an assessment and there is a mechanism, SEDAR, to bring in peer-reviewed stock assessment info to you, but there is also allowance that an assessment could come to you and you serve as the peer review. That seems to be fully legal. The separation sort of comes in when the SSC is considering things like we want a peer-reviewed assessment from things other than SEDAR.

That may be possible, but that is very costly. That is one of the ASMFC issues. One of their tiers is that they can do a peer review that they conduct and solicit all on their own. They seldom do that, because it is extremely expensive to bring in people and put on the workshop. If you're not paying reviewers to be reviewers, it is really hard sometimes to get the people to do it.

You see the ASMFC seldom doing that, because it is so difficult to get people and because there is a lot of cost. I think we shouldn't sort of lose track of that. I don't speak for the Chair and the Executive Director, but I don't think in this budget we're going to have a lot of money to start having the South Atlantic Council go out and conduct independent peer reviews. I think now also there are issues within the agency, because the agency accepting the assessments and

declaring stock status, so they may have some opinions over what constitutes an acceptable peer review process.

SEDAR started out initially, it has been stated a couple times, it wasn't intended to be the only source of assessments in the region, and we recognize that. Now, that has shifted a bit, because the Science Center has made it clear that they view SEDAR as being an integral part of their program in a way that at least they make sure their stock assessments are meeting the expected standards.

How they would view an assessment that came through some other course, I don't know, but I think they have to be kind of players in whatever kind of program that is ultimately approved. What they do is likely going to be governed by whatever comes out of the National Standards, whenever that is finally approved. The other question is what does the council accept? There are a lot of people in here.

I think in our discussions at the SSC level we should focus on this idea of what is the SSC's role when you have an assessment or analysis that comes to you through whatever channel where the council is asking you to please review this. The good thing to talk about along those lines would be what are your minimal standards?

I think we probably shouldn't worry too much about the different peer review standards and what people will accept, because we can't control that, but I think it is totally up to you guys to say these are some minimal standards we have for information that comes to us. You've done that somewhat. You've set a timing standard where you like to have documents within a certain amount of time, and I think you would be well within your right to go further.

Now might be a good time to say what are your minimum standards if you are giving an analysis that you are going to review. How long do you want to have it, what sort of background information do you need, do you need raw data, all that kind of stuff. If we can make progress on that, we might be better served and end up with something that really helps the committee down the road and not potentially end up with something that maybe the agency comes back or the council and says that is all well and nice but we just simply can't pull that off.

DR. GRIMES: This is a good discussion and I agree with Steve that everybody seems to be really pretty much in agreement. Trying to finalize something with a group of 20-some people is probably not going to be a very efficient way to do it. Maybe you want the boss man to appoint some sort of a subcommittee or some kind of a working group to actually draw up a set of suggested guidelines, put that out to everybody and let them scribble on it and it will move ahead a little faster that way, I think.

DR. BARBIERI: Churchill, I completely agree. Personally I am on board with you, and I think yesterday morning that is a point that I made to Jim; that I felt like if we are going to set the set of standards, it would be easier to have some kind of subpanel of the SSC put together a draft. We have handled several issues this way that would come to the committee as a whole. It would be sent ahead of time anyway as part of our briefing book to be reviewed.

If we sent that in the Word format and you handle all the edits to the track changes, everybody will have a chance to add quite a bit to that whole document before it even comes in for

discussion. We could have one or two rounds of discussion and revision through e-mail and through document editing before it even comes here for discussion. I think that would be a time saver.

Now, I have heard from a few people some level of dissatisfaction with this model, basically because I guess folks felt that we needed to have more of this joint group discussion, this plenary where we could have more input coming from everybody. But I agree with you, Churchill, I think we are at the point where we have converged into a set of ideas that are fairly well outlined and we can then proceed for this subcommittee or panel group that will handle preparation of a draft that all of us can work on for the next few months before the April meeting. With that said, before I proceed to the next set of comments, let me see if I can get some volunteers for this subcommittee. I'm looking for five; Steve Cadrin.

MS. LANGE: Is this something that is going to go on tomorrow or between now and next April?

DR. BARBIERI: Between now and next April.

MS. LANGE: By phone?

DR. BARBIERI: No, this committee is going to have – there will be some e-mails, there will be some conference, phone conferences, but the subcommittee is going to be working together and drafting something that will be sent by e-mail. Let me just explain because that helps you understand, we did this with the ORCS Workshop. We had Jim Berkson, myself, Eric Johnson, Chip Collier and Marcel. We sent e-mails to each other with some ideas. J

John helped coordinate some of that and helped provide and Mike helped provide some input. We drafted what we thought would be an agenda. We drafted terms of reference for the workshop. We discussed the workshop process. We had a few phone conferences to do all of this and get all this ready for the August 1st and 2nd workshop.

By the time that the committee actually meets to discuss it, a lot of that legwork is already done, and you have something to be put in front of you that can be edited. Since we have more time between now and April, we can actually have a draft. This doesn't have to be very long. It is a few pages long that can be – after that draft is put together can be circulated by e-mail by the committee.

Just like how we handle most of the work in putting together the ORCS report was really through e-mail and conference calls. Then eventually Jim wrote the bulk of what the document became to be. But a lot of the work was handled through conference calls and e-mails and revisions of documents through that e-mail process.

MS. LANGE: I guess again if we're breaking off and we're going to set up a subcommittee, I think the group would benefit by having some further specific discussion of this in total, the whole group, and get some ideas of different experiences people have. Are we not going to do this tomorrow? Are we going to break up and then the subcommittee will do everything or will we get some more input before that happens?

DR. BARBIERI: If you want to have more input, let me ask you then something, Anne. Tomorrow morning bring a list of topics for us to get started in the morning of what do you believe are the important inputs that you want to hear from the plenary that go beyond those meeting notes of what we have already discussed this afternoon.

If there are some tangible items that we feel we are going to benefit by discussing, because what happens is we have a tendency to then become a little bit circular in nature, repeating ourselves a little bit, number one; and number two, not being able to converge because we don't have a full set of ideas clearly outlined in written format that we can rearrange in an organized way.

But if you bring that list tomorrow morning, we are going to handle that as the first order of business. We'll review that list. If we see something that hasn't been discussed and is not captured by our summary statement there, we'll kick it around a little bit. I think we have time to do that and we should if there is additional input to be had. And again volunteers, we have Steve Cadrin, John Boreman, Scott Crosson, Doug Vaughan, Anne, Church, Jim.

DR. BOREMAN: So it's either the current NMFS employees or former NMFSS employees that are going to be on this workgroup. You probably should get somebody from outside of NMFS with a different background.

DR. BARBIERI: Anyway, we have seven people here for the subcommittee. As our report is put together and written, I think we have captured a lot of the main points of discussion, some of the main perspectives here on what should be included and the format. Hopefully we are going to have this document circulating before the entire committee by e-mail before our April meeting.

DR. BARBIERI: I appreciate Steve Cadrin will serve as chairman of the subcommittee.

MR. CARMICHAEL: Well done.

DR. BARBIERI: We'll see next steps in terms of discussion of this topic. Tracy you are signed up for –

DR. YANDLE: One really quick thing for people to think about before we come back tomorrow is one thing you folks may have cottoned on to before I did, but I just want to go ahead and state it is it seems to me we've got two issues that we're sort of converging together and mixing, which is standards and process. I think when we come back tomorrow it might help if we start thinking about what do we want to see as far as standards and what do we want to see as far as process, and try and keep those two separate or think about how they interact with each other.

DR. BARBIERI: I think that it provides Anne with a little more structure, yes, because you are going to have the list for us in the morning, Anne.

MS. LANGE: I thought everybody was going to be thinking of ideas overnight.

MR. CARMICHAEL: Yes.

MS. LANGE: When you said you, I assumed you meant –

DR. BARBIERI: That's not what I envisioned, but that's fine.

DR. BERKSON: A quick comment, believe it or not, not all analyses can be reviewed after the fact. Just because we might have four weeks or an eight-week rule or whatever, I think with complicated assessments, that can't be done.

DR. BARBIERI: This is another issue that can be added to those standards where perhaps in this decision rule we take into account the complexity of the data, whether this is a first-time assessment as Doug pointed out before. There would be some criteria that will raise the bar and perhaps call for further requirements.

MS. LANGE: Since I anticipate we may be trying to e-mail things back and forth tomorrow, it might behoove somebody to check with the hotel to find out why most of us can't get on line this afternoon at all. I know I checked my phone and I see there are various e-mails that John and other people have sent, but I can't get them.

DR. BARBIERI: Yes, and it has been happening, because last night was the same thing. I got back to my room and I wanted to look at my e-mails and I just couldn't do it. I could not go get on the wireless at all.

DR. BARBIERI: That's the end of the list. Now, since we have some time and Tracy made a very good point about separating those two categories of items that we want to deal with, standards and the process, and I agree. If I heard correctly, John Carmichael had, a point and I just want to make sure that we have that clear.

In a way you are suggesting or you were that we don't step too much into this revision of SEDAR, and that we keep – because we can make some suggestions but we have no control, and that we keep our discussions more about the standards and process for submission and presentation of the SSC. Is that what you meant?

MR. CARMICHAEL: No, I think you can make suggestions about how SEDAR can better meet the needs, totally, always, since the beginning of SEDAR have been within your right. SSCs have always been a first order of such information. I think you can. I think we should be cognizant of all the differences there are within peer review programs and who has expectations and requirements and standards.

I was just cautioning against going down that path too much about specifying peer review type requirements. I think talking about how SEDAR can operate, how can SEDAR be more streamlined. Given that it is a process to bring peer reviews into you, are you supportive of things like desk reviews for certain stocks; smaller more streamlined type reviews, our data/assessment workshops, more procedures like we talked about for wreckfish.

Are you supportive of things where maybe we look at a bunch of data poor stocks and one data workshop and then try to free up some analysts to go and do assessments and bring them in and we talk about them? I think talking about SEDAR in that regard would be very helpful. I think the most important thing before this group now is the standards and process by which information the council wishes for you to review comes to you, because it is not fair to anyone to throw up rules after the fact.

When you get a document presented before you, to then say, oh, no, we can't look at this because it doesn't meet our rules; you don't have rules until you specify them and get them approved by the council, and to me that is the most critical thing. That is what has been discussed repeatedly, is that the committee feels you have expectations of information; you have minimum standards of some sort.

They probably vary amongst everybody, but at this point until you write those down and get them approved by the council, you really don't have any rules. We can send you a two-page stock assessment that says what the F is; and if it comes to the council and they are like, hey, what do you all think of this, we are asking you to review it, plain and simple.

If you say we want to see your data and we want to see your algorithms and we want access to your software, then you set standards and we can say, okay, you want to submit an assessment, this is what the SSC has asked for and the council supports this because they think it's necessary to meeting the standards for determining best available science. That is where I would like to see the focus, because I think we can make more progress there.

DR. BARBIERI: Right; and I agree. Thanks for the clarification because I think it helps. I think that perhaps for the longer document, it would be good to stretch the envelope perhaps a little bit, and I will leave to Chairman Cadrin the discretion there for how he wants to structure that document.

But I think that John Boreman brought up some ideas and suggestions that were a little outside of the box, but it may not be realistic to have them implemented immediately, but would be good to have them as suggestions that perhaps if we think a little more, if we structure ourselves a little more could be future expansions of the process.

MR. CARMICHAEL: I think putting things out there as questions to be addressed by those other bodies; what would the agency accept in terms of a peer review that is not run through a program that has been recognized under the National Standard; what would it take to try and get that dialogue going as a long-term solution to this big problem?

DR. BARBIERI: Are there any other items that we have for discussion today or shall we leave some time on our agenda for perhaps the first meeting of the subcommittee? With that, should we expect then tomorrow morning – it doesn't have to be anything at this point to be detailed at all. Right now it's simply to clarify.

We had a lot of discussion today that went all over the place, and it was very informative because it was all inclusive; but perhaps just categorize some of this information and add a few more in a way that we can have, as Anne mentioned before, more plenary input and discussion in the morning about what topics we want to get included there, which ones would be important, and the structure of this process would save her some time. Thank you very much and I will see you all at 8:30 in the morning tomorrow.

DR. BARBIERI: Good morning, folks, and welcome back to the last day of the October 2012 South Atlantic Council's SSC Meeting. We are going to go back to revisiting or continuing to discuss the items that we started yesterday, late afternoon. We are going to continue discussion of the process and standards for analytical review, peer review and presentations to the SSC.

I saw yesterday evening Subcommittee Chair Cadrin had actually his laptop out and had what I believe is a short presentation summary of discussion points. I don't know if the rest of the committee members had a chance to review and discuss yet. Maybe we can do that as part of the plenary and add as we go.

DR. CADRIN: Good morning, everybody. It became clear to us as we were adjourning yesterday that we wouldn't have time as a subcommittee to talk before we resumed in plenary. These are some things I put together just for discussion. The entire subcommittee hasn't looked at this yet although many of their ideas have been incorporated to this.

It is really just something to get out so that before we start as a subcommittee we get some feedback from the entire SSC on these ideas. Just starting out, these are things that were mentioned yesterday; that there are some things we should probably put into the policy that authorizes the SSC.

Magnuson has National Standard 2 that management should be best scientific information available, and Magnuson authorized the SSC to advise the council really on any basis for fishery management explicitly, except for biological catch. The draft guidelines state that this best scientific information available should be determined through a regional peer review process.

We have that process codified as SEDAR here for this region. It also states that the SSC recommendations can deviate from the regional peer review process as long as justification is provided. It does allow for SSC to provide a review outside of SEDAR. I think we should recognize that SEDAR is the preferred process.

I think we heard that several times this week, is that we prefer an issue to go through SEDAR for determining best science, but we also recognize that takes time. There are priorities, resources that are not always available to get a responsive SEDAR review. We recognize that the council may wish to consider scientific information that has not gone through SEDAR; but in order to do so, we should develop a process for topics of limited scope.

I think that was part of the discussion yesterday that this should not be something that hasn't seen the light of day anywhere yet; that we really should define scope in our policy, but in our policy maintain those principles of best scientific information available and be consistent with National Standard 2 Guidelines. If we do those, hopefully we can achieve the sixth point there is that the process would be recognized by the Center and the Regional Office so that our recommendations are consistent with status determination and so forth.

Again, if we can conform to National Standard 2 guidelines at least in their draft form and meet the principles of best science, I think that will give us the quality we are looking for and also hopefully officially recognize the process. The intentions that I heard yesterday is that this process should be responsive to new and relevant scientific information.

I think responsiveness is the overall goal here, that we can have both quality control and responsiveness with a complement between SEDAR and the SSC review. We do want to be responsible in this, is that we don't want to be jerked around by different science coming in and give it too light of a review so that the next time science comes up the council is getting contradicting information.

We want to have responsible scientific advice. We also want to provide a rationale for the council and the SSC to decide on whether they want to initiate an SSC review or not. I think this could be important. If stakeholders come with some information with a desire for the council to consider it and the consideration doesn't meet the standards that we have laid out, the council then has rationale to fall back on to respond that it doesn't meet the criteria for this review.

Hopefully we can do so in a way that encourages scientific advancement. I think that is what we all want. We all want our fishery management to be based on the best science that could be available. What I mean by that is that if we have these standards and a certain request doesn't meet those standards, the people who want that looked at can then go back and try to elevate this so that it will meet the standards.

So again what we would like is something that complements SEDAR and really adds value to the system, rather than just adding trouble to the system. What I tried to do in this last slide -- this is all I have – is went back through National Standard 2 Guidelines. These principles are what came out of the National Research Council, the AFS Review.

These are the principles of best scientific information available. I reordered them a little bit so that we can probably try to take from this and develop a policy. Relevance first, is that relevance would be decided by the council but meeting these standards. It would begin with probably a request to the council, but then the council would develop a term of reference to the SSC.

The SSC would evaluate whether this topic meets the standards for an SSC review, whether that is appropriate or possible according to what the council approves as standard. This is something that we will propose to the council and hopefully they will either get back to us with feedback or eventually adopt so that we can have approved standards for accepting whether a topic is relevant and appropriate for SSC review.

We can have approved standards for accepting whether a topic is relevant and appropriate for SSC review. Once the process is initiated, there would be a peer review and it would be in the form of a panel. What we talked about several times yesterday in SEDAR was a desk review versus a face-to-face meeting. The way this is laid out is that it would be a meeting, but that would be something for the subcommittee to consider of whether it could be desk reviewed.

DR. BARBIERI: Now, quick question Steve; one of the topics yesterday of discussion, and I guess part of this decision on how to frame this, if this is tied to SEDAR, I would guess automatically it would be associated with CIE review; for the possibility of CIE reviews, whether desk or workshops, in-person meetings. Are you thinking about that in those terms and then potentially expanding to something broader, as John –

DR. CADRIN: Yes, I think we have some of that laid out here. This desk review or meeting is something that would have to be considered. One thing -- this is just my thought – is that if this is important enough to the council, then there will have to be some resources to contract a CIE person to host a meeting. Those are expensive, I realize, but in a way that is putting the council's money where their intentions are.

If I could walk through, I think I have some of that in here. The objectivity; that we'd have to make sure that panel members have no conflict of interest, so I think that there are standard

forms for this, in selecting the panel. Inclusiveness is something that is also very important, especially in these short-track things.

They would be open meetings or open web access or go to meetings. The panel would include – and this is completely for development, but these are just ideas that were brought around – SSC member or members and the Chair would be an SSC member, someone from the Center, someone from the Regional Office, people from states and invited outside scientists.

Here is where the CIE could be contracted to do this; or as ASMFC does, it could contract externals outside of CIE. There would be input from all participants considered by the panel, and the report would be by the entire panel, so that is how inclusiveness would be captured through this meeting process.

Transparency; I think it has two aspects. One is on the front end of it is that dates, agendas, terms of reference will all be announced in advance. Those would be advertised, if you will. Then on the back end of it, the proceedings will have a response to all the terms of reference that are fully documented.

The timeliness; again this is something that has a few question marks in it that we can develop. All documents available two weeks before the panel meeting. I know the Mid-Atlantic SSC has a similar type thing for their full SSCs. I would think we would want at least this. If we really want the panel to be able to review these documents, we need to give them time.

The panel report available shortly after the meeting, and again two weeks is just something I put in there as a placeholder. The last two I think are where our standards will really come from. How are we going to determine whether something warrants an SSC review or not? Verification; what I heard yesterday is people were very concerned about the data; that if the data have not seen the light of day, then it is probably not appropriate for SSC review; that the data either has to have been developed through a SEDAR process and maybe it is being updated by a few years here or the data protocol has been previously reviewed.

This is something we'll have to specify, but I think some form – we don't want just brand new data that nobody has ever seen before, because we are not having a data workshop, and so there would be something there. Validation, this is more for the models, is that the analytical methods have been previously reviewed. Maybe not necessarily applied to this problem, but VPA or statistical catch at age or stock reduction analysis have all been published. It's not a new method.

Again, similar to the data, SSC review is probably too light for reviewing an entirely new method. I'll come back to that one. That is probably where most of the meat is. The standards are, of course, where it starts; that the topic is a priority issue for the council and it would justify the expense of an SSC review. The data have been previously peer reviewed.

The general analytical methods have been previously peer reviewed as well, published, applied successfully to other stocks. There is full documentation of the data, the methods, the results, diagnostics and interpretations for the SSC review to review. That is all I had and I would encourage other subcommittee members and the rest of the SSC to comment. I will jot down ideas for the first meeting of the SSC Subcommittee.

DR. BARBIERI: Steve, needless to say, absolutely excellent. Thank you so much, and it's amazing that you basically put this together in 30 minutes last night.

DR. CADRIN: It was an old-fashioned approach.

DR. BARBIERI: Right. This is phenomenal because I think it provides now a framework. It's really objective; it's really thorough and complete. For us to follow this framework now, I see the whole issue shaping up in a way that is much better defined. Since we have some time today, perhaps we'll have the opportunity. Anne brought this up yesterday that since we have the whole group here, at least we can get some of this initial work and discussion on some of these topics, issues, items, and start fleshing out this skeleton outline. With that, I will open up for discussion.

MS. LANGE: Well, I'll agree this is excellent. My bullets were much more simple and less complete. I'm glad that you were able to get something pulled together. No, you covered everything I had here and much more elegantly. I agree that this was an opportunity. If there are specific issues or examples that people have of concerns that can be addressed or brought up so that when the subcommittee meets, we can be sure that they are incorporated into the overall document.

DR. REICHERT: This goes into some of the details, and I was wondering under inclusiveness should we specify a mechanism or not for non-panel members to comment or potentially participate in this process.

DR. CADRIN: I think it's a good question and I think it generally could be the discretion of the Chair, I guess similar to the SEDAR reviews I've been to where panel members get the first round of things and then you open it up to the entire group for consideration, but then it comes back to the panel for decisions and response to the terms of reference.

That would be one way of handling that. But I think actually this inclusive – since it is a fast track, I think we really have to be, if anything, more open to inclusiveness, because through the entire SEDAR review people have a lot of opportunity. They know when the meetings are coming, they have opportunity for feedback. They have months to do that.

Where this is short track, I really think the people who come to the meeting – and maybe this could even be broadcast as well – that we do have input from outside, that it is not a small group, it is not Doug in the closes but we want to be as inclusive as possible.

DR. BERKSON: This is a great framework for a review after the fact, after an analysis has been complete. I keep going back to this issue of what if analyses are so complicated that they can't be done after the fact? I guess that is something that the SSC decides; when terms of reference first comes to us, that it is too late.

For example, the SEDARS, we've said all along we want SSC members at the data workshop and the assessment workshops, because we can't fully understand all the decisions made in the process if we just look at the report after the fact. I think that is one of the primary reasons why we want SSC members at SEDARs.

What kinds of analyses qualify as analyses that we can do after the fact versus analyses we can't; and do we want to say, okay, if you are going to do a complicated stock assessment involving this kind of data and these kinds of models, we need to be involved from an earlier stage. I still contend we can't do all of our reviews after the fact.

DR. CADRIN: No, I think that is a challenge. You are entirely right; this is designed for something where an analysis has been done by a third party and the council has desire to consider it and we're reviewing it. It would not be an integrated review so that we wouldn't be imbedded in the process of it, but that is just the way this is laid out. If we can come up with a way for an integrated review, that is what takes time.

DR. BERKSON: Are we in agreement that there is some analyses and other products that would come to us that would require an integrated review rather than after the fact?

DR. CADRIN: That might be one of our standards is that if the analysis is so complicated that we feel that we need to have been involved in the development of the data and the development of the model, then it wouldn't be able to go through this. It would take more time. That might be something to include in our standards. I'm not sure what criteria we would have for that but we'd have to develop some.

DR. BOREMAN: Well, a couple of things. First to Jim's point, I think we have to have a screen. When something comes in to the SSC, there probably should be a subgroup of the SSC that looks at the material and makes a decision whether it is going to be that it needs to go through the full SEDAR process, data review, data workshop, assessment workshop, peer review; or we can go to this other route, which is a shortened process and so on.

That is a decision point I think needs to be inserted in here. Second is the only thing that I see missing from this terrific summary is that if it is an outside assessment coming in – and I mentioned this yesterday – that the assessor needs to agree that they will be available to do follow-up work. There is an obligation there.

If we need to come back the following year with an updated assessment or followup, they need to be agreeable that somebody can take their raw data; or if they don't want to share that, they need to be available to do any follow-up work and not just dump something on the SSC and then walk away at some point.

DR. BARBIERI: Good point.

DR. VAUGHAN: Yes, and again if this is indeed as complicated and a model and data setup as Jim is suggesting, at some point it needs to be a SEDAR. It needs to go through that process. If it is something that the data aren't too complicated such as wreckfish, that the model is a little more complicated, but not terribly complicated, then you might be able to avoid some of these steps as long as you can somehow confirm that the data has been treated properly and et cetera. I really think that for the really complicated stuff, SEDAR or the equivalent is absolutely required.

DR. BARBIERI: Two points here that I would like to bring up for clarification. One, I think John brought up a good point about the screening process, screening subcommittee. I see that up

there under relevance. The process begins with council, TOR to SSC and the SSC evaluates whether an SSC review is appropriate or possible according to approved standards.

I mean we still need to flesh out a bit how procedurally we would handle that. It could be a subcommittee as John suggested or some other arrangement that we think up. This is number one. Number two is I think we need to be a little bit more explicit about what we mean by SEDAR, because if by that we mean we have the three workshops – because right now SEDAR has actually different formats, as I discussed yesterday.

One of the formats, yellowtail snapper, for example, assessment was never – we never had any workshop whatsoever. We did that in the closet. This is why we wanted it to go to CIE to have a professional formal review process that was independent before it came to the SSC. We had our own assessment team discussing all of this; but eventually, before it came to the SSC, we felt that a benchmark assessment cannot come to the SSC – I called John and discussed this with him – unless we have a CIE review, so either we would contract with CIE and get the review or would request the agency's assistance to go through that process and they picked it up.

DR. VAUGHAN: We've done a couple of menhaden assessments through the SEDAR process, but only the third step, the CIE review has done it, well, twice for Atlantic menhaden and then last year for Gulf menhaden. For the ones we have done through ASMFC and then for GSMFC, we did have a formal data workshop.

We did have a formal assessment workshop that was done independently of SEDAR, and then we had the third step like you did with yellowtail. In effect we followed the SEDAR process, which to me in some forms you have the three steps. You have the data workshop in some format. It doesn't have to be absolutely formal.

You have an assessment process and then you have the independent peer review. That to me is the essence of the SEDAR process. Now, how you do those three steps can be done in a lot of different ways; but if those three steps aren't present, then to me it is not SEDAR.

MS. LANGE: I think I envisioned the process starting earlier on. If someone intends to do an assessment, that they would contact the council and say, look – whether it is industry or the university, graduate students, state biologist or state stock assessment people, that they would come to the council and say, "Listen, we have an interest in doing a stock assessment on this species. These are the data that we intend on using."

"This is the modeling effort that we are planning on using, although obviously that could change, but this is what our intent is." At that point the council could say, "Well, yes, this is something that we are interested in' provide your specifics to the staff." The council staff can look to see if it even merits – you know, if it is an approach that is viable, that potentially would meet the standards.

I expect there would be some that are just not worth even anyone pursuing, but a good portion of them may be valid to do that. At that point I would foresee the SSC having a very quick presentation or by e-mail sort of reviewing what their intent is, where they intend to get the data, if they've made contacts with the states or with the Southeast Center to get the appropriate datasets before they even start to do an assessment.

If someone is going to put in the effort to do an assessment with the intent on presenting it to the council as a stock assessment for management purposes, they should in my view feel comfortable enough in it that they are willing to let people know that ahead of time.

DR. CROSSON: Without disagreeing that there should be some screening on the front end going in, don't forget on the backend the panel can always reject the assessment, in which case it is going to end up on the SEDAR list again. There are multiple checks in the process. I'm just a little wary of doing – I definitely believe there should be screening beforehand, but I don't think we need to get to the point where we have to check every single item, because again the panel may just reject it. The model may be insufficient or the data may not be sufficient for doing that level of assessment.

DR. BERKSON: I agree with what Anne was saying. I think individuals that are going to do assessments need to realize that if they don't have these things checked out in advance, they are really proceeding at their own peril, because in many cases it will be very predictable that an assessment won't be approved or won't even be reviewed because there won't have been enough involvement.

If they try to do the data themselves without involving, for instance, the Science Center or others that know the data the best, it is not going to work. The other thing I was going to say is there are so many different kinds of assessments and now it appears there are so many different kinds of SEDARs on the horizon, I think there is going to be a lot of gray area as to whether the SSC needs to be involved along the way or just at the end.

This is something that the subcommittee or the SSC as a whole is going to have to spend a decent amount of time on, I think, really deciding what level of involvement do we need for these different kinds of stages, these different kinds of processes? The process you described with yellowtail is very different than the one that Dr. Butterworth brought in, which is entirely different than the full-fledged one as compared to an update. We're just getting all over the place at this point.

DR. CADRIN: Yes, two points and the first is just what you and Doug were describing about some processes where SEDAR really only consisted of a review workshop. I think that is very similar to what we have here. We essentially have a third stage review workshop sketched out here.

The only time I guess it would be needed was when the SEDAR system is so saturated that it can't accommodate just this third stage, that we would do that within the SSC review process. But it would have all of the elements of a SEDAR review workshop, because it will have met some data criteria, some model criteria that there have been some state/center involvement in each of those to make it to this stage.

Really, it is only when SEDAR is too plugged up and there is a priority issue for the council that they want done, that we allow for a process to complement the SEDAR review workshop process. The second point I had is that we need to think beyond just stock assessments. I think that is what most of the conversation has been.

When I tried to lay it out, I tried to make it general enough that it could be for an economic analysis, it could be for a habitat analysis, it could be for closed areas, it could be anything that the council wants scientific recommendations on. I think we need to be open to that, because as we broaden toward integrated management we are going to be getting more and more of that. I realize we are still very focused on assessments and ABCs, but I think that could be something where SEDAR actually is not appropriate if something came in that was not assessment based.

MR. CARMICHAEL: I think that is good, too, because I think you – at least in my readings of all this stuff, I think you free yourself up for some more flexibility when you are not dealing with the stock assessment, because that status determination is so important. For example, when you go through an assessment and it may determine a stock is overfishing, that has requirements for the council to end overfishing within a year.

Well, the overfishing determination date is not when the Review Panel is completed or when you guys review it and say the review is accepted and these are the findings, but there is actually a letter that comes to the council from the agency that says the stock has been determined to be overfishing and all of that.

There is that level of status determinations and you probably have a lot more flexibility to do, like John mentioned with those couple things at the Mid-Atlantic where they've done their own kind of review on some of these analyses. I think when you're out of that status determination mode, you've got a lot more flexibility to do that.

DR. BARBIERI: Now back to that screening and these different pathways perhaps that assessments or some other analytical work would take along the process, I am envisioning then that screening subcommittee or whatever review process we put in place then would make a recommendation at that stage for this has to go through SEDAR with three workshops or this has to go to SEDAR with perhaps just a review workshop.

If it's a benchmark, we need a CIE or some other independent form of external review before it comes to the SSC; or depending on the type of analysis it is, it could be this is simple enough and we don't need to be involved. We can actually just be a review panel. That would, through that screening process, as we set those standards more explicitly, you know, be able to provide some standardized guidance there on which path the analytical work would take.

DR. CADRIN: I think that's an excellent idea that the subgroup that John Boreman had proposed that a subgroup of SSC reviews these requests from the council do they meet our standards; that the determination of that subgroup be that it needs a full SEDAR review, it needs a SEDAR review workshop, or this is appropriate for an SSC review; I think that's an appropriate determination by that group. I wonder if a SEDAR coordinator or SEDAR staff should be involved in that subgroup.

DR. BERKSON: I think it is going to be essential that we lay out the criteria for each one of those endpoints, for each one of those steps. Otherwise, it could be seen as being arbitrary decisions. The council or anyone else proposing us to do the work could say you don't have anything in writing saying it has to go this way; therefore, we want you to do this analysis. We are just going to be in much better shape if we justify those different paths and lay them out in advance.

MR. CARMICHAEL: I don't believe SEDAR staff should be involved in this. I think it should be the council staff because SEDAR serves three councils and two commissions.

DR. CADRIN: That may be exactly why it goes through an SSC review rather than a SEDAR Review Workshop because it is important to the South Atlantic Council, but in the mix of things regionally it can't go through SEDAR. Going back to Jim, I agree the criteria are going to be critical so that we are not arbitrary, so that we can base our decisions, but also I think this is where the constructive feedback comes from.

I think Dr. Butterworth was a bit frustrated that there was concern that the document was too thin, but there was no suggestion about what the document was lacking. I think the criteria could actually be constructive to the people who are trying to initiate this review. If their data has not seen the light of day from states and centers, that is what they need to go do.

They need to go back, get inclusiveness in this data. If their model is new, maybe they need to simulation test it, they need to publish it and that we're giving them constructive feedback of why this isn't ready for an SSC review. I think it works both ways; the criteria help us and they help the people proposing this analysis to us.

MS. LANGE: I view this as a positive thing. We're so short-staffed in each of the states and the Science Centers, there are a lot of unassessed stocks; and not to go out and advertise and try to encourage necessarily but at least to be supportive. if someone is willing to do a good job and a sincere and unbiased assessment, we should not be discouraging that, but we need to let them know that this is a serious undertaking; that management is going to be based on if it's accepted, and that we don't want people just willy-nilly send in something just to make a point.

DR. BARBIERI: Yes, absolutely. It looks like to me that in terms of that first item on your previous list, in terms of relevance and the screening committee, we have already brought together a number of important points and items; the peer review, the panel reviewers, inclusiveness. Now, in the inclusiveness part, of course, it would be dependent on the type of review that the screening committee in some cases that won't be meeting unless you're talking about the review process before it comes to us.

DR. CADRIN: I'm not sure how best to implement it, but one of the things I think we need to be concerned about is that there is no perception that we're shutting anybody out of anything. If people have a desire to be part of this, to observe it, to have input to it, that there is some venue for their feedback. Again, because this is so short tracked, I think we need to actually be a little more open to that than we normally would; that we didn't do this in a backroom somewhere.
On inclusiveness, of course, we don't dictate center staff or regional office staff. This would have to be an invitation to them to participate. Of course, we can't staff, we can't direct their staff to do anything.

DR. REICHERT: Well, this kind of goes back to procedures. That may be a small point, but in terms of the screening and deciding what path to take, correct me if I'm wrong, but it is ultimately the council that decides. We can make recommendations to the council on how we feel as an SSC a review should proceed or are we making a decision?

DR. BOREMAN: I don't think that is the council's decision. I think that is our decision, because we are – I don't know if we're mandated or not, but we are the ones that determine what is best available science. I think that is our responsibility.

DR. CADRIN: I think there are several decisions in this trail is that first of all the council decides whether this is a priority issue for them, and that is when they would decide to put it as a term of reference for the SSC. Then, as we have been talking about it here, the screening subgroup would take the term of reference and the information in the request and determine whether it meets our standards and the criteria.

The subgroup would then make a recommendation back to the SSC. The SSC would then make a recommendation to the council as to the most appropriate way to treat this issue, full SEDAR, SEDAR review workgroup, SSC review. Then the council decides, okay, do we have the resources; what's the timeframe; do we authorize the SSC to start this review? Again there is a sequence of decisions. I think part of it is in the SSC's purview and part of it is in the council's.

DR. CADRIN: I have a few pages of notes here that I'm willing to put into to modify what I have on screen. I'll get it out to the subcommittee members. We'll iterate on this through correspondence, and we will report to you next spring if that is okay with the subgroup.

DR. BARBIERI: Excellent, and Mike has also been taking some notes and it's part of the body of our overall report. Perhaps, Mike, we send those notes to Steve as well just to supplement, because it always adds to have additional note-takers.

DR. BOREMAN: Why wait until April? We all have access to the internet; and as soon as we get done, the subcommittee, get our work done, we can get it out to the committee. We can probably get some type of concurrence through e-mail that people agree with this or put it up on WebDocs and have other people take a look at it and get it finalized, so we get this process in place as quickly as we can because it needs to go to the council to get the blessing. I think we should just try to aim for getting it done when it gets done; and when it is; it goes off to the council at that point and not wait all the way to April for the next step.

DR. BARBIERI: Right, and that I think would be even better. If the subcommittee members have time to participate, to get this process moving faster – yesterday as we were discussing, I envisioned by e-mail we would be working on some editing and construction of that document, but eventually you would have this in April as an agenda item to bring to full plenary discussion. John, your point was that perhaps this goes to council for their review in March, I think?

DR. BOREMAN: Whenever; I mean, why do we have to wait until next April to have a full plenary discussion? Why can't we have a conference call when everybody seems satisfied with it, just to get it off our docket and get it over to the council?

DR. BARBIERI: No, I agree, but I'm seeing there are a whole bunch of intermediate steps. All of this – the document can be constructed and edited, but I think we would still benefit before sending it to the council for final approval. The thing is ready but it comes here in April for us to finalize and fine tune if there is any additional issue in this plenary session.

DR. BERKSON: Yes, there could be analyses that come before us in April that we wouldn't want to go through this process. If we actually had this process in place first, we wouldn't have to wait until October 2013 to implement it.

DR. BARBIERI: That's fine. I'll tell you what; I don't think we need to continue discussing this. I think that it is really a good point that the sooner the better and if the Subcommittee Chair is agreeable and the subcommittee members are comfortable with moving along this document for final product through e-mail, conference calls and that kind of stuff, let's go that way.

We are thinking that the council – at this point, in terms of scheduling. the council would see this as a formal presentation perhaps to the council in March, because we need all of this to be approved by the council before it can be fully implemented. Let's think about what the dates are for submission of documents to the council and we have this final report wrapped up for that. That way it is fair and complete by our April meeting, and the sooner the better.

DR. BERKSON: Maybe it won't be possible. I think this is going to be a pretty difficult task. Maybe we'll hit some stumbling blocks where we will need some face-t-face time with the entire SSC, but I don't want to rule out the possibility of being able to get it done earlier.

DR. BARBIERI: Right, I agree, and right now the target date for submission to the council is the March meeting. If we make it, great, because that way it is done sooner than later, the sooner the better; but if it's not done by that time, we include it for additional discussion in our April meeting and we try to finalize it then. I think that will be ideal, if that would be okay with Steve.

MS. LANGE: Yes, I would just ask while we are still in plenary if people have some specific issues that concern them about the types of data people might use or the types of analysis or how they might present it, just to let us know in advance. If they have an example of while they were an SSC member something happened and we really need to make sure that we can cut that off by our process.

DR. CADRIN: I think that's a good way of running through this is that if we have examples from the past, how would they have met these criteria; would we have gone ahead with a review? I think, especially in this region, if we have examples, that is the closest we can get to iterating through this with some worked examples; how have they been handled in the past and how could we maybe have done better in the past? That is a good way for the subcommittee at least to run through these. Maybe we'll have an SSC conference call as well if people could think ahead to that.

DR. BOREMAN: I don't think this has to be done this morning, but get feedback to Steve or one of the members of the subcommittee so we can work on it. If we sit around here for an hour just thinking of things, come on.

DR. BARBIERI: I can think already about SEDAR 6, that we had hogfish that was conducted independently as an assessment by an academic analyst and submitted to the SEDAR process for review. We had some concerns regarding follow-up analysis and data availability, but that would be one example. We have several others, and we'll send you some more specific details on that. Okay, so we have a very good outline of what we need to do in terms of completing

this. I think the discussion this morning has been extremely helpful and it added to the whole process.

MR. WAUGH: Just one question about data; the data workshops are important, but I see that as being one difficulty for outside groups doing these types of analyses. We do have a system, ACCSP, where a lot of the data do come from for assessments ultimately. I was wondering if you all could. as you are putting this together, talk about that. If someone was to do a pull of data from the ACCSP system and include their methodology, then that would be something that the SSC or anyone else could go back and replicate. That is very different from the many redundant, duplicative datasets that are used now.

DR. BARBIERI: Thank you, Gregg, excellent suggestion, because the data standards, the data format and all the setup that is put out there by ACCSP would be a help to standardize these data submissions in evaluations. Okay, any other general point of discussion? My understanding at this point is that we have concluded this discussion.

We have a good way forward for the subcommittee. We have some target dates for completion; we have a game plan for April if this target date is not met. Are there any additional items for the open agenda? I guess not. Then let me look at our agenda before we officially adjourn. I think we have another opportunity for public comment. At this point I would like to request if there are any members of the public that would like to address the committee. Yes, Mark.

MR. BROWN: My name is Mark Brown; I own a charter headboat here in Charleston. I was here the day before yesterday, and I would have been here yesterday but I had an offshore trip. When we were out there fishing, I brought the camera with me and shot a lot of pictures, and I'd like to share them with you. It's less than five minutes, and I'll put them on a slide show.

I just wanted you to know that this is what the fishermen are seeing at boatside. We were supposed to have eight people go fishing with us yesterday, and there were only four that were able to show up. They had a good time and we caught some nice fish. I've been in the business for over 40 years.

Most of the fishermen I speak to up and down the coast, this is what we're seeing on a regular basis. We head offshore yesterday and we just bottom fished, so we were fishing for the snapper grouper species the whole time. We saw quite a few red snapper and grouper and black sea bass.

DR. CROSSON: About how deep was the water where you were fishing?

MR. BROWN: We were in 90 feet yesterday, and we measured all the red snapper we caught before we released them. There's another one right there. We caught quite a few scamps.

MEMBER: Are most of the red snapper around that size you showed?

MR. BROWN: Yes, we had one that was 33 inches.

MEMBER: A lot of them seem to be in that year class. Size wise they might be in that year class.

MR. BROWN: That's a smaller one there. We had a couple of them that floated off, but most of them went back down. I've got a picture of me catching one on here and it measured the B-liner at 20 inches.

DR. CROSSON: About what percentage of your hits were red snappers?

MR. BROWN: There was a high percentage yesterday. I didn't fish any wrecks; it was all hard bottom. That's the end right there, but I tried to edit everything and tried to set it up like a story from the beginning to the end just to kind of share with you guys what we are seeing at boatside. Thank you.

MR. HUDSON: Rusty Hudson; Director of Sustainable Fisheries. I've been trying to participate in SSC meetings for about five years now. It used to be in addition to the council meetings, but now it's been separated for the last couple years. I've also been participating in the SEDAR Steering Committees.

In that we have the three councils. We also have highly migratory species, which is only encompassing the sharks, predominantly the coastal sharks. Unfortunately, highly migratory does not have an SSC to review anything, it is all done in-house. We've had a couple of examples of where in-house reviews were anonymous reviewers took place, where the industry did not get to participate.

One of the most recent that has caused some serious issues was the scalloped hammerhead. It was driven by MRFSS data. We've been discussing MRIP here the last couple of days and the effects on modeling. Had a body like this been reviewing the Hayes document for scalloped hammerhead, we would have probably come to the same conclusion that I did, that it was driven by those early spikes in the eighties.

Otherwise, it would have just been a trends document that would have been used in a SEDAR full assessment, but that did not occur. Now, with red snapper in November 2010, the SSC made some recommendations. Luiz, you did very well in having them reexamine the iterative reweighting, and it got rid of the closed area, which would have been massively, economically destructive to what fishing communities are left.

With that said, since the eighties and seventies, when there were a lot of commercial vessels bandit fishing and then later evolving into the bottom longlining, those vessels are gone. There are just a handful of people left. The pressure is basically coming from the recreational source. With wreckfish we are down to a handful of people that thought that they had a full benchmark assessment that occurred, back in the nineties. They gave them a 2 million pound quota. The fact that it was put into the Comprehensive ACL Amendment helped drive a nearly 90 percent reduction that has really crippled those people. I've heard the term kicking the can down the road. The wreckfish full benchmark has been kicked down the road to I believe almost 2016; is that not correct, John?

MR. CARMICHAEL: At least.

MR. HUDSON: That is a problem because it keeps getting delayed. The data that Dr. Butterworth brought, there is some further examination that is going to be needed to be made of

some of that material, but a lot of it, just like with what MacCall received, came from I believe NMFS. The same thing with Andy Strelcheck work that this body felt like they were data poor, so you had third highest levels of landings with the formula.

Then you had the DC-AC, and then you had the DB-SRA. MacCall let us know that actually a DB-SRA had been started a couple of years ago before we actually started the DC-AC. But then it got kind of put on a back burner and then it got brought forward just recently. The DC-AC that was brought forward last year actually had some scenarios that led to a subpanel that met overnight. Luiz, Steve and Yan and others were all participants in that.

It just basically mimicked the third highest levels as far as what the results were within 10 or 20,000 pounds. The low end of Butterworth's stuff actually is just a little bit higher than the third highest levels. But, the other runs actually got us to the point where we were about two-thirds of the original 2 million pound quota.

I mentioned on the first day it had a verbal comment ability that they wound up in the case of the second biggest coupon holder in two and a half trips caught his entire annual allocation. When all of these different fisheries that we are experiencing massive downsizing on the allocations or complete closures on the allocations, it would have been a great opportunity for them to be able to work as they had for 20 years, but now they can't.

It is making it very problematic as to what you really have; not much value at all. It is virtually a pseudo catch share program even though it doesn't pay a 3 percent royalty to the government. We are concerned, and that was why Dr. Butterworth was brought into the situation to try to be able to see if there is a remedy. It would have been nice to be able to – as he noted in that, it was his first review of the situation. It is not a complete assessment.

It would have been nice to have had the abilities to deal with that. There is going to be further examinations. There is a potential of doing a subgroup. I believe that John was part of a conversation outside of these doors with Dr. MacCall – I believe he's a doctor, but anyway Alec MacCall and Butterworth, myself and a few others that are representing the local wreckfish industry that is left here also.

In fact, the guy with the highest amount of coupons was here during the vermilion snapper period; but because he knew he had to wait a couple more hours, I don't know what happened, but he didn't come back. I think he is very frustrated with the process, because not being able to have a final full benchmark for wreckfish until maybe 2016 or '17 completed is very problematic.

With the list of unassessed stocks that we have, the ORCS thing, we're making headway, but that is even delayed another six months. Now six months is a lot to a businessman. It can put them out of business. That is the fear that we're having. With all that said, certain things like black sea bass with regards to those little vermilions, they are a predator to those little vermilions.

These red snappers, once they get past a certain schooling size, they are a predator. With our Atlantic sharpnose that inhibited the catch of these red snappers during the mini-season from Cape Canaveral south, they've exploded in population; they are a predator. The sandbar sharks

are as thick as we've ever seen and they are eating the red snappers off the hooks as you're trying to bring them up or release them. They are a predator.

We have an ecosystem that's getting way out of balance. An ecosystem management requires balance. Now, there are two ways to achieve it, understanding how to assess all the stocks that are important or to be able to close it all down and just let nature take its course. But there are other influences besides fishing that affect those ecosystems, particularly around the beaches, the estuaries, where I believe 86 percent of almost everything has to encounter our rivers, our coastal areas.

With that said, I had several e-mails that came in after I had distributed the vermilion snapper presentation. If there is not an increase there, particularly with the size that Mark was seeing up this way, the size that we're seeing, historically we haven't seen that size of vermilion snappers down our way as thick as they are on all of these reefs.

The red porgy update was really, really scary, particularly with what Roy had to say about the impact it may have on the entire complex of trying to reduce this mortality, including discard mortality and everything else associated. Yet it has got a huge population and the guys are seeing the same thing.

They are seeing the best red porgy fishing they've seen and lots of them, large ones. They don't have to go and fish the offshore stocks outside of 120 feet, because they are thick all the way back into 65. That's an important feature. We're getting ready to start gray triggerfish and other types of stuff coming up here soon that you'll have to review once those products are finished.

Snowy grouper, we are at 100 pound daily trip limit. Things like that can only be improved with the science that reflects what we see on the water, but unfortunately the data and a lot of the science is five to fifteen years behind. We used to do our updates with the public involved. The public is not involved with the updates at this current time.

They are involved with a standard assessment and with a full benchmark. That is important to us to be able to be involved. Just like this protocol you're developing, I would like to be involved in the sense of at least being able to do as I do, monitor what is being said. I think that the council staff here knows that I've been kind of a pain or burr under the saddle for a lot of years now because I am obsessive about information.

I get webinars, recordings, recordings of any and everything that's relevant. It is not to be mean-spirited or try to point fingers or make fellows like analysts feel like I'm picking on them. I'm not. We in the industry are trying to survive, and we don't have any other choices except to be able to go fishing and catch our fish. Whether we're the for-hire fleet or whether we're the commercial fleet, it is important to us to go fishing. When we don't, we have a big problem. Since the year 2000 we've probably lost 50 percent of our for-hire boats, our commercial boats and a lot of the private recreational boats. It's that big of an impact as far as different things that have affected things.

How do we get SEDAR to catch up? SEDAR can't keep up with 30- something species of shark. They can't keep up with the best part of 70-something species of snapper grouper. It is pretty difficult to keep up with the coastal migratory pelagics. Now we've got shrimp. It is

rather frustrating and so solutions like a third party analysis – this DC-AC was basically in my mind almost a third party analysis that we attempted to do with wreckfish.

It didn't come up with the result that the fishermen were hoping to see, and that is again why we engaged Dr. Butterworth, and I believe that's why Bonnie had Dr. MacCall bring in his DB-SRA. Then once he started reflecting on a couple things in the hallway the other day, he started seeing things that could possibly be tweaked.

That was what we had hoped that this body would have had the ability to spend maybe half an hour, an hour to look at and discuss. We've got the extra five hours today, but we're not going to use them. I'm not going to go ahead and say anything else. But down the road when we're not here and all you're doing is dealing with a very small fragment of who's left to be able to deal with the stocks, we'd like to at least be remembered.

With our red snapper, that is a big concern, and, Luiz, the state of Florida has really stepped forward for us. Our commercial mini-season we had for a week did not catch the 20,000 pounds that we were allocated. We didn't even come close because of the bad weather and everything else. The guys in North Carolina and South Carolina sent me a lot of e-mails saying they were inundated with black sea bass.

The guys from Cape Canaveral south were inundated with the Atlantic sharpnose. It inhibited their ability to fish whether they were recreational or the commercial. The recreational won't be able to get opened up this year even if they have fish left because of the way the MRIP wave, two-month wave works and then the 45 delay after that, the 45-day delay.

You're talking the middle of December before you see those numbers. Now Roy and Jack McGovern indicated that they should have those numbers on the red snapper commercial. We may be able to do two things there, open it back up and get past this 50-pound gutted trip limit for a day because that just really messes us up; because unless you have other things to catch – now our grouper is closed as of October 20 for the rest of the year because of a choke species status of gag grouper, which was 86 percent caught as of the last count on the October 9 notice.

But the other groupers that got closed were only at 40 to 60 percent. We thought we had that fixed with Amendment 24 last year, including Roy and the council and everybody, but it turned out the general counsel let us know that somehow Amendment 16 trumped it and so we had a choke species status and it's closed and they're trying to fix it, and maybe next year we won't repeat this same problem.

But again that's another economic impact. I appreciate your allowing me to speak. I think it's a great protocol to now have a written comment submitted so that the SSC members be able to reflect on what we are concerned about, anybody that does submit. Was I the only one that submitted anything? On the oral level we had at least four people that came forward, and today on the closing oral we have myself and Mark, my cousin here, he has 40 years of fishing. I'm the fifth generation of watermen myself. I don't come here to try to tell you fishermen's lies. I try to tell you the truth.

If I find problems with science data and things like that, I try to bring that to the table, too, because I think it is important for the scientists to have the best information available to them.

Bill Michaels with the NMFS has been working now for several years to finish the new guidelines for National Standard 2, and that can keeps getting kicked down the road for whatever reason. It was supposed to have been finished last year.

We started that process late in 2009. Now, the last e-mail he gave me said it would be early October. Well, October 25 is not early. I don't know, Rick Methot now being your stock assessment leader for the entire nation, that might be a good thing. If we can get past this backlog of need for assessments in the southeast, I keep calling us the redheaded stepchild down here.

When it came to money for the last 30 years to do the research and everything else, it just didn't happen and yet we have more multiplicity of animals in our ecosystem that it is extremely important to be able to deal with them in a timely way. Once something is assessed, then there is this need to update it. We have a shortage of analysts and where Bonnie went from six analysts that she told me we were going to have and then dropped to five, and there is even rumor of four and with our sharks it's one going to two. That's not enough people, not enough manpower. I hope you don't blame industry for trying to step out there and trying to find a way to get this body and the council and the NMFS to understand that we want to survive. We want a right to exist. That is all I can say. Thank you.

DR. CADRIN: I don't know if it is appropriate to respond, but I share your last sentiment is that I think we do have resource crunches – I think Anne said this earlier on – and that if stakeholders can start investing in science, that should be a good thing. That should be from conservation groups and fishing groups.

You are starting to see that around, that they are hiring consultants to come to meetings, and so it really puts the objectivity standards on bodies like us. Because someone is coming to represent your group or another group, we need to be able to take their contributions and then to develop the most objective basis for science we need to do.

That is exactly why we need this process, is to take the value for what your consultants can give us and give the council the best recommendation, because there is always going to be a balance. We encourage the investment in science, but also we hope that you appreciate that needs to be vetted through a process like this.

MR. HUDSON: Steve, thank you very much for that; I agree. That is why I like the idea of peer reviews and stuff like that. I have tried to help NMFS SEFIS with a whole pile of information as far as fishing information and places to go. I did the same thing for MARMAP. I did the same thing for the council with regards to a lot of the efforts that they were trying to do; the same thing with Nick Farmer. You may have seen my name associated with that.

Lori caught grief this morning over that; but had it been 20 years ago I'd have been strung up, but the last couple years I'm trying to give you the benefit of five generations of people fishing in our area and what we're seeing. My uncle is almost 80 years old and he's been fishing since 1943, deep sea fishing when the Navy allowed us to go out there daytime only.

The ocean is full of fish in a way that he hasn't seen since the forties and fifties and sixties when he's talking about black sea bass, when he's talking about red snappers, when he's talking about

vermilion snappers, when he's talking about these sharks I just mentioned. It is a mess, but are there problems out there still? Yes, there are, because the ecosystem is out of balance. How to get it back into balance; that is a billion dollar question. Thank you.

DR. BARBIERI: Are there any other comments from the committee regarding public comment? I think that concludes public comment. Before we officially adjourn, Chairman Cupka would like to address the committee.

MR. CUPKA: I want to take this opportunity on behalf of the South Atlantic Fishery Management Council to thank you for taking time out of your schedules to participate in this meeting. I think it has been a very productive meeting, and I thank each of you for your participation and input.

I just want to recognize Luiz for the excellent job he's done in chairing the meeting, and I particularly want to thank staff for the work they did in getting the materials together to send out to you all before the meeting and for their presentations and input during the meeting. I think it's been very good.

I want to thank Steve and his group for the work they've done on this peer review process. I think it's a very important issue, and I know the council will look forward to receiving your report on that. Again, I thank you for all your work on that. In conclusion, I just want to wish everyone a safe trip home and again on behalf of the council thank you for all your efforts.

DR. BARBIERI: Thank you so much, Dave. I appreciate you coming forward and addressing the group formally on behalf of the council and thanking us for all the work. We would like to extend our thanks to staff who really do a phenomenal job in bringing all this stuff and helping us conduct the meeting and document the meeting and getting us prepared. It's just a pleasure for us to work with competent staff.

Before we officially adjourn, I know that most of you probably have afternoon travel plans. For those of you, I imagine that we are going to be able to spend some time today, John, perhaps working on – and I don't know if we have the room for the whole day –

MR. CARMICHAEL: We have the room until 3:00 o'clock.

DR. BARBIERI: Yes to three o'clock to perhaps work on our report. My understanding is that we can do this after officially adjourning the meeting. It is just the report preparation is off the record and it doesn't require recording or any specific formal protocol.

MR. CARMICHAEL: We'd rather you not do things off the record in that way. That creates issues that people are wondering what are you doing when you say you are going to be doing things off the record. If you want to adjourn the meeting and you want to assign responsibilities to people to work on parts of the report, that's okay, folks can stay in this room. We have the room if you wish to do that and just make it available to those who are here today if they wish to work on that. But we can't really say, okay, we're adjourning and we are going to then do something off the record. That is a warning sign to what's really going on.

DR. BARBIERI: I thought it was very explicit on what we would be doing. Actually the assignments will be made on the record. Report preparations; myself and Carolyn have prepared the report away from the meeting every single time. I basically just wanted to let people know that as we work on the report today, we don't have to be following the rules of conduct and there won't be any recording.

I guess for the folks who are following the webinar, just to make it clear that we are going to adjourn the meeting, and the committee, as you said, John, will stay in the room to proceed with the report preparation. In terms of assignments for report preparation, I thought we would leave the subcommittee members, Steve and all the other folks who have signed up for the subcommittee a little bit off the hook since they have already done some work and since they will be doing additional work in preparation for this document.

DR. VAUGHAN: This is going to be done over the course of time and not specifically later this morning. It is something we're going to be doing by e-mail, et cetera, anyway.

DR. BARBIERI: Right. I'm thinking about asking some of you, depending on your areas of specialty, to focus on some parts. If Mike can e-mail his notes – well, we can get a thumb drive copy. Folks who don't actually want to stay here; this can be done away from here. It doesn't have to be done in the room. It's just a matter of several of us who have flights later today are going to have to stick around, anyway.

For those of you who are driving and want to leave, by all means, but for those of us who flew here and actually have to stay, I have a flight at six o'clock this evening so I might as well get some work done with the report. Carolyn, I thought that given your expertise or participation on that shrimp working group, that you would help us flesh out the shrimp assessment approaches part.

All of this is basically going through the notes that Mike has already taken there, which have all the main points, and just fleshing them out a little bit, adding some of the discussion points and expanding that just to make it a little more readable. Mike takes mostly like it's bullet points just to remind us of the topics of discussion and the main conclusions or suggestions of the committee, but it always helps to make the report more readable to have some editing.

Would you mind handling that for us? For the P-rebuild for black sea bass, I would say Chip and Jeff – and again if you guys are driving, you don't have to stay here. You can just get a copy of Mike's stuff and communicate through e-mail, but that would help just flesh out a little bit those parts.

Vermilion snapper update assessment, I thought about Vice-Chairman Reichert here that you could flesh that out. Red porgy assessment updates comments, Doug; that is an easy choice there, and I know that you are a member of the subcommittee so I'm double-burdening you, but from Mike and just flesh it out a little bit. Wreckfish analysis, George; and in terms of the regulatory amendments, I don't really think that we have a whole lot of comments to expand. I think we are pretty much there. I can just, based on some of the notes I took, add to Mike's notes and go from there.

Of course, the subcommittee will be working specifically on that other assignment. In terms of assignments, that's pretty much it. If you could send me your expanded comments in about a week to ten days, I will collate all the different parts, edit the whole thing and then distribute to the full committee for comment and review. John, is there anything else that we need to deal with?

MS. LANGE: On the report there, it indicated that the next meeting is the 9th through the 11th, but it is really the eight and a half through the eleventh, right? We're coming in Monday afternoon for the ORCS?

DR. BARBIERI: Right; I think we still need to discuss whether that first half day or the first half day plus the other half day will be a workshop of the ORCS Committee and the SSC meeting; just like what we did – right, it picks up from there. We are going to have participation of the council and the APs and the SSC for that workshop, and then the official SSC meeting is subsequent to that.

MS. LANGE: That's the entire SSC or is that just the ORCS Subcommittee?

DR. BARBIERI: No, that is the entire SSC that, yes, they are invited to participate. Are there any other comments or questions? If not, we are adjourned. Thank you so much for coming. Great job by the committee. I look forward to seeing the subcommittee report and seeing everybody in April. Meeting adjourned.

(Whereupon, the meeting was adjourned October 25, 2012.)

Certified By: _____ Date: _____

Transcribed By:
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November 2012

South Atlantic Fishery Management Council
Scientific & Statistical Committee

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* Denotes year of appointment

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2012 - 2013 Council Membership

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So that we will have a record of your attendance at each meeting and so that your name may be included in the minutes, we ask that you sign this sheet for the meeting shown below.

Science & Statistical Committee Meeting
October 23, 2012
North Charleston, SC

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	EMAIL ADDRESS	P.O. BOX/STREET CITY, STATE & ZIP
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Shanna Gehan Kelley Dyer / Kings Seafood	2029650243	sgehan@kelleydye.com	3050 K ST NW WASH. DC 20007
Helen Takade-Heumacher		htakade@edf.org	
Alec MacCall	831-420-3950	Alec.MacCall@noaa.gov	SWFSC - Santa Cruz
Ken Stump (for PEG)	202-390-9520		
David Wyanski	843-953-9065	wyanskid@dnr.sc.gov	P.O. Box 12559 Charleston, SC 29422
Tanya Darden	843-725-4876	dardento@dnr.sc.gov	SCDNR 331 Fort Johnson, Chas, SC

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Science & Statistical Committee Meeting
October 23, 2012
North Charleston, SC

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	EMAIL ADDRESS	P.O. BOX/STREET CITY, STATE & ZIP
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Kyle Shertzer NOAA	252 728 8607	Kyle.shertzer@noaa.gov	Beaufort NC
Kenny Fex AP	910-620-5847	KaisurFlex@gmail	Oak Island, NC
Katelin Shugart-Schmidt, VT	540-315-1127	Katelin@vt.edu	Blacksburg, VA 24060 101 Cheatham Hall, VT
Joey Ballenger - SCDNR	843-953-9046	ballengerj@dnr.sc.gov	Charleston, SC
Mark E. Brown	843 881 9735	capt.markbrown@comcast.net	Mt Pl SC

Attendee Report GoToWebinar

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Oct 26, 2012 11:19 AM PDT

General Information

Webinar Name
SAFMC SSC Meeting

Webinar ID
992278258

Actual Start Date/Time
Oct 23, 2012 07:46 AM EDT

Actual Duration (minutes)
599

Clicked Registration Link
50

Opened Invitation
52

Total Attended
24

Session Details

Grabman,A andrea.grabman@safmc.net

Attended Yes

Registration Date Oct 23, 2012 09:44 AM EDT

Organization sedar

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:44 AM EDT	Oct 23, 2012 05:17 PM EDT	355.7

Interest Rating

Attendee's In-Session Level of Interest: 27

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Von Harten,Amber amber.vonharten@safmc.net

Attended Yes

Registration Date Oct 23, 2012 09:47 AM EDT

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:48 AM EDT	Oct 23, 2012 11:21 AM EDT	93.47

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.

Mehta,Nikhil	nikhil.mehta@noaa.gov

Attended Yes

Registration Date Oct 15, 2012 09:14 AM EDT

Organization NMFS

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:17 AM EDT	Oct 23, 2012 04:43 PM EDT	505.57

Interest Rating

Attendee's In-Session Level of Interest: 47

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Port-Minner,Samantha	sport-minner@oceanconservancy.org

Attended Yes

Registration Date Oct 22, 2012 07:26 PM EDT

Organization Ocean Conservancy

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:34 AM EDT	Oct 23, 2012 05:31 PM EDT	498.35

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.

crabtree,roy	roy.crabtree@noaa.gov
Attended	Yes
Registration Date	Oct 23, 2012 01:49 PM EDT
Organization	nmfs
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 01:50 PM EDT	Oct 23, 2012 05:06 PM EDT	196.67

Interest Rating

Attendee's In-Session Level of Interest: 52

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Williams,Erik	erik.williams@noaa.gov
Attended	Yes
Registration Date	Oct 22, 2012 11:22 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:29 AM EDT	Oct 23, 2012 04:31 PM EDT	481.67

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.

Pate,Michelle	pates@dnr.sc.gov
Attended	Yes
Registration Date	Oct 23, 2012 08:34 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:34 AM EDT	Oct 23, 2012 04:21 PM EDT	467.35

Interest Rating

Attendee's In-Session Level of Interest: 29

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

fitzpatrick,eric	eric.fitzpatrick@noaa.gov
Attended	Yes
Registration Date	Oct 23, 2012 09:21 AM EDT
Organization	noaa
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:21 AM EDT	Oct 23, 2012 03:33 PM EDT	371.97

Interest Rating

Attendee's In-Session Level of Interest: 59

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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Attended	Yes
Registration Date	Oct 23, 2012 08:13 AM EDT
Organization	NOAA
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:13 AM EDT	Oct 23, 2012 10:40 AM EDT	146.85

Interest Rating

Attendee's In-Session Level of Interest: 23

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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Attended	Yes
Registration Date	Oct 23, 2012 11:35 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 11:36 AM EDT	Oct 23, 2012 05:45 PM EDT	284.07

Interest Rating

Attendee's In-Session Level of Interest: 42

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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Attended	Yes
Registration Date	Oct 23, 2012 09:03 AM EDT
Organization	SCDNR-MARMAP
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:04 AM EDT	Oct 23, 2012 12:37 PM EDT	213.27

Interest Rating

Attendee's In-Session Level of Interest: 25

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Fitzpatrick,Kelly	kelly.fitzpatrick@noaa.gov
Attended	Yes
Registration Date	Oct 23, 2012 10:27 AM EDT
Organization	NMFS
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 10:27 AM EDT	Oct 23, 2012 02:41 PM EDT	253.3

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.

MacLauchlin,Bill	billmac@charter.net
Attended	Yes
Registration Date	Oct 23, 2012 10:52 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 10:52 AM EDT	Oct 23, 2012 04:31 PM EDT	338.3

Interest Rating

Attendee's In-Session Level of Interest: 89

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Locke,Melissa	mlocke@edf.org
Attended	Yes
Registration Date	Oct 23, 2012 10:45 AM EDT
Organization	EDF
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 10:45 AM EDT	Oct 23, 2012 05:03 PM EDT	377.37

Interest Rating

Attendee's In-Session Level of Interest: 27

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.

Waters,James	jwaters8@gmail.com

Attended Yes

Registration Date	Oct 23, 2012 10:38 AM EDT
Organization	none
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 10:38 AM EDT	Oct 23, 2012 10:40 AM EDT	1.58

Interest Rating

Attendee's In-Session Level of Interest: 63

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Cheshire,Rob	rob.cheshire@noaa.gov

Attended Yes

Registration Date	Oct 23, 2012 01:27 PM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 02:26 PM EDT	Oct 23, 2012 03:33 PM EDT	67.53

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.

Cox,Jack	dayboat1965@gmail.com

Attended Yes

Registration Date Oct 23, 2012 07:07 AM EDT

Organization SAFA

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 01:52 PM EDT	Oct 23, 2012 02:51 PM EDT	29.95

Interest Rating

Attendee's In-Session Level of Interest: 57

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mahood,Robert	robert.mahood@safmc.net

Attended Yes

Registration Date Oct 23, 2012 09:46 AM EDT

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:46 AM EDT	Oct 23, 2012 05:15 PM EDT	446.28

Interest Rating

Attendee's In-Session Level of Interest: 30

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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c,m	mec181@yahoo.com

Attended Yes

Registration Date	Oct 23, 2012 08:53 AM EDT
Organization	safmc
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:54 AM EDT	Oct 23, 2012 04:02 PM EDT	427.57

Interest Rating

Attendee's In-Session Level of Interest: 28

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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Attended Yes

Registration Date	Oct 23, 2012 08:29 AM EDT
Organization	Environmental Defense Fund
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 08:29 AM EDT	Oct 23, 2012 05:45 PM EDT	554.1

Interest Rating

Attendee's In-Session Level of Interest: 34

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

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dominguez,evelyn	lyn0481@yahoo.com

Attended Yes

Registration Date Oct 23, 2012 09:37 AM EDT

Organization Isnaury Becerra Fisherman

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:38 AM EDT	Oct 23, 2012 01:12 PM EDT	214.45

Interest Rating

Attendee's In-Session Level of Interest: 24

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Strelcheck,Andy	andy.strelcheck@noaa.gov

Attended Yes

Registration Date Oct 15, 2012 03:42 PM EDT

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 03:44 PM EDT	Oct 23, 2012 04:40 PM EDT	56.83

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.

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Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 09:15 AM EDT	Oct 23, 2012 04:34 PM EDT	439.6

Interest Rating

Attendee's In-Session Level of Interest: 35

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

FARMER,NICK	nick.farmer@noaa.gov
Attended	Yes
Registration Date	Oct 15, 2012 10:38 AM EDT
Organization	NOAA FISHERIES
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 23, 2012 01:53 PM EDT	Oct 23, 2012 05:18 PM EDT	205.12

Interest Rating

Attendee's In-Session Level of Interest: 25

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.

Eich,Anne Marie	annemarie.eich@noaa.gov

Attended No

Registration Date Oct 17, 2012 09:42 AM EDT

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.

PLEASE SIGN IN

So that we will have a record of your attendance at each meeting and so that your name may be included in the minutes, we ask that you sign this sheet for the meeting shown below.

Science & Statistical Committee Meeting
October 24, 2012
North Charleston, SC

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	EMAIL ADDRESS	P.O. BOX/STREET CITY, STATE & ZIP
Rusty Hudson SAFMC	386-239-0948	2457@aol.com	32120-9351
Kenny Fex AP	910-620-5847	kennyfex@gmail	Oak Island NC
Helen Takade-Heumacher EDF		htakade@edf.org	

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405
843-571-4366 or Toll Free 866/SAFMC-10

Attendee Report GoToWebinar

Generated
Oct 25, 2012 11:19 AM PDT

General Information

Webinar Name
SAFMC SSC Meeting

Webinar ID
923051050

Actual Start Date/Time
Oct 24, 2012 07:47 AM EDT

Actual Duration (minutes)
691

Clicked Registration Link
38

Opened Invitation
46

Total Attended
24

Session Details

Mahood,Bob robert.mahood@safmc.net

Attended Yes

Registration Date Oct 24, 2012 08:46 AM EDT

Organization Safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:46 AM EDT	Oct 24, 2012 04:45 PM EDT	572.08

Interest Rating

Attendee's In-Session Level of Interest: 10

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Stump,Ken magpiewdc@gmail.com

Attended Yes

Registration Date Oct 24, 2012 09:32 AM EDT

Organization Pew Environment Group consult

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:32 AM EDT	Oct 24, 2012 11:54 AM EDT	141.6

Interest Rating

Attendee's In-Session Level of Interest: 3

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.

Von Harten,Amber	amber.vonharte@safmc.net
Attended	Yes
Registration Date	Oct 24, 2012 08:17 AM EDT
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:17 AM EDT	Oct 24, 2012 09:04 AM EDT	46.53

Interest Rating

Attendee's In-Session Level of Interest: 35

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

sedberry,george	george.sedberry@noaa.gov
Attended	Yes
Registration Date	Oct 24, 2012 08:33 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:33 AM EDT	Oct 24, 2012 01:36 PM EDT	212.68

Interest Rating

Attendee's In-Session Level of Interest: 20

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.

fitzpatrick,eric	eric.fitzpatrick@noaa.gov

Attended Yes

Registration Date Oct 23, 2012 09:20 AM EDT

Organization noaa

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:43 AM EDT	Oct 24, 2012 11:13 AM EDT	89.72

Interest Rating

Attendee's In-Session Level of Interest: 21

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Von Harten,Amber	amber.vonharten@safmc.net

Attended Yes

Registration Date Oct 24, 2012 09:53 AM EDT

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:54 AM EDT	Oct 24, 2012 01:03 PM EDT	189.72

Interest Rating

Attendee's In-Session Level of Interest: 4

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	Oct 24, 2012 08:36 AM EDT
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:36 AM EDT	Oct 24, 2012 04:45 PM EDT	486.63

Interest Rating

Attendee's In-Session Level of Interest: 12

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

FARMER,NICK	nick.farmer@noaa.gov
Attended	Yes
Registration Date	Oct 15, 2012 10:39 AM EDT
Organization	NOAA FISHERIES
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:33 AM EDT	Oct 24, 2012 11:53 AM EDT	199.68

Interest Rating

Attendee's In-Session Level of Interest: 4

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.

Ballenger,Joseph	ballengerj@dnr.sc.gov
Attended	Yes
Registration Date	Oct 24, 2012 08:36 AM EDT
Organization	SCDNR
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:37 AM EDT	Oct 24, 2012 05:18 PM EDT	520.45

Interest Rating

Attendee's In-Session Level of Interest: 10

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Wyanski,David	wyanskid@dnr.sc.gov
Attended	Yes
Registration Date	Oct 16, 2012 10:01 AM EDT
Organization	SCDNR, MARMAP program
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:40 AM EDT	Oct 24, 2012 01:58 PM EDT	56.58

Interest Rating

Attendee's In-Session Level of Interest: 10

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.

Martin,Gretchen	gmartin@edf.org
Attended	Yes
Registration Date	Oct 24, 2012 08:22 AM EDT
Organization	Environmental Defense Fund
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:22 AM EDT	Oct 24, 2012 05:11 PM EDT	528.75

Interest Rating

Attendee's In-Session Level of Interest: 17

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Boreman,John	john.boreman@ncsu.edu
Attended	Yes
Registration Date	Oct 24, 2012 09:09 AM EDT
Organization	SSC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:09 AM EDT	Oct 24, 2012 01:38 PM EDT	167.8

Interest Rating

Attendee's In-Session Level of Interest: 25

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.

DeVictor,Rick	rick.devictor@noaa.gov
Attended	Yes
Registration Date	Oct 24, 2012 08:49 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:50 AM EDT	Oct 24, 2012 04:33 PM EDT	462.83

Interest Rating

Attendee's In-Session Level of Interest: 14

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Long,Stephen	longs@dnr.sc.gov
Attended	Yes
Registration Date	Oct 24, 2012 08:53 AM EDT
Organization	SCDNR-MARMAP
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:54 AM EDT	Oct 24, 2012 04:44 PM EDT	470.28

Interest Rating

Attendee's In-Session Level of Interest: 0

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.

brouwer,myra	myrab123@hotmail.com
Attended	Yes
Registration Date	Oct 24, 2012 09:17 AM EDT
Organization	SAFMC
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:17 AM EDT	Oct 24, 2012 01:47 PM EDT	270.23

Interest Rating

Attendee's In-Session Level of Interest: 10

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

c,m	mec181@yahoo.com
Attended	Yes
Registration Date	Oct 24, 2012 08:17 AM EDT
Organization	safmc
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:18 AM EDT	Oct 24, 2012 03:59 PM EDT	461.3

Interest Rating

Attendee's In-Session Level of Interest: 12

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.

Port-Minner,Samantha	sport-minner@oceanconservancy.org

Attended Yes

Registration Date Oct 22, 2012 07:27 PM EDT

Organization Ocean Conservancy

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:25 AM EDT	Oct 24, 2012 05:02 PM EDT	525.55

Interest Rating

Attendee's In-Session Level of Interest: 10

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Martin,Anna	anna.martin@safmc.net

Attended Yes

Registration Date Oct 24, 2012 01:56 PM EDT

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 01:57 PM EDT	Oct 24, 2012 03:38 PM EDT	101.3

Interest Rating

Attendee's In-Session Level of Interest: 1

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.

dominguez,evelyn	lyn0481@yahoo.com
Attended	Yes
Registration Date	Oct 24, 2012 09:22 AM EDT
Organization	isnaury becerra fisherman
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:23 AM EDT	Oct 24, 2012 02:13 PM EDT	290.77

Interest Rating

Attendee's In-Session Level of Interest: 8

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mehta,Nikhil	nikhil.mehta@noaa.gov
Attended	Yes
Registration Date	Oct 15, 2012 09:14 AM EDT
Organization	NMFS
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:15 AM EDT	Oct 24, 2012 04:33 PM EDT	497.63

Interest Rating

Attendee's In-Session Level of Interest: 34

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.

Locke,Melissa nilocke@edf.org

Attended Yes

Registration Date Oct 24, 2012 10:17 AM EDT

Organization EDF

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 10:17 AM EDT	Oct 24, 2012 05:03 PM EDT	405.25

Interest Rating

Attendee's In-Session Level of Interest: 9

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Smart,Tracey smartt@dnr.sc.gov

Attended Yes

Registration Date Oct 24, 2012 08:39 AM EDT

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 08:39 AM EDT	Oct 24, 2012 05:00 PM EDT	500.93

Interest Rating

Attendee's In-Session Level of Interest: 10

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.

strelcheck,andy	andy.strelcheck@noaa.gov
Attended	Yes
Registration Date	Oct 15, 2012 03:43 PM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:44 AM EDT	Oct 24, 2012 01:32 PM EDT	227.98

Interest Rating

Attendee's In-Session Level of Interest: 15

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

g,a	andrea.grabman@safmc.net
Attended	Yes
Registration Date	Oct 24, 2012 09:43 AM EDT
Organization	sedar
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 24, 2012 09:43 AM EDT	Oct 24, 2012 04:06 PM EDT	241.57

Interest Rating

Attendee's In-Session Level of Interest: 5

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.

Eich,Anne Marie	annemarie.eich@noaa.gov
Attended	No
Registration Date	Oct 17, 2012 09:43 AM EDT
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

Williams,Erik	erik.williams@noaa.gov
Attended	No
Registration Date	Oct 22, 2012 11:22 AM EDT
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.

phillips,todd	tphillips@oceanconservancy.org
Attended No	
Registration Date	Oct 24, 2012 11:24 AM EDT
Organization	Ocean 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

*If an attendee left and rejoined the session, the In Session Duration column only includes their first visit.

PLEASE SIGN IN

So that we will have a record of your attendance at each meeting and so that your name may be included in the minutes, we ask that you sign this sheet for the meeting shown below.

Science & Statistical Committee Meeting
October 25, 2012
North Charleston, SC

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	EMAIL ADDRESS	P.O. BOX/STREET CITY, STATE & ZIP
Rusty Hudson ASA ECTS	386-239-0948	rustyhudson57@aol.com	32120-9351
Helen Takade-Heumacher EDF		htakade@edf.org	
Mark Brown	843 881 9735	—	Mt P C SC

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405
843-571-4366 or Toll Free 866/SAFMC-10

Attendee Report GoToWebinar

Generated
Oct 25, 2012 11:20 AM PDT

General Information

Webinar Name
SAFMC SSC Meeting

Webinar ID
634470274

Actual Start Date/Time
Oct 25, 2012 07:46 AM EDT

Actual Duration (minutes)
139

Clicked Registration Link
26

Opened Invitation
80

Total Attended
11

Session Details

pugliese,roger — **roger.pugliese@safmc.net**

Attended Yes

Registration Date Oct 25, 2012 08:56 AM EDT

Organization SAFMC

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:56 AM EDT	Oct 25, 2012 10:05 AM EDT	68.68

Interest Rating

Attendee's In-Session Level of Interest: 27

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mehta,Nikhil — **nikhil.mehta@noaa.gov**

Attended Yes

Registration Date Oct 15, 2012 09:14 AM EDT

Organization NMFS

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:30 AM EDT	Oct 25, 2012 10:05 AM EDT	95.3

Interest Rating

Attendee's In-Session Level of Interest: 40

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.

Boreman,John john.boreman@ncsu.edu

Attended Yes

Registration Date Oct 25, 2012 08:34 AM EDT

Organization

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:38 AM EDT	Oct 25, 2012 08:39 AM EDT	1.02

Interest Rating

Attendee's In-Session Level of Interest: 20

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

c,m c mec181@yahoo.com

Attended Yes

Registration Date Oct 25, 2012 08:11 AM EDT

Organization safmc

Unsubscribed No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:11 AM EDT	Oct 25, 2012 10:05 AM EDT	114.55

Interest Rating

Attendee's In-Session Level of Interest: 31

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.

Martin,Gretchen	gmartin@edf.org
Attended	Yes
Registration Date	Oct 25, 2012 08:37 AM EDT
Organization	Environmental Defense Fund
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:37 AM EDT	Oct 25, 2012 10:05 AM EDT	88.13

Interest Rating

Attendee's In-Session Level of Interest: 36

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

DeVictor,Rick	rick.devictor@noaa.gov
Attended	Yes
Registration Date	Oct 25, 2012 08:55 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:57 AM EDT	Oct 25, 2012 10:06 AM EDT	68.9

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.

Von Harten,Amber	amber.vonharten@safmc.net
Attended	Yes
Registration Date	Oct 25, 2012 08:51 AM EDT
Organization	
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:52 AM EDT	Oct 25, 2012 10:05 AM EDT	73.17

Interest Rating

Attendee's In-Session Level of Interest: 30

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Port-Minner,Samantha	sport-minner@oceanconservancy.org
Attended	Yes
Registration Date	Oct 25, 2012 08:31 AM EDT
Organization	Ocean conservancy
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:31 AM EDT	Oct 25, 2012 10:05 AM EDT	92.28

Interest Rating

Attendee's In-Session Level of Interest: 22

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.

Ballenger,Joseph	ballengerj@dnr.sc.gov
Attended	Yes
Registration Date	Oct 25, 2012 08:31 AM EDT
Organization	SCDNR
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 08:31 AM EDT	Oct 25, 2012 10:05 AM EDT	94.17

Interest Rating

Attendee's In-Session Level of Interest: 29

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

Mahood,Bob	robert.mahood@safmc.net
Attended	Yes
Registration Date	Oct 25, 2012 09:28 AM EDT
Organization	Safmc
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 09:29 AM EDT	Oct 25, 2012 10:05 AM EDT	36.6

Interest Rating

Attendee's In-Session Level of Interest: 20

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	Yes
Registration Date	Oct 25, 2012 09:44 AM EDT
Organization	sedar
Unsubscribed	No

In Session

Join Time	Leave Time	In Session Duration* (minutes)
Oct 25, 2012 09:44 AM EDT	Oct 25, 2012 10:05 AM EDT	21.22

Interest Rating

Attendee's In-Session Level of Interest: 22

Registration Q & A

Questions Asked by Attendee

Poll Questions

Post Session Survey Questions

FARMER,NICK	nick.farmer@noaa.gov
Attended	No
Registration Date	Oct 15, 2012 10:39 AM EDT
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.

Eich,Anne Marie	annemarie.eich@noaa.gov
Attended No	
Registration Date	Oct 17, 2012 09:44 AM EDT
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

Whitehead,John	whiteheadjc@appstate.edu
Attended No	
Registration Date	Oct 25, 2012 10:17 AM EDT
Organization	Appalachian State University
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.

Fitzpatrick,Eric	eric.fitzpatrick@noaa.gov
Attended	No
Registration Date	Oct 23, 2012 08:58 AM EDT
Organization	NOAA
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

Williams,Erik	erik.williams@noaa.gov
Attended	No
Registration Date	Oct 22, 2012 11:21 AM EDT
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.

Long,Stephen	longs@dnr.sc.gov
Attended	No
Registration Date	Oct 25, 2012 10:56 AM EDT
Organization	SCDNR-MARMAP
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

Locke,Melissa	mlocke@edf.org
Attended	No
Registration Date	Oct 25, 2012 11:01 AM EDT
Organization	EDF
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.