SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Sheraton Atlantic Beach Hotel
Atlantic Beach, NC

December 6-8, 2009

DRAFT MINUTES

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Dr. Bonnie Ponwith
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Tony Lamberte
Dr. Nick Farmer
Dr. Mike Prager

Additional Observers and Participants Attached

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened in the Sheraton Atlantic Beach Hotel, Atlantic Beach, North Carolina, Sunday afternoon, December 6, 2009, and called to order at 3:00 o'clock p.m. by Chairman Carolyn Belcher.

DR. BELCHER: We're going to go ahead and started. I would like to welcome everybody to the December SSC meeting. I would like to start with voice recognition.

DR. CIERI: Matt Cieri, Maine DMR.

DR. BOREMAN: John Boreman, North Carolina State University.

DR. COOPER: Andy Cooper, Simon Fraser University.

DR. REICHERT: Marcel Reichert, South Carolina DNR.

MR. CARMICHAEL: John Carmichael, South Atlantic Council.

DR. BELCHER: Carolyn Belcher, Georgia DNR and SSC Chair.

DR. CROSSON: Scott Crosson, North Carolina DMF.

DR. BUCKEL: Jeff Buckel, North Carolina State University.

DR. LARKIN: Sherry Larkin, University of Florida.

DR. WILLIAMS: Erik Williams, National Marine Fisheries Service, Beaufort.

MR. COLLIER: Chip Collier, North Carolina Marine Fisheries.

MR. CHESTER: Alex Chester, Independent Research Fishery Biologist.

DR. BELCHER: We have three people that we had signed up – I know you all have your assignment list and I had identified rapporteurs for each of the items on the agenda. Currently three folks have dropped from the meeting for personal reasons, and I need to fill three spots with rapporteurs. I had the Comprehensive ACL Amendment, which I've just written down names, but right now I had John Whitehead put down for that and John is not here yet. Is anybody willing to volunteer who is not already rapporteuring for a section that would be willing to do the ACL? It's just rapporteuring and catching the items and consensus and all. Okay, Sherry said she would do that.

The SEDAR, so with that one, as long as people are willing to just take notes for themselves as to who is willing to take on the assignment, that would be fine. It really doesn't need to be that formal I think compared to some of the other ones. Then the last one was Amendment 17A, and I had put John down, but anyone else that – because of the real crux of the meeting to focus in on

17A, anybody that can lend a pen to paper it would be greatly appreciated to make sure that we capture everything for that particular item given the importance right now.

Okay, moving into items on the agenda, first off is the approval of the agenda. Has everybody had a chance to look through at the ordering? I know it looks a little bit kind of odd for Monday because we're starting with Amendment 17A. Obviously, given the importance I wanted to make sure it was at the front of the agenda so that we gave it the time it needed, but we will be preempted for two presentations, and that's because of concurrent presentations to both the council and SSC.

We will have a lionfish presentation and a coral presentation, and that will be on Monday at 10:00 o'clock. Does anybody have any other things that they'd like to see, change in order or any concerns about the agenda other than the length? Okay, seeing no comments or questions, then the agenda will stand as is.

The next item is the approval of the June 2009 minutes. Does anybody have any comments, questions, edits about the minutes from June? Seeing no comments, I'll assume that the meeting minutes stand as currently written. The approval of the October 2009 minutes, these were our SSC and Selection Committee meeting minutes. I know some folks couldn't make it, but those of you were there, everybody have a change to look them over.

MR. CARMICHAEL: They were provided in an audio file.

DR. BELCHER: Anybody have any exceptions? Okay, the audio minutes obviously will stand as is unless you want to correct who you are on tape. The first action item for us is SEDAR activities. John is going to give us an overview and then our general action is looking at the schedules, reviewing and approving the terms of reference and looking for SSC and other participants for those activities where we need them.

MR. CARMICHAEL: Dale will come up here and carry us through. He is working on the series of updates that we have this year for red snapper, black sea bass, snowy grouper, and then joint with the Gulf to do spiny lobster. We had some conversations with quite a few of you and then other others in the Gulf SSC about the change in SEDAR procedures that are coming up this year.

We're definitely interested in considering those discussions and seeing how this process works out with some of changes on how we do things and rolling out and doing a lot of these activities over webinars. We hope it makes it easier for a lot of you guys to participate and increases the number of people that have been involved. To give you an update on SEDAR 19, I guess we're through the assessment workshop phase; the review workshop coming up in January, the 25th through 29th.

Those of you involved, the draft assessment reports started making their way back to the panel and be out for people for the review workshop and stuff to read probably before too long, probably right after the first of year, I expect. They're doing quite well on that. Then you will

get the final reports at your next meeting to look at there, which will be April I guess what we've scheduled.

SEDAR has a procedures' workshop coming up in February, near the end of February to talk about uncertainty, how uncertainty is addressed in assessments, how it's presented. It will certainly have to tie into how it's expressed with regard to ABC control rules and overfishing definitions and the probabilities of overfishing and things of that nature.

We've been getting a lot of interest in that workshop. A lot of people are interested in participating. We will be looking for a couple of SSC members here who are interested in participating. It's one of our action items, Carolyn, to see who here is not already involved by virtue of their roles such as Erik, but might be interested in participating in this workshop. It will be our procedural workshop for 2010.

Then the other items will be relating to the update, so you've got information you received, and I'll hand it over to Dale on those. He can talk about what we need to get here. This is just sort of the regular process administrative review for you guys to weigh in on the scheduling and the terms of reference.

I hope that you've given some thought to the terms for red snapper because that's kind of a biggie based on what has been going on. We've got additional terms of reference which you might have seen in some of the past updates to address some of the concerns that have been raised lately such as questions about discard mortality rates, historical landings and that selectivity question.

MR. THEILING: We have prepared for you the draft terms of reference for the three South Atlantic Updates that are going to be performed by Beaufort in 2010. They are for snowy grouper, black sea bass and red snapper. The plan right now is that all three will conclude in a workshop, all three stocks in one Beaufort in August. That's just part of the schedule that is laid out. Otherwise, the schedules are different because of a series of webinars scheduled for each.

That includes data identification, qualification, assessment webinars; then the joint assessment workshop and one webinar following prior to the assessment being brought to the SSC for review. The schedule shows certain dates for certain webinars. That's all tentative in the sense that since we don't yet who the SSC players will be on the assessment panel we can't conclude those dates yet.

Each one of you should have with you – and I hope you've looked it over already – the terms of reference for these three different stocks. They have been developed and again they're just draft. They're here for you to perfect. They were based on the terms of reference that were used in the most recent SEDAR assessment.

In all of these cases there has been a previous SEDAR benchmark. In the case of black sea bass there has also been a previous SEDAR update. All of those terms of reference were considered in drafting the set before you right now as well as some of the comments that were made in those

earlier assessments as to need for the future. We also considered the research recommendations that were generated under those assessments. Madam Chairman and John, those are available for your discussion.

In addition to that we have the schedule, which again I say is tentative. We'd like very much to stick with the August date for the workshop because we have had to coordinate with other SEDAR activities as well as including some updates that involve Florida and the Gulf of Mexico. Before we leave, Madam Chair, we would like to have assigned four SSC committee members in total to the workshop and the assessment panel for these three updates. If you prefer, you can proceed and name the chairperson for the assessment workshop, but that can be done later.

DR. BELCHER: So given what we have on the table in front of us, do we have volunteers for any specific activities? Has anybody looked at their schedules yet to see how it will fit in? I'm willing to volunteer for the uncertainty workshop.

DR. CIERI: I will as well.

DR. BELCHER: Okay, Matt. Anyone else?

DR. COOPER: I can't do the uncertainty workshop, but I can probably do things that are taking place during the summer but not in the fall of 2010. I'm having a little trouble figuring out where the review workshops are versus the webinars, but the stuff going on in the summer I can help out.

MR. CARMICHAEL: Well, the review of the updates is by the SSC, and so the preliminary schedule has that occurring at the end of January, the first week of February, and that gets it at keeping with a consistent timing with the benchmarks. What we've talked about some is that if these things are done sooner – like spiny lobster is scheduled be done in mid-October – if we can get them done sooner, then we could potentially have the SSC meet on these sooner and have these to the council in December, but that's something that we need to talk about.

I'm sure that the Science Center representatives who have to do a lot of the work on these would probably want to talk about them as well. I know snowy grouper and these are scheduled to end November 1st and to have the draft of the report done by November 1st, which probably puts us right into either the December council meeting and the holidays for trying to have an SSC; so I think if we wanted to get it to get it to council in December, the SSC meeting to look at these is going to have to be sometime in late October, so this would have to have these getting done a little bit sooner than what is scheduled.

DR. COOPER: I'm sitting here looking at the schedule, in this case black sea bass, and just for the future, in looking at what is going on and the dates, I'm having trouble figuring out when it is an assessment workshop or review workshop. The data one is pretty easy to parse out, but just some wording on this for the future. That may be because I just don't understand it.

MR. CARMICHAEL: This assessment is going to be developed over the series of webinars, which is essentially Webinar 1, 2, 3 and 4, which is June through August. The data is a scoping process, which is relatively brief. So it's going to be a group of people involved in participating in these webinars and contributing to the guys doing the models. Those are in the summer and maybe you can participate?

DR. REICHERT: I can be there in August. I'm probably going to be there as one of the data providers.

DR. BOREMAN: I just want to be clear; what are you looking for now; for both the black sea bass and snowy grouper, too, and others?

DR. BELCHER: Yes.

DR. BOREMAN: Because I'll be willing to participate in the snowy grouper update. Are you still looking for volunteers for the data uncertainty workshop?

DR. BELCHER: How many people do you want for that, John?

MR. CARMICHAEL: I was just trying to recall. I think we were at two or three SSC members; so if you're interested in participating in that, I think we can handle it.

DR. BELCHER: Okay, I have three folks for the uncertainty workshop, three folks down under the SEDAR updates, Andy, Marcel and John.

MR. COLLIER: And I'll volunteer for that as well.

DR. BELCHER: Okay, Chip, so that's your four, Dale. Then you wanted a volunteer as well for spiny?

MR. CARMICHAEL: Yes, we'd like to get a couple for spiny as well. That's a little different; different stock, different issues. I t would be joint with the Gulf; so if there are a couple of people here that have some knowledge of spiny lobster or crustacean assessments, it would certainly be helpful, but if you have some general knowledge as well – of course, as always, we definitely need a couple of SSC members. If you're familiar with those stocks in particular, that would be a good one to jump in on.

DR. BELCHER: Well, not to speak for Luis, but I know Luis said he will be involved in that, so I don't know if that would count or not count. I know he is involved from the state level.

MR. CARMICHAEL: It semi-counts, but we would like a couple of SSC members in addition to him, and I'm sure he would appreciate the opinions of a couple of SSC members as they work through as well.

DR. LARKIN: I'm interested. I know a little bit about it. I mean, I can't help with the assessment. Is this the one that's going to be the 23rd through 25th of August? I saw some dates in there for that.

MR. THEILING: No, that plan is a three-day workshop probably in Marathon the week before – I don't have the calendar, but it would be the week before this workshop, which is set for mid-August for three days.

DR. LARKIN: If you're looking for a socio-economic type, then I would be willing.

MR. CARMICHAEL: We're looking for a scientific type.

DR. BUCKEL: Dave Eggleston of NC State has done quite a bit of work on spiny lobster down in the Keys and he might be interested in serving on that.

MR. CARMICHAEL: Sure, you can suggest other names of people that you think would really have a lot to bring to the table who we can pursue.

DR. BELCHER: So, getting into some of the more aspects of that, comments on terms of reference. Andy.

DR. COOPER: In general one of the things I noticed is there wasn't specific requirements of giving the actual values for OFL and ABC. There is some wording in there of providing the information such as SSC can determine these; but given my understanding is the SSC isn't actually supposed to be calculating anything, that even when they're under rebuilding schedules, we need to still set OFL equals ABC equals. I didn't know if we needed more specific wording to make sure those specific values are given or am I just completely out to lunch.

MR. CARMICHAEL: Well, it does request the SFA parameters in the stock status criteria and it requests projecting future stock conditions for use by the SSC in setting ABC, so they'll give you the information from which you can set the OFL and the ABC.

DR. COOPER: I guess maybe we could try to do those directions and give them enough guidance as to what exactly we're going to need. I mean, a simple projection is good enough – I mean I don't quite remember how we're going to be setting the OFLs under these rebuilding plans given the rebuilding schedule.

MR. CARMICHAEL: Well, the table of recovering probabilities by 2010 for the range of TACs and update to fix rebuilding or changes warranted, so there is quite a bit of language in there about asking for what the TACs would be, which then you would pull off for your OFLs and ABCs. I guess I would have to ask Erik if he's clear in what is being asked for these and if there is enough information or if somehow it needs to be modified.

DR. WILLIAMS: Yes, you probably should be a little more specific. I mean we know what you need, but what is missing here is some mention of a probability analysis for determining ABC

and a stochastic projection for determining the probability of rebuilding. Those are the two key things we need.

MR. THEILING: Let me remind you there are three sets of terms of reference here, so everybody may be looking at different ones.

DR. WILLIAMS: I'm looking at the red snapper one, but are they that different?

MR. THEILING: Yes, they are.

MR. CARMICHAEL: Keep in mind snowy grouper and black sea bass are under existing rebuilding plans, and those rebuilding plans were put into place without the probability analysis as would be suggested for future rebuilding plans. The snowy grouper and black sea bass get in looking at the TACs that are in place now; and the TACs changes could be made to achieve rebuilding by rebuilding dates that are already picked.

I don't know that you necessarily want to go and reconsider what was done in these stocks that are already under rebuilding plans that were in place prior to things that are coming up right now. This is really about updating information that supports those rebuilding plans. Red snapper is different because it's not as far along as these other two. It's not years into a rebuilding plan.

Perhaps you don't necessarily need the probability analysis with regard to rebuilding by this time period for snowy grouper and black sea bass. What you really need to know is given the rebuilding timeframe that has been established, what is the allowable harvest. They've looked at I think fixed harvest levels for these two stocks. So that's what you'd really be updating for these; what harvest level will rebuild by the timeframe that is set by the council.

DR. CIERI: I guess that was part of my point; these are update assessments and not benchmarks, so maybe we just simply want to have something on the table that at least gives the managers an idea if they're going to hit those targets that they're shooting for rather than the probability determination.

MR. CHESTER: One advantage that we would have by going through a P-star is I think the current rebuilding plans assume a probability of success at 50 percent, and we might want to look and see for future guidance what probability we perhaps should be shooting for.

MR. CARMICHAEL: That is the question that's asked like in looking at snowy grouper under TOR 7, which addresses future stock conditions, so I guess this is the place to look and see if there needs to be clarity. It asks is the recovery on track; what is the probability of stock recovery in 2040 at the current fixed TAC of 102,000 pounds; and what year does the recovery reach 40 percent? I guess that's the percent SPR, then – what year do you reach 40 percent SPR – provide a table with recovery probabilities in the 2040 for a range of fixed TACs; so that would be getting at for a range of values what is the recovery probability if you wish to change it.

And then update the fixed rebuilding TAC and are changes in the TAC warranted. I think for that, given it is an existing rebuilding plan, do you think that handles it? And black sea bass is very similar. Then in red snapper we'll look at the one and make sure that we get the language in there about having a probability analysis and the stochastic projections to determine probabilities of rebuilding for red snapper.

DR. WILLIAMS: I suspect this question might come up again in 17A. It's a basic one but I still am unclear; does red snapper fall under the new revised Magnuson Act for management right now or not given that the assessment was done prior to NS 1 Guidelines being finalized and prior to us establishing an ABC control rule, but now the update will fall after those things have happened? I'm kind of unclear as to what guidelines we will be following, then, for red snapper.

MR. CARMICHAEL: Gregg, do you have the answer to that? We're proceeding as if it is.

MR. WAUGH: Yes, my assumption is the new requirements would apply, but that's an excellent question to pose to our attorney when she gets here.

DR. BOREMAN: We had the same issue in the Mid-Atlantic. If you're setting quotas or catch limits for any species, whether they're overfished or not, that applies now, the ABCs.

DR. CIERI: Similar with New England; in a lot of cases if you're setting specifications – I don't how long you guys are setting your specification time-wise off the top of my head, but if that's the case and it goes into that timeframe past 2011, where stocks aren't overfished have to be under those guidelines, you have to proceed like you are.

DR. BELCHER: So does that help clarify? John.

DR. BOREMAN: Yes, if we're off that topic, I have a couple or more comments on the terms of reference. One is edification on my part. I noticed in all three of these sets there is a statement here on document any changes in assessment methodology, but these are updates; aren't they? It would be rare if not happening at all if you would go in and update the methodology that usually happens during a benchmark. Is this just a CYA type of statement in here in case somebody has an aha moment in the middle? In other words, are assessment methodology changes allowed during the updates?

MR. CARMICHAEL: To some extent they are. Understanding that it's a bit of a gray area as to how much of a change triggers a benchmark, it's up to the SSC to draw line within that gray area. A good example that probably helps to explain it a lot for you and others who are newer to this is to say when we did the update of black sea bass, the first update that we did, there had been some changes in how some of the CPUE indices were calculated.

There were some advancements in the basic modeling techniques that didn't affect the underlying structure, but they did affect how some of the outputs were presented and how some of the different data sets were worked together within the time series. They came up with a

method of breaking out the headboat CPUE into some different time periods that reflected regulatory-based selectivity changes.

So, we put language in there that will allow the SSC to say, yes, those are advancements that have happened in our basic model structure that have improved them. And those are advancements that have been approved by SEDAR reviews, so we do allow some small amount of bringing the models up to the current standard, but not in terms of, say, going out and doing a whole different modeling approach.

DR. BOREMAN: Thanks, and my second comment is two of these three species have rather peculiar life history, the black sea bass and the grouper, not usual. It would be helpful at least to me if I saw a term of reference in there that reflects in what way does their peculiar life history pattern is peculiar with relation to your normal other species like snappers and so on.

In what ways do their peculiar life history patterns add to uncertainty in the stock parameter estimates? I don't see that coming out at all in any of the terms of reference, but I know it's something that we're dealing with in the Mid-Atlantic, too, with black sea bass, and we will be with grouper as well.

MR. CARMICHAEL: That was addressed quite a bit in the benchmarks, and it wouldn't be bad to bring that up and focus on it again, especially with regard to the uncertainty I think given where we stand, so we'll get something along those lines in there.

DR. CIERI: Not to beat the horse and make anymore glue, but I'm looking over, for example, for snapper and it says "review the selectivity patterns applied to the baseline assessment and the post review sensitivities of alternate selectivity patterns and determine the most appropriate selectivity pattern for use in the updated assessment." I mean, you're talking about changing your selectivity pattern in an update. When I read this, getting back to his point, this doesn't look like an update terms of reference. This looks like a benchmark. Do we want to try this again?

MR. CARMICHAEL: That's why we definitely want your feedback on that. You guys are responsible for deciding if you think it's going too far and which you're not comfortable in making some of these changes under the guise of an update. I guess you have some options before you.

You could say we think this term of reference is interesting and intriguing, but it really is the type of thing that would justify doing a benchmark; and you could do an update but you should not change this component of it because it is too significant; or, you could decide, yes, we're okay and we're willing to take that on understanding that it could be some deviations from the benchmark and we'll review it as we do every other update, and we'll decide if we're comfortable in going forward with an update which has changes in some of these parameters. It is up to you all to sort of make a call on this.

DR. CIERI: I mean for me if you're changing a selectivity pattern, if you're doing a lot of these sensitivity analyses, if you're doing all this stuff, this is a benchmark; this isn't an update. An update is strictly supposed to be you put new data in the model, you rerun the model again up through the current timeframe, and then you let it fly. In some cases, yes, you can make some minor updates.

You can change some of the ways in which you calculate some of the indices; you can do some minor tweaks with your catch-at-age matrix; you can do some of things; but when you start talking about doing selectivity, when you start talking about looking at some of these things, yes, that's bull. That ain't no update.

DR. BOREMAN: I'm not so sure I go along with that argument. Selectivity, like for red snapper, it could change from year to year in the fishery, and I think that's what part of the update is go back and look – that what it says here is look at the base selectivity pattern that was used, look at the data we have now, and is it deviating significantly from the pattern that was used in the benchmark. If it has and in some of these fisheries it probably does change from year to year, especially if it's a strong recreational fishery, I'd sure like to know about that; maybe not too much about it, but at least I'd like to be aware that is going on and what the implications are for the output.

DR. COOPER: I'm not sure this is exactly what you meant, Matt, but we'd better be doing sensitivity analyses –

DR. CIERI: Right.

DR. COOPER: – on our updates because sensitivities will change. I think I'm a little in John's camp when it comes to checking selectivity issues that is generally one equation or two could change as opposed to a whole methodology. I think it is a gray area and I'm not sure what we've done in the past and what decisions have been made as far as where it's benchmark and where it's not, but we definitely need to be looking at sensitivities regardless.

MR. CARMICHAEL: It may come to somewhat I think looking at future selectivities versus – that have occurred since the terminal year of '06 versus looking at past selectivity patterns that were applied in the benchmark, and that may be some of the difference. What we're saying is concern about changing the selectivity patterns for past data that was in the benchmark, but understanding that selectivity that is used for the future could very well be tied to whatever the new data shows.

DR. BELCHER: Well, how does everybody feel about this because it would be nice if we all had a decision as to what we felt relative to the selectivity request. Should it be part of the terms of reference; do we feel that it's exceeding the definition of an update?

MR. CARMICHAEL: Specifically the second bullet under Term of Reference 3 for red snapper.

DR. BOREMAN: I like John's clarification. If it's looking at the selectivity pattern since the benchmark assessment and see if they have changed and do some sensitivity analysis in that regard and not go back and revisit the whole selectivity pattern history of the fishery, I'd be happy with that.

DR. CIERI: I can see your point. Certainly, you don't want to be talking about changing dome shaped versus non-dome-shaped selectivity patterns. On the same token, probably the base model run should be whatever came out of that peer review. You're going to do a continuity analysis, anyway.

But if you want to explore alternate selectivity patterns within an update, that's okay as long as I guess we're all fairly clear that whatever the continuity run is probably going to be – unless there is some major hiccups in model, probably something that's going to be a little bit closer to what – definitely weighed a little heavier in an SSC decision.

MR. COLLIER: Why would the selectivity change? There is not a size limit or any other change that was put into it. That might be taken out because it shouldn't have changed.

DR. COOPER: The underlying selectivity may not have changed; our ability to estimate it may have; that with increasing data we may get a better fix on it is the only thing I'm thinking.

MR. CARMICHAEL: That's right, if there had been a regulatory change we probably would have a term of reference about focusing in on addressing it with regard to that regulatory change and how it affected it and it might translate through benchmarks. But I think in general, yes, is those things could happen without they didn't really get into whether or not they happened in this case, but then Andy makes a very good point about our abilities to estimate them could be different since we may have continued data improvement since the terminal year.

DR. CIERI: Again, just going back to my point, I understand that there is a political need and all the other happy stuff that goes along with this, but these are updates. If you turn your updates into benchmarks, you're never going to get an actual benchmark done because it can take a lot of work. It's just a general comment.

DR. BELCHER: Any further comments relative to that? John.

MR. CARMICHAEL: So in the bullet before that it states "review sensitivity analysis conducted following the SEDAR 15 review", which I think people are comfortable with that aspect; and then it follows with consider whether changes from baseline assumptions are warranted. Is the feeling of the group that changing baseline assumptions would constitute a benchmark and that part should not be part of an update?

DR. COOPER: Well, here it just says "consider whether changes from baseline assumptions are warranted". It doesn't mean enact them and rebuild the whole model. It's just look at them and say, okay, do we need a benchmark sooner than we think because our baseline assumptions seem to be further off than what we thought or whatever. Any such changes that may be proposed; I

think it is actually worded quite well that it's basically looking towards the future benchmark and in what direction it might need to go.

MR. CARMICHAEL: Everybody agrees with that perception? I appreciate that you said well worded because an awful lot of effort went into that.

MR. WAUGH: Yes, we've spent a lot of time at council meetings, committee meetings and especially public hearings trying to explain how the discard mortality rates were chosen, and I think it's worthy of having a separate bulleted item to look at all new information and to provide a detailed review of the rationale for choosing those values. They're extremely critical. If you read the data workshop report now, it's pretty lacking in the rationale.

I seem to recall something happening with the confidential data and why a lot of those papers were pulled from that SEDAR, but if you go on the SEDAR Website you can't find much backup from that data workshop. When we have that review for this update, I think it would be helpful to have copies of all the papers that were reviewed particularly for that discard mortality.

Then just two other questions; there has been a lot of effort and work looking at alternative assumptions about recruitment, and we've continued and will discuss again this issue of what is the best proxy for MSY at 30 percent or 40 percent. Are those two issues adequately covered within the terms of reference as they're drafted now?

MR. CARMICHAEL: The discard mortality is in there with the bullet. Term of Reference 2, the fourth bullet says review the discard mortality rates applied in the baseline and consider whether alternative value should be explored through a sensitivity analysis.

MR. WAUGH: That's different from the one I'm looking at that I got from sent around, so maybe there are multiple versions of the terms of reference.

MR. THEILING: There are three stocks; just make sure you're looking at red snapper at the top of the page.

DR. BELCHER: Further comments? For right now let's just keep our focus to the terms of reference for red snapper because that's what we've been on, anyway. Does anybody have any comments or feelings toward the SPR discussion? Should it be a term of reference? Matt.

DR. CIERI: So are you guys looking to re-estimate reference points?

MR. CARMICHAEL: Well, updates.

DR. CIERI: To update your existing reference points or to choose whether or not SPR 30 or SPR 40 as a proxy; in other words, to rechoose your proxy of Fmsy or MSY; is that what you guys do?

MR. CARMICHAEL: Say that again.

DR. CIERI: To basically relook at your proxies for Fmsy?

MR. CARMICHAEL: I suppose that could be part of it but I don't think that's necessarily the intent. The intent is to look at the values associated with the proxies and not to go there again because we have the proxies in place. Usually what we look at is whatever the measures that have been put in place is we look at updating the associated values.

DR. CIERI: Not actually choosing again what those values should be?

MR. CARMICHAEL: The technical value and not the conceptual.

DR. WILLIAMS: Do we in fact have a proxy in place for red snapper?

MR. CARMICHAEL: You have recommended a proxy and the council is considering the proxy. I'm trying to recall if there is one that is in place. I think there is from the previous amendments that probably is still in place technically until the council acts. Yes, because the status was 30 percent SPR and you've recommended 40 percent SPR, so Amendment 17A had action items to change that to 40 percent SPR. So, depending on what is known at that point, you'll probably have to look at 30 percent and 40 percent.

DR. WILLIAMS: Well, since you bring it up, I'll bring it up now, but it will come up tomorrow; it seems an odd thing that the council is considering an MSY proxy as a decision.

DR. COOPER: Yes, and just looking at the terms of reference, first it says calculate the 40 percent SPR ones and in addition update SEDAR 15 alternative proxies, the Fmax, F 30 percent, so I think that way we'll get whatever outputs we need, and then we can go back and talk about Erik's can of worms that just got opened.

DR. BELCHER: Further discussion points or additions or deletions that we'd like to see for the terms of reference for red snapper? Gregg.

MR. WAUGH: I read the one for discard mortality, and I can see that getting breezed right through. I really think it needs to be expanded because the existing rationale as presented is, in my opinion, lacking. I just think that needs to be expanded some so that we look at all new information, provide a rigorous review of what discard mortality rates are used.

MR. COLLIER: I thought in the old one it was pretty rigorous. I mean, there were at least 15 papers cited in it. How much more do you want of a literature review?

MR. WAUGH: Well, yes, there are a bunch of reference, but, again, that data workshop report should stand on its own; and if you take a non-scientist and read them the one page in that document that includes those 15 references, it doesn't do much to explain how any of those values were derived and why the group recommended what they recommended. I'm not saying it doesn't have the appropriate literature cited. I'm just saying if you read that one page, and

that's all that covers this important topic is one page, it just doesn't give you enough meat to convince anybody as to why those values were chosen.

MR. CARMICHAEL: One thought I had on this; there are two data-related issues that are critical to this assessment. Obviously, they can affect the sensitivity and they certainly affect how people feel about the reliability of the results and the uncertainties, and that's the discard mortality rates and the historical catch data.

One thought I had was perhaps we can convene a workgroup to try and address these issues. Between the first of the year and June when the modeling is going to get started, if we could get a couple of SSC members – and I don't if the Science Center is tapped beyond being tapped to try and do any of this kind of stuff, but it might certainly help to get these issues addressed up front before we get into the modeling, because otherwise they have the possibility to slow everything else down.

These could be talked about because the information that you need is all there. We don't need to wait for new data which would become available in June. Maybe if some SSC members are interested in focusing in on these, special topical things, and let's try to get this settled. I think perhaps two groups, one dealing with the historical catch estimates and how those are treated and how those are modeled and the reliability of those with regard to what we see now.

It is addressed in the report, but it's one of those things that had led to a lot of confusion, so we'd like some clarification and clarity and maybe a little more explanation of sort of what those mean. Then the other being the discard mortality with sort of the same approach to try and get us a little bit better documentation on those decisions.

DR. COOPER: Well, it sounds like the problem is a communication issue. It's not a scientific issue. None of the people who reviewed the document had problems with it. It's all about how do you translate those 15 citations in that one page into something, as was said, that the people can understand. I'm not sure whose role that is. I definitely don't want to start writing stock assessments the way the public can read, because then we're going to have a 7,000 page document as we try and explain everything.

But how do you translate these documents for public consumption is a big issue, and I'm not sure whose role that is. It sounds like that is what we're talking about. If the SSC's, fine; it it's staff, fine; if it's the workshop, then that needs to be clearly stated. It doesn't like there are questions of the science; it's how do we convey what was said in these reports so that the general public can understand it.

MR. CARMICHAEL: Somewhat but I think it's a little more a lack of anything said from which to convey and translate, and that very little is said about the information that was digested, so what is needed is some more said and some more acknowledgment of the uncertainties in the different studies and how the different multiple studies are kind of brought together. That's really what is needed. So, are people willing to participate in some topical webinars, primarily,

and e-mail streams related to these to try and get a little resolution to a couple of these issues prior to the modeling beginning?

DR. CIERI: Yes, I'll jump in. Having done some of the stuff with the SPRM in river herring and so forth being a bycatch and estimation of discard mortality, that type of stuff, I'd be cool with that.

DR. BUCKEL: You can add me to that one, the discards.

MR. COLLIER: You can add me to the discard as well, and probably Karen Burns would be a good one to add seeing that is who we usually cite.

MR. CARMICHAEL: Anybody want to get into the historic data? Maybe we can ask some folks who tend to work in the recreational data sets to try and help us out some on that. Maybe we can get somebody from back in that era pulled out of the woodwork to sit in.

MR. THIELING: If we're finished that list, going back to what Andy Cooper said about whose job it is to follow through and make sure that these things are properly documented, the concept for these updates is that we want to have the SSC members named early and that they would follow – preferably one would follow a stock all the way through the process, right on up until the SSC review requirement comes forward, and that person has served all along as a stock leader.

We've got three stocks in this case; and as I mentioned before, we'd like to have a chairman selected. You've got a total of four; so if it's your interest a this point, you could consider or assign a stock to a member or a member to a stock and maybe a chair.

MR. CARMICHAEL: Our SSC Chair could chair the workshop where we go through the three of them, perhaps.

DR. BELCHER: I just need to see the timing, but it's not an impossibility that couldn't happen. Any further discussion relative to the terms of reference for red snapper? Again, any points of clarification, edits, deletions; is everybody happy with the terms of reference?

MR. CARMICHAEL: With the discussions we've just had; so if you consent to their moving forward to the council, we'll make some modifications to them when they're presented to the council later this week for further discussion.

DR. REICHERT: I don't this goes back to the terms of reference, but I'm not sure if Andy's question was completely answered in terms of responsibility of the translation, because mentioned there are two issues. One was documenting how the decisions were made, but then the translation step I don't think was addressed; correct?

MR. CARMICHAEL: Well, the translation is primarily the responsibility of the council and agency staff. We're not having trouble with the translation; what we're having trouble with is

the lack of information which needs to be translated. There are only a few sentences that deal with the 90 percent discard mortality.

There is kind of a review of the different studies that are stated, and there is basically two sentences that say 90 percent because they operate in deeper water and they handle fish longer, but that is kind of scant. What is lacking there is saying, well, exactly what aspects of all of these studies contribute to that.

This is an update and those questions are still going to be there; so in the interest of moving this assessment along and not having it hung up because of further questions about this discard mortality, can we get a group to focus in on that and say, okay, here is what is really there, here is what was discussed, here is what we think. We're not asking them to overturn anything; we're asking them to clarify and look at the studies and give us something a little more involved than what we had, something that will stand up to better scrutiny.

DR. COOPER: I'm curious; are the minutes from the meetings; are they dictated like ours or do we not have access to those? I seem to remember back in the day we had verbatim minutes, and so I assume we don't have those; and that's really the problem is we have to recreate the discussions that went into that decision?

MR. CARMICHAEL: Well, we don't have transcribed minutes. We do have meeting recordings. From the data workshop and the assessment workshops, when the group was all together talking, some of this would have been talked about in workgroups which wouldn't be covered through the recordings, because you've got five of them running simultaneously.

DR. BOREMAN: Just a comment, looking at these terms of reference, we keep using the expressions like "characterize uncertainty", but eventually, as we're trying to do in the Mid-Atlantic and probably the New England, too, trying to come up with some standardized way of characterizing uncertainty that everybody is happy with, including the members of the SSC.

This workshop at the end of February on uncertainty, I'd like to see that as one of the goals of that workshop. For regular stock assessments, we've come up with a way of characterizing biological reference points so that the members of the council can understand the characterizations. If we can do the same for uncertainty, it probably would save a lot of work in the long run because there would be a collective understanding of what the outputs from these workshops should be in terms of how exactly uncertainty is characterized.

MR. CARMICHAEL: That is absolutely the goal, yes, to come up with some standardized ways of doing this and accepted techniques for what that means when we say characterize uncertainty. I think it would be good if you can make it to that to bring in some of your discussions up there, help cross-fertilize a little bit.

DR. BELCHER: Ben Hartig would like to talk to us. He has got a comment relative to discard mortalities. He is one of the council members for those of you who don't know who he is.

MR. HARTIG: Just to clear it up a little bit; I've been working pretty hard on this for the last two months. I've been trying to get workshops together on this, but one of the things is it is more than just explanation. There are wrong assumptions in the data workshop, especially about the commercial fishery.

In the data workshop they compared the commercial fishery to that in the Gulf. It operates a lot differently, a lot less hooks, a lot less handling time. Things like that need to be brought into this conversation you're going to have that's specific to red snapper. It is more than just the translation.

MR. WAUGH: Are we dealing with the spiny lobster terms of reference now, also?

DR. BELCHER: We're getting to that. We've got two others and then we'll get to spiny lobster. Is there any further discussion relative to the red snapper TORs? Okay, seeing none, everybody is happy with what we've proposed as far as the potential changes and all so that can go on further discussion? Okay, looking at black sea bass TORs nest, we'll open that up for discussion.

MR. CARMICHAEL: One thing I'll point is they all have a term of reference about evaluating future stock status and rebuilding progress. The ones for black sea bass are quite different from the ones for snowy grouper because they're both customized to the management plan that the council currently has in place, because these are updates and have certain criteria. Black sea bass has a rebuilding period ending in 2016.

DR. COOPER: So, the bullet says provide a probability analysis for the status quo and updated rebuilding schedules; that's essentially give us a range of TACs and the probability of rebuilding by 2016?

MR. CARMICHAEL: Yes, that's what it is intended to mean. Does that fill that need, Erik, or should we reword that a little bit? Provide probability analysis for the status quo and updated rebuilding schedules; does that give you enough to make it clear what needs to be done?

DR. BELCHER: Everybody comfortable with what is in the terms of reference for this species, then? Erik.

DR. WILLIAMS: I'm just curious why number eight is in there? That's not a standard term of reference for an update? That could be for a benchmark, and even a benchmark I'd wonder why that's in there.

MR. CARMICHAEL: It was one that was in there before, and it's one that's been around some. It seems to be something that tends to get beyond what actually gets accomplished.

DR. WILLIAMS: I would recommend removing it because, one, it's too vague because it doesn't say what you want to optimize for in your sampling intensity, which is part of that equation. It's a huge amount of work sometimes to do that.

DR. BELCHER: Everyone in agreement with removing Term of Reference 8? Okay, any other comments? Gregg.

MR. WAUGH: Erik, that was number eight dealing with sampling intensity? How then are we going to link the needs for what target level of sampling to get input into ACCSP? I don't know if that's clear enough. I'm unclear as to what our sampling plan is now for getting size-and-age data. As I understand it, SEDAR was going to feed into that process, so that we had a clear indication of what sampling intensity was needed. If we take this out, then where is that input going to be developed?

DR. WILLIAMS: That's a good question, but I don't think it belongs in an update assessment. It just seems to be the worse place to put it. I don't know if a benchmark assessment is necessarily the best place to put it either. I mean you're talking about sampling designs in general, and that should be addressed probably outside of the SEDAR process.

Frankly, it should be a part of the data collection system. I understand you can use the stock assessment models to inform on what potential sample sizes are going to be, but, again, I don't think that should be part of the assessment process itself because that's sort of an after artifact that once you have a completed model you can do these kinds of calculations, but really to do it effectively you're talking a lot simulation runs and trying to decide what you're going to optimize for is a tough decision.

MR. THEILING: I'll just point out that same term is in red snapper and coming up in sea bass, also. If it's to be removed, you may reconsider that for red snapper.

DR. BELCHER: So what is the pleasure of the group; are we in consensus that as far as I guess even for the next couple of species that we have to discuss, that term of reference relative to sampling intensity should be stricken from the terms of reference?

DR. COOPER: Well, here is a question. If this would be an unhappy medium; do we want the assessment to discuss the sampling intensity relative to the quality of number seven, quality of individual lengths, because we do talk about how sometimes we use it and sometimes we don't, and least get it out on the table as to whether our current sampling intensity is enough.

Is that a valid thing, without going into actually powering it up, but we make those decisions as to whether of not we use certain years' length samples and things like that, so just to add clarity as to whether or not we've got enough for this to add further description on why things are included or not; would that be useful?

DR. CIERI: No, that is actually a really good idea. I think a lot of those things can actually be addressed in your research recommendations. Seriously, if your data sucks, that comes out in the data workshop, and then somebody actually goes through and gives that type of idea in the research recommendations to examine current strategies for sample size. I think that's one of the reasons why those terms of reference and that prioritized terms of reference is really that important is that it gives you an idea of what you need to do for the next assessment.

DR. BOREMAN: This is important in terms – again, going back to scientific uncertainty, this is a major source of scientific uncertainty are the inadequate sample sizes for age composition and catch-at-age matrices and so on. Maybe just to follow up with Andy's comment is just put a term of reference in there about how the current sampling intensity adds to the scientific uncertainty and what may be helpful to reduce the scientific uncertainty in the future.

DR. CIERI: Maybe a term of reference just on data needs; highlight data needs and basically express those data needs in either research recommendations or highlight the data deficiencies within this assessment. But, again, this seems like it's a whole lot for – it says a lot for an update. This seems to be more of a benchmark.

MR. CARMICHAEL: Yes, I'm thinking something along the lines about tying back in data needs and sampling issues into the discussion of uncertainty, really. It's what we're getting down to, which necessarily have to be all that onerous, but it could help to just get down what you guys take for granted and try a term of reference to make sure that gets put in as words that this assessment doesn't have a survey, so obviously there is a lot more uncertainty in it or we had very small samples of ages or what have you or from this area at that time; or something that just gets some of that internal thinking and discussion onto paper. I think we can handle something like that.

MR. CHESTER: I think a lot of that is captured in Terms of Reference Number 10 under red snapper where it talks in research recommendations of providing details regarding sampling design, sampling strata and sampling intensity. I think we're covered at least with that concept.

DR. BELCHER: Then my understanding would be you feel – and this again coming from Alex and I'm just getting everybody's general feeling on this – is that number ten pretty much encapsulates that and we can still strike number eight across the board? Erik.

DR. WILLIAMS: Well, except this is really what is really frustrating about this is why these terms of reference are so different for these three species. I mean, why isn't number ten consistent in all of them? I don't think it is. This is extremely frustrating to review. There are certain terms of reference that should be standard and should be in each of these. I can understand having some of it be species specific when you start talking about actual values, but otherwise this is a poorly written terms of reference.

MR. CARMICHAEL: Actually, they're more consistent I think than seems to be being perceived. Number ten that Carolyn is referring to is actually number nine. There is a slight numbering difference in red snapper because of some of the issues that would go in there, apparently, but its number nine in the one for black sea bass and I think the one for snowy grouper. I think the language is almost identical other than it might refer to a different SEDAR workshop that did the original benchmark, but I think it's very consistent with regard tot that.

DR. BOREMAN: Yes, number ten will almost get us there. Again, it's research recommendations but there is no discussion of how the current sampling intensity adds to the scientific uncertainty of the assessment.

MR. CARMICHAEL: The explanation is even simpler. There is no number seven in red snapper. That would be why everything is off a number as you get to the back end of the terms of reference. I think that one that deals with basically the review and the research recommendations and talking about uncertainties, maybe we'll get something in there to really focus in on this sampling data needs and its role in uncertainty to keep it a little simpler.

DR. BELCHER: Again, to clarify we want to drop the generic term of reference asking about sampling intensity specifically across all three species – actually four if it's in spiny lobster as well, I would assume – and keep the one that talks about management recommendations and issues that contribute to the uncertainty relative to the assessment; correct?

So we're dropping the one with sampling intensity but keeping the one that talks about relative to characterization of uncertainty and research recommendations? Any other discussion on specifics of black sea bass? Is everybody behind the terms of reference for black sea bass? Okay, nobody's dissent, we will go ahead and move to snowy.

Snowy grouper terms of reference, any edits, deletions, questions. Everybody happy with those, then? Okay, so moving on, then the terms of reference for snowy are as written with those couple of edits carried over from all three.

MR. CARMICHAEL: One last comment before you go on to spiny, also in this package are the research recommendations of the previous SEDARs extracted out for your convenience with the idea being that especially those of you at universities and state labs and whatnot, if you know of some work that has been going on in your area on any of these stocks that might address some of these terms of reference, please let know.

We'd like to get the documentation and have it available for anybody. It's not because we're expecting you to act on these or anything else. We're hoping maybe it will be a little trigger and you might see something there that makes you think, oh, yes, somebody is working on that. It's kind of an open call. A lot of you have received it from Dale already about, hey, give him a heads up about what is going on.

We just want to make sure we get it to you – because we have all the states and stuff represented – and various university researchers who might know some of this has been done; so just give us a heads up, take some time to think about it maybe on your trip home as to what research might be going on and let us know. With that, that's all I have on these. Dale, are you good on these three?

MR. THEILING: Yes, sir, unless you want to assign stock leaders.

DR. BOREMAN: Before we leave again the black sea bass and the grouper, I just want to make sure that my comment about some comments in there about the unique life history and how that contributes to the uncertainty. I think we should make sure that is in there.

DR. BELCHER: Is the group in support, then, relative to John's suggestion from earlier on about including a discussion or inclusion on life history traits of the species, the unique life history traits and how they affect the uncertainty relative to these assessments? Okay, so that will be added in as a term of reference.

MR. THIELING: Which two stocks again or did you say all three?

DR. BELCHER: Snowy and black sea bass. The last thing relative to these three, any specific comments relative to the schedule? Okay, seeing none, then with this we're going to talk about spiny lobster.

MR. WAUGH: The terms that deal with doing the projections I think are sort of written based on the determinations from the assessment; no overfishing and not overfished. I think we just have to have some caveat in there that if there is overfishing or it is overfished, then we need the standard range of projections. It's number ten.

DR. BELCHER: Okay, comments from the group relative to the terms of reference for spiny lobster?

DR. COOPER: Just a question; Bullet Point 4 is extremely specific on which sensitivity runs to include; are those all inclusive of the ones that were done in the last one or do we just want to make a generic – you know, do the sensitivity runs that have been done in the past? I'm not familiar with the former assessment, but there is a lot more detail on what to look at in this one than our other three terms of reference. I didn't know if there was a reason for it.

MR. THEILING: Those are the ones that were run. They should not be exclusive, so we probably want to modify the wording.

MR. CHESTER: Just a question; for this species, should we also ask for a probability analysis, P-star type analysis and just become a regular part of SEDARs if it's possible?

MR. CARMICHAEL: I think that we should. Yes, we should add that in there.

DR. BELCHER: Other comments? Is the group supportive, then, of making sure that the clarification is that those sensitivities are basically at a minimum? Those are the last ones that were run during the last assessment, so at a minimum those should be done, and they need to add in for the P-star the probability analysis. Any other things that folks feel need to be added or does that pretty much bring the terms of reference up to where we think they should be? I guess that means everybody thinks that we're good with that those of reference as well. Andy.

DR. COOPER: Just to maybe open a can of worms, with a P-star analyses, if it hasn't been done before, how much is that a new model or is it pretty straightforward to take what is here and do a P-star and it doesn't require, again, the whole thing of – is a P-star analysis part of what is a benchmark or can we simply incorporate a P-star analysis with an update without knowing the full extent of what it takes to determine something that hasn't had a P-star into a P-star analysis?

DR. CIERI: I don't what some of the problems with some of these species are, but, for example, if you've got a retrospective analysis, even a small retrospective change you've got a problem when it comes to start doing some of those projections. It's a lot of work.

DR. WILLIAMS: The amount of work depends – I mean, really what we're talking about is characterizing uncertainty in a reasonable fashion. We've done it for some of these, but a lot more work needs to be done. I don't know for like spiny lobster if any characterization of uncertainty was done in that last assessment or not. We don't handle that one.

DR. COOPER: Well, especially to that point, since you guys aren't going to be doing it, is whoever is doing it capable of doing a P-star analysis and is that something that is going to be creating new machinery that needs to be considered a benchmark?

DR. BARBIERI: For the record, Luis Barbieri, Florida Fish and Wildlife Conservation Commission. : Yes, we do have the capabilities for conducting the P-star analysis. We have been in contact with Kyle Shertzer and others at the Beaufort Lab to actually get the code and start adapting it to some of the species that we are participating in assessments for now.

Now, spiny lobster is a complicate issue, and I don't know to what extent we're going to able to actually develop a P-star type analysis. That is yet to be determined. You're trying to decide what to do in terms of the terms of reference?

MR. CARMICHAEL: Yes, they recommended adding a term of reference to do a P-star analysis for spiny lobster. The concern was is that sort of triggering enough extra work that it might be beyond an update. I think if you guys are working with Kyle and those guys to get the process in there, I don't consider that to be bringing in new information that triggers a benchmark. It is kind of a new way of presenting it. It doesn't make me feel like it triggers a benchmark, but I tend to simplify things.

DR. COOPER: Well, my gut instinct if the answer isn't why, yes, of course, we can do it, then it's not just an update; that there are scientific questions on how we're supposed to go about doing this. I'd much prefer to get a P-star because it can be managed much better that way, but it is borderline saying we're developing new methods, which to me is part of a benchmark and not an update. This is definitely gray.

I would be happy to fall on either side of it, but I think it's something that we should discuss because this is going to happen in the future as we have more and more assessments coming up that haven't had P-stars; can we do this regularly as part of an update when it hasn't been done before?

DR. WILLIAMS: What if we just put a terms of reference that said something to the effect that time permitting or resource permitting to do that sort of analysis; that it needs to be looked at because it is going to be I think species-specific as to how much workload is involved with it. Yes, I agree with Andy, in some cases it could be an extreme addition of work to some of these assessments to fully characterize the uncertainty and then do the P-star analysis on top of that.

MR. CHESTER: I agree with that. What makes me flop on the side trying to do one if we can is just because of the responsibility of getting ABCs and the fact that our ABC control rule requires that. If not, it's just going to be another species that we don't know what to do about.

MR. CARMICHAEL: If you didn't get the P-star from the update; would the SSC be able to give ABCs? We do need to get whatever is needed to give ABCs. Given your current control rule, could you give ABCs?

DR. COOPER: As I understand it, what we need for our ABC control rule is an estimate of OFL and uncertainty. The P-star is kind of the extreme preference of what we really, really want, but if we something less I believe it's in our control rule to figure out how to buffer. I think we then just buffer appropriately even if we don't have a full P-star. I could be wrong on that.

MR. CARMICHAEL: So then the sort of basic term of reference which just calls for a probability analysis – it doesn't really necessarily say P-star – somewhat falls into that. That's how those were crafted originally. The language of that term of reference was not specifically including P-star. It was just saying some type of probability analysis for supporting the ABCs. Maybe something generic like that would allow them to do what seems to be appropriate given time and the outputs of the particular models.

DR. COOPER: If we look at number seven and number nine, we've got update measures of uncertainty and provide representative measures of precision for stock parameter estimates, and then we also say – well, eight is stock status, SFA parameters; and nine is OFL and a range of ABCs. As long as we make sure that the point seven trickles into point eight and trickles into point nine, whether it's a formal P-star or not, we can maybe throw in some language and examine a fully operational analysis or something like that.

DR. BARBIERI: Besides, my understanding is that the terms of reference represent the minimum to be produced by the assessment. There is nothing that says that formally we cannot actually produce the P-star in addition to whatever is defined in the terms of reference within the extent possible. That would give us the flexibility not to have to push this too much into murky waters but still give us the flexibility to have it there is it's something doable.

MR. CARMICHAEL: You can always do extra work, absolutely.

DR. BELCHER: Relative to the terms of reference, then, what are we asking relative to – are we asking for another additional term of reference or we asking for it to, as Luis said, be in addition to? I mean, what exactly are asking in that situation? Originally we were asking for a specific term of reference to add in for a P-star analysis. Are we still asking for that? Erik.

DR. WILLIAMS: Well, I think Andy points out that really this asks for everything except specifically P-star, so what we need to do is just put in some language that time permitting or resource permitting – that's what we're after, but if you can't what is here will provide what we need, which is a full characterization of the uncertainty and probability about the stock status outcomes and that sort of thing.

DR. BOREMAN: I'm looking at the language in number nine. It said specify OFL and may recommend a range of ABC. If you're looking at recommending a range of ABC, presumably you will be picking some P-star values associated with that; so maybe just insert something after ABC to the effect of "and if possible the associated P-star value" or some language like that.

DR. BELCHER: So we're recommending to that language, then, that a probability-based approach be used – possibly, okay. John has got the language on that, but everybody is okay with adding that language that basically we will get a probability-based approach to that. Okay, any further edits or comments on the terms of reference? Okay, seeing none, then we will leave the terms of reference with the edits as suggested. We will go ahead and take break at this point and come back we'll start with the FMP Updates?

MR. CARMICHAEL: Do you want the updates? The updates aren't going to long; do you want to just do these. This is really just an FYI to bring you guys up to speed. Well, the FMP updates was to bring you up to speed on what has happened on the amendments that are underway. We have Snapper Grouper 15B which was approved by the council and the final rule published November 16, 2009, so fairly recently the final rule published on that. You all have worked on that over quite a few years and now you know that is in and the final rule is done.

Snapper Grouper 16, the final rule published soon after your June meeting, in June of 2009, so that is in. You've probably noticed that are a lot of regulatory changes coming up for a lot of these snapper grouper species managed by the council. The Fishery Ecosystem Plan went forward and it was submitted as a source document in support of the Comprehensive Ecosystem-Based Amendment, and that went in October.

Those are big documents and they're available for a download on the website for you guys to review, but you've seen that plan a number of times as well. Then the Ecosystem-Based Amendment, that was approved for submission to the Secretary in September and it is currently under review with them now. Of course, once that is approved, then we will send that to you and we'll send you the notices and such that list what exactly was approved on that.

That does quite a bit ecosystem and habitat and coral-related things that are going on in there. I mean there a lot of things about what was going on with these, and these are really just informational to let you guys know where these things stand and what has happened. I'll see if Gregg has anymore to add on any of these.

MR. WAUGH: Just to mention that for vermilion, the commercial quota – you know, we had that split season. When it was implemented, it was implemented effective July 29th, which was after the first six-month period. If you look at the landings for that six-month period, we went over by 22 percent; so landings were about 384,000 versus 316,000 pounds. The second quota period we were over by 19 percent. The quota was 302 and a half thousand pounds and landings are 359,800 pounds,

MR. CARMICHAEL: That's all we have on those and you are up to date.

DR. BELCHER: Okay, we'll go ahead and take a break.

DR. BELCHER: Let's go ahead and get started again. Okay, Gregg is going to give us an introduction to what is going on with king mackerel.

MR. WAUGH: This is being worked on jointly with the South Atlantic and the Gulf. The Gulf Council is lead. For those of you that have been on the SSC for a while, you remember the talk of separate FMPs. That has been resolved and we're going forward using the existing boundary.

When we get to cobia, there is an action item in there to split cobia into two management groups, so that's something that we'd like you to weigh in on at some point. There is an options open in your materials. There are a couple of them. One was what the Gulf took out to public hearings. The one I'm working on is under the mackerel tab. It's Attachment 3, the decision document. This is the one we've used and what we looking for in terms of input from you is guidance on the MSY, the MFMT and the minimum stock size threshold, that information for king mackerel, Spanish mackerel, cobia, and then the mixing zone, how we separate those management groups.

The timeline for this, we don't have any specific timing laid out. The Gulf Council completed their scoping. We have completed ours, and we will be working with them. The deadline for having this completed is during the 2011 fishing year, so you will have another opportunity to look at this. Our suggestion to John was that you just way in on the MSY and the OFL parameters now, and, of course, with cobia that one item.

For king mackerel, it's on Page 8 of that decision document, and I've got it projected up on the screen. These values come right out of the results from the assessment. The current MSY for the Atlantic Migratory Group is 10.4 million pounds. Based on the SEDAR 16 assessment, the MSY would be revised down to 8.964 million pounds.

The council has determined that the value for MFMT, which we're using as the OFL, is the value of the Fmsy or proxy from the most recent stock assessment. Currently the MFMT is Fmsy, which is using a proxy of F 30 percent SPR, but no poundage is estimated. Based on the SEDAR 16 assessment, if you use the value that the SEDAR 16 assessment had for the 30 percent SPR proxy is 0.256.

We would convert that to the yield based on that fishing mortality rate. The council has determined that the minimum stock size threshold is based that formula. Currently in the FMP it is 0.85 times Bmsy with no poundage estimated. Based on the SEDAR stock assessment, the MSST is 1,827 billion hydrated eggs. Those are reference values for king mackerel.

The Spanish mackerel reference values are on Page 16 of that document. For Spanish mackerel currently the MSY is 10.4 million. From SEDAR 17 it is 11.461 million pounds. The MFMT again is the 30 percent SPR proxy. Based on the SEDAR assessment Fmsy is 0.371. The MSST is 8,085 metric tons. There is a table in there that shows these values for each of those.

Then for cobia, which is the remaining species that we're dealing with, we are going to have to separate the existing – well, right now it's managed as one stock. We would split into two migratory groups, and we're looking at doing that based on the Miami-Dade/Monroe County Line or at the council boundary.

That certainly is a decision that can be made in the future, but we were looking for your guidance on the reference points. Here we don't have any information. There has not been a stock assessment done on the Atlantic Group. Erik did some preliminary work on what could be considered the Gulf Group based on the Miami-Dade/Monroe County Line. I guess that would fall over into your data-poor determinations for the Atlantic component. That's just a quick overview of the important point aspects for you. As the councils develop this amendment, it will come back to you at a future meeting for you to look at.

DR. BELCHER: Thanks, Gregg, and I apologize to folks. I overlooked this when I was putting it together, and of part of it was I was looking at the agenda and the roadmap simultaneously; and if you've noticed, they're a little bit out of sync because the original roadmap was done on a previous draft agenda. Does anybody want to start with the discussion relative to this? Is everyone in agreement with the numbers that are there? That was based on guidance we had given last December. We hadn't given those specific numbers but we had referenced the table from which they come.

Relative to cobia and those numbers that they have asked for the Atlantic stock cobia, anybody have any discussion? What are we recommending in lieu of stock assessments? If you have specifics relative to what we have for the other two, I wasn't seeing any comments. That's why I just kind of moved down the list.

DR. COOPER: General comments – and this is just probably nit-picky, but Fmsy does not equal F 30 percent. It's approximated. So just for a notation, I don't know if that will just confuse the heck out of everyone who is reading it, but just as a point of reference they're not equal. We're approximating and so when you start doing the equal signs, you might want to do a little approximation sign or take out the equal and say approximated by.

In looking at the optimal yield like 4.1.1.2 on Page 10, I don't really see – I mean, you list four options for OY yet I don't see how anyone is going to be able to compare the no option with those other options because not only is there another number of the F 40 percent SPR, but there is no poundage, and so you're asking people to basically say, okay, do I have concept or choose these numbers, and that is just going to create some disjunct there, so if we can get numbers for them, that would probably be best.

MR. WAUGH: If I could just reply to that, this has been debated at the team level because what no action is supposed to state is what is in place now. When that was put in place, there was no estimated value, so initially we were doing these options with no value in there. More recently the teams have decided to put a value in, so we're going back and calculating based on what we know now what would be the yield at 40 percent, and so that will be added.

DR. BELCHER: Further comments or discussion? John said the best thing we can do at this point I guess is proceed. Again, stay focused on species one at a time starting with king mackerel, coming up with the ABC value and the recommended ABC.

DR. BARBIERI: Well, this went through fairly recently, right, Gregg, through the SEDAR process, and I'm just trying to kind of reframe my understanding here. We have the MSY estimates for proxies as outputs of those assessments, but a recommendation on the actual ABCs have not been yet made; is that correct?

MR. WAUGH: Well, if you look at what is projected now is Table 3, and what we have drafted based on the output from the assessment are some alternatives looking at – for at least the council's discussion is looking at the projections. Table 3 shows the projections. What we are proposing is to average those over the 2011 through 2016 time period, and the range is the yield at 65 percent of 30 percent SPR up to the yield at 85 percent of SPR, to use that as an ABC range. If you do that, that results in an ABC range of 7.426 million pounds up to 8.356 million pounds. That is how we've given the committee and council some indication of what a likely ABC range could be, but Table 3 shows those projections and we are offering this for your consideration as you deliberate on what the recommended ABC should be.

DR. WILLIAMS: So how does this species fit into our ABC control rule?

DR. BELCHER: How does it fit?

DR. WILLIAMS: Well, the way I see it is there is no probability-based analysis or characterization of uncertainty here, so we don't have a mechanism yet for addressing those kinds of species.

MR. CARMICHAEL: There was a probability analysis that provides the probability of overfishing for a range of catches provided in the assessment. It was in response to requests from the AW and RW so they did that. You do have the Atlantic Unit and Gulf Unit by year, starting in '08 a range of catches from six to fourteen million pounds, and it shows the probability of overfishing occurring.

Now, they looked at the base model and they had what call in this "the states of nature" chosen by the review panel that reflects the uncertainty. Now, I don't actually recall which state of nature this group chose. I believe you picked as a base model as they had used to form your recommendations.

For example, it says if we look at 2010 landing 8.5 million pounds, this gives a 0.27 chance of overfishing occurring I believe is what the value shows, because that decreases that overtime and increases for higher levels, and it says it's 10 million pounds at the 0.54 probability of overfishing occurring.

This is from the king mackerel assessment, so I presume this could be used. If you went through the probability analysis control rule, if you went through the control rule and picked your critical

level for king mackerel, then perhaps you could use this analysis to pick the actual ABC. I guess you'd have to comment somewhat on this approach of using one value that is averaged across that whole suite of years.

DR. COOPER: Okay, once again I'm a little confused. I'm not sure which document or table you're referring to on those projections. The whole point of our control rule is how do we buffer given different levels of uncertainty; and so without actually seeing whatever that model was that they used to make these projections, once you incorporate the uncertainty that's underlying it, those projections may be way off compared to what – again, I can't remember what those projection models were, but the way we're buffering based on different levels in the assessment, et cetera, et cetera, et cetera, I'd be worried about – without fully looking t it – accepting those probabilities as the actual probabilities that are comparable to our control rule approaches. Maybe I just need to be educated on what that model was.

MR. CARMICHAEL: I don' know; it was available when you looked at the assessment a year ago, so I understand when we don't quite remember what all was in there. This information was in there and it was reviewed in response to a review panel request. I do remember there being a talk during the discussion of that assessment about whether or not there was a probability-based approach – probability of overfishing-based approach incorporated in the assessment as was in the others and they replied that there was. This was the approach that they had used.

So then I guess it's up to the SSC to put what you know about king mackerel through the control rule and see what the critical value is and if you want to take the values of the associated yield that match your values for each year off this table for your ABCs, or how much you want to dig into this actual method that they used.

DR. BARBIERI: I was just going to say that here – I mean, our control rule, the way it stands now does accommodate for low or no real sensitivities or uncertainty evaluations. It just increases the buffer. If uncertainty is poorly characterized, of course, what are we going to do in terms of working the P-star? That will be the difficult part. But if we can get the probabilities of overfishing, even though it's not P-star, we might be able to work something out.

DR. WILLIAMS: Well, this gets back to we're starting in a new system and I hope we get off to a start on the right foot. What is being put in front of us right now in my opinion is totally inadequate to determine an ABC, and that's the issue at hand. Maybe we can piece it together, but should we is the question, and I don't think we should. We need to do this right. This is a powerful decision that is being put in our hands, and I don't want to do it in an ad hoc fashion.

DR. COOPER: Well, the potential proposal is for the ABC; just copy the text from 4.1.3 on the OFL, which is the Scientific and Statistical Committee will specify an OFL level, leave it at that and not give numbers. It's the same issue. If we can't specify an OFL, then how are we going to specify an ABC?

I agree with Erik that – I mean, this table as it stands for the ABCs, I have problems with that for a number of reasons; the main one being all those F levels are Foy. We know ABCs shouldn't

equal OY. Okay, in general OY is to be well below ABC. And to even put these out as potentials is dangerous. Then, yes, as Erik said, trying to piecemeal this together and cram it through our control rule, which I've think we've approved but has not been approved, I think we might be getting ahead of ourselves again.

DR. BELCHER: Further comments? What does the group feel, then, as far as our advice?

MR. WAUGH: You've got a SEDAR assessment; can you all concur with the MSY values and can you specify the OFL?

MR. CARMICHAEL: Basically, that is what was done in last December was you all accepted the assessment and recommended using it for the criteria, so we're asking now for the next step to go into ABC from that. That's where I think this table was intended to come in, so then the question becomes how does this fit into the water under the bridge now that you have your control rule that hasn't been formally adopted by the council.

Do you follow that policy for setting your ABC on this stock or do you use some other approach for setting ABC for this particular amendment of mackerel. What is up on the screen now is the heading from the table that they put together to accomplish the probability side of things, which may or may not equate equivalently to the P-star analysis that was done for other stocks.

I think if you don't think, say, this table is appropriate for ABC, then, yes, let's get that on the table and get some request in so that the appropriate analysis can be done for you to give ABC, probability based, and figure out how do we turn; do we run it through the control rule? The preferred, Gregg, 8.8 million pounds is one of the options that is in there from the table, if I'm recalling right without looking back. The value that is averaged over the range of projected years; isn't that the ABC is the average of those years of projections?

MR. WAUGH: That table; the average of yield at F 30 percent SPR from 2011 to 2016 is 8.836. The average of that range, we were presenting the range from 65 percent of 30 percent SPR up to 85, and that range was 7.426 to 8.356.

MR. CARMICHAEL: So if we were to look at, say, 2010 off this table, accepting it at face value, it says 8.5 is about a 27 percent chance of overfishing occurring for the base run and smaller levels for the two sensitivity runs; based on this presentation and not necessarily knowing how this fully equates to the P-stars that you guys are more familiar with.

DR. COOPER: Basically the way our control rule works is we start with the OFL and some measure of uncertainty and ABC of OFL is a 50 percent probability of overfishing and then we buffer based on going through our control rule – well, it looks like we may have the numbers if we went through our control rule to figure out what that buffer that should be, I think.

Whether or not we can actually go through the control rule and do it and whether that number is on this table; you know, heaven forbid we come out with a number that is 20 percent or 30

percent, but I think we might be able to get there if we go through the control rule, assuming we're comfortable doing that.

MR. CARMICHAEL: That is what I see as two questions. One, would you accept this for purposes of inferring poundage from your percentage? The second question is if you were willing to use this table for establishing ABC in poundage from the critical percentage point, the probability of overfishing level, then are you ready to run king mackerel through the criteria within your ABC control rule?

DR. COOPER: Has anyone gone through and done the PSA analysis for king mackerel and we've got the values there?

DR. BELCHER: The Gulf has the numbers; I just pulled them off their website for king, Spanish and cobia. The MRAG numbers do exist under the Gulf report.

DR. COOPER: Do the Gulf numbers apply to the South Atlantic given they are fisheries specific in some cases?

DR. BELCHER: My understanding was that there are certain species that – because they straddle a lot of it because it's more life history, they've gone ahead and basically – certain species that don't appear in the South Atlantic have appeared in the Gulf because they feel that they're shared characteristics. It's not on our list but it refers you back to the Gulf one.

DR. COOPER: Well, if we're thinking about going there, then we also have to accept the implication that we're going to be able to pick OFL from that table; i.e., approximate where that 50 percent is. If we're not willing to do that, then we shouldn't be willing to go to the ABC, right, because the OFL is where the overfishing probability is at 50 percent. Well, if we can get ABC from here, that implies that you can get OFL from there, and so we'd better be comfortable doing that if think this 50 percent is – you know, even though 50 percent isn't actually on that table. Again, we wouldn't want to be doing one thing and then saying, oh, but we can't do another if we're supposedly – if the same information is there.

MR. CARMICHAEL: Well, if you're not ready to do all that, one way is perhaps you look at the information you do have and determine whether or not you think at least the 8.3 or 8 point something that's on there is acceptable for an ABC. Perhaps you can do that just by looking at these probabilities without doing all that. Again, that relies on these probabilities and see what you think of those.

DR. WILLIAMS: I'm kind of getting confused in this whole scenario. We don't know what OFL is? That didn't come out of the assessment or wasn't there a recommendation for OFL out of the assessment?

MR. CARMICHAEL: I believe its yield at MSY; you should have OFL.

DR. BARBIERI: Right, I was wondering if we should just pull up our list of motions from December '08 because we did have – I mean, we did review this and I think we made some statements regarding accepting their estimate of MSY or proxy. I don't remember if we accepted the actual direct estimate of MSY or the proxy, but one way or the other we should have an estimate of OFL that way.

DR. COOPER: The table that is in our current documents yield at Fmsy is 10.4 million pounds. It's Table 2.

MR. CHESTER: I just want to point out that in our ABC control rule we gave examples, and king mackerel was one of the examples. Of course, that's subject to this group's finalization, but interestingly the probability of overfishing came out to 27.5 percent.

DR. COOPER: As clarification on Table 2, this yield at Fmsy is 10.4; is that Fmsy applied to Bmsy or is that Fmsy applied to the current abundance, because the OFL is Fmsy or its proxy times current abundance. We would want clarification on what this yield at Fmsy; is that the theoretical long-term MSY value or is that Fmsy times current? They could be very different. Just to correct myself, that 10.4 was reading off current and not proposed.

MR. CARMICHAEL: I think that's the estimate for that one year.

DR. BELCHER: For everybody's reference, the motion that I have relative to the king mackerel assessment from last December was that we endorsed it as best available science with management to be based on the base run of the model. That was the language that we had.

MR. CARMICHAEL: That comes back to this table which is the base run column, which is the first column is the probability analysis. All of this is from the assessment. So really what we're asking you now is what is your critical value for the probability of overfishing that you believe is appropriate for king mackerel so that you can infer ABC off of this table?

I guess one question is – you know, what the council has put on there is using 8.8 as the interim until you can come up with something else. Now, Gregg, is there a desire to have a fixed value through time or could the SSC recommend – you know, this is annual value. Could they pick a series of years off of this and say use a value for X probability off of this table?

MR. WAUGH: Sure, there is no requirement to specify it. It's just that when the council has translated it into management, we've generally set a fixed quota for a period of time.

MR. CARMICHAEL: It may not be a bad idea given that we know how these projections become more uncertain as they work out in time.

DR. BARBIERI: And you see here in our control rule, the examples that we ran, king mackerel is there and Spanish is, too. King is with 27.5. Now, this is when we were running through the examples. I don't remember if our estimate of the values for PSA, for example, were really meaningful.

DR. BELCHER: That one was updated.

DR. BARBIERI: Well, then in this case; I mean, we have a P-star critical for king based on our control rule criteria.

DR. WILLIAMS: John, were you recommending that we come up with a single catch value that would apply through multiple years or specify years specific – I got lost in that conversation.

MR. CARMICHAEL: I think that was a question of which way you should do it, and Gregg was mentioning that they tend to put the TAC in place for a number of years, so I think you could take the average across years as the team has done in that table. From the projections perhaps you could the average for a given probability level across years or maybe you pick one of these values – pick the appropriate value perhaps for 2011 and say that's the value that's in place. I think that would probably be better than having it change each year based on that table simply because of the expansion of that uncertainty over time.

DR. WILLIAMS: But that's the precise property you want to capture in the ABC. In other words, time does cost you catch because uncertainty does increase and your buffer should increase because the uncertainty is increasing with time.

MR. CARMICHAEL: It seems like in these tables the yield for a particular probability goes up over time I expect as the stock is projected to increase over time, but then the concern is that the associated uncertainty also increases, which may or may not be encompassed as fully as it is in the P-star analysis, so which chance maybe you'd want – until the next time that this is brought up and the P-star analysis is actually done – a fixed value for one of the more recent years and just carry that and not have it increase, which I would presume the fixed value is somewhere between the proposal put forth in the table of 8 point something and the associated at 27.5 percent chance of overfishing – and conveniently in 2010 that 8.5 million pounds is a 0.274 chance of overfishing occurring, and in 2011 8.5 is 0.255 chance.

Perhaps the proposal that's on there seems consistent with what you have in hand that reflects the uncertainty of the assessment and you can be comfortable with that for now; the 8.836, and you could bring in your concerns about the propagation of uncertainties forward in a more complex P-star analysis that should be considered for the next round of king mackerel.

DR. WILLIAMS: Hold up, I'm getting confused again. The Table 3 that we have in our Attachment 18, we keep looking at that first column, the F 30 percent SPR, but we were talking about an OFL based on Fmsy. What is the OFL?

DR. BARBIERI: We used a proxy of 30 percent SPR. That's because they did not accept it.

DR. WILLIAMS: Well, then, that other table we were looking at said Fmsy, and I was getting confused whether we actually had an MSY estimate or we're still using a proxy.

DR. BELCHER: A proxy.

DR. WILLIAMS: All right, gotcha.

DR. COOPER: To that point – and Gregg pointed this out to me – Table 3 with F 30 percent as our proxy for Fmsy is essentially giving us our OFLs for those years, if I'm interpreting that correctly, but supposedly our proxy for Fmsy is times the abundance in those years, which is the definition of OFL. We might be able to, in the amendment, mention that as our OFL, which doesn't get at all to – Erik.

DR. WILLIAMS: Well, not really to that point, but then shouldn't these values in Table 3 line up with the 50 percent probability in the table from the assessment? Can we verify if that's the case?

MR. CARMICHAEL: We can check that. It says F 30 percent SPR in 2010 is 9.154 in Table 3. In 2010 50 percent seems to be – it's above 9.5, obviously. All right, let's go up one, 2010, it would still be above 9.5, so this seems a little bit higher.

DR. COOPER: Well, are those projections based on if we caught, say, 8.5 million pounds in each of those years, here the probabilities associated with – in other words, are those projections constant catch projections and then showing us what those probabilities are each year, which is different than a constant F level applied to all those years, which is what Table 3 does. So if its constant catch, we're going to get different answers and how translate from one to the other is beyond me at this hour.

DR. BARBIERI: Okay, so just to confirm, because we keep going back and forth, the average of 2011 through 2016, 8.836, that represents now our estimate of OFL for this projection period; right?

MR. CARMICHAEL: That seems to be one interpretation you could make, yes.

DR. CIERI: If I'm reading this correctly, for which we would have to derive an ABC from that; right? Okay.

DR. BOREMAN: And for further clarification, are we bound to come up with an OFL for the entire projection period, of as John says can we come up with an OFL year to year?

MR. CARMICHAEL: I think either way. You have some liberty there.

DR. CIERI: So what is the council staff's recommendation? I mean you're basically setting specifications for a certain time block; correct? The time horizon for specifications is sort of a council decision at least to my mind; yes, with input from the SSC, of course, based on life history and all that other happy whatever.

In general I think the council needs to figure out how long do they want do they want to set specifications for, and then noting and understanding that the longer that they set those

specifications more, the longer the time horizon the higher the uncertainty level. That would give the Science Center the ability to run projections for a set number of times as opposed to just sort of regurgitating a whole bunch of probabilities. Am I making sense?

MR. CARMICHAEL: In place until changed I think is the intent.

DR. BARBIERI: Right.

MR. CARMICHAEL: Yes, in place until changed.

DR. CIERI: Well, that's kind of open-ended.

MR. CARMICHAEL: It kind of means then the next scheduled look and revision and update would be at the next assessment, benchmark or update, which mackerel may be penciled in out there in about 2015ish for an update between now and then. It is penciled in because all the coastal migratory pelagics are scheduled to come in circa 2014.

DR. CIERI: So you guys don't set your specifications on an actual time horizon; you just sort of leave it there until you feel like changing it? Okay, that increases the sort of uncertainty because as you get further and further out with your projection, the more and more you could going wrong, and so that needs to be accounted for. Whether it's accounted for in the scientific uncertainty or whether it's accounted for in management uncertainty, I'm not that good of a policy person. There are some significant risks with leaving your specifications open-ended.

MR. WAUGH: Given that we don't and haven had a set assessment schedule, that is why the council has put those regulations in place until modified by an update. We sort of looking for an updated assessment to give us some indication of what impact management has had, and then the council will adjust the regulation.

We have looked at alternatives that would put in a set quota for a period of years and then change it – say, for the next three years it would be at one catch level, the next three years at another catch level, but because of some the points of the uncertainty increasing, as Erik has pointed out, what the council has done is set them and held them constant until we get an updated assessment to see what the impacts of management have been and then we make changes.

DR. COOPER: Okay, a complete side note here, but why are the landings under F 30 percent going down over time while all the others are going up over time when the stock is rebuilding? Well, I think the first year is basically assuming whatever that 2007 landing is – I can't remember how these projections were done – but the other ones generally – well, some them seem to increase and some of them don't, but I would assume under F under a rebuilding stock your yield should go up.

MR. WAUGH: This isn't overfished and we're not overfishing, so we're not in a rebuilding program.

DR. COOPER: Okay, so the recruitment assumption is – okay.

DR. CIERI: Okay, just so I'm all cool and groovy here, we're looking at the F 30 percent SPR? Okay, that would give us basically 8.8 for over the next – whenever they feel like it – and basically from there we're going to set the ABC? That is going to be our OFL and then from there we need to factor in scientific uncertainty.

DR. BARBIERI: Have we decided if we are able to use the table with the states of nature that came out of the assessment? Is that comparable to the – no?

DR. COOPER: Especially if we're treating the average as our OFL, you can see the average is kind of midway down the time series, but the uncertainty is very asymmetric relative to that time series, and we're much less certain about those lower numbers than we are about the higher numbers. How to set an ABC based on an average, when we don't have the uncertainties – big can of worms.

MR. CARMICHAEL: So I suppose your options are you don't know or you support the range, as it says, of 7.4 to 8.35, which is based on a 65, 75, 85 percent of SPR; or you pick one of those in there and you say use the 75 percent of SPR 30 until such time as the full-blown probability analysis is conducted that allows us to find the actual poundage associated with a 27.5 percent chance of overfishing occurring, which is your critical value; or perhaps you ask that – I don't know the timing. Is there a possibility that the probability analysis could be done and then you could pick the number right off of that and not have to go through that? I guess that's sort of the fourth option.

DR. WILLIAMS: And another option is that we do not specify an ABC at this time, period.

DR. COOPER: Of those options, we either don't do it or figure out how to shoehorn those projections from the assessment into things, but I'd be very much against choosing 75 percent of SPR F 30 because that goes completely against our control rule; that either we can figure out how to take our information and put it into the control rule or we can't, but then to develop – because if we calculate the buffer, we've got some estimate of OFL, we might figure out how to use it, but let's not go picking percentages out of the air.

DR. BELCHER: So then what is the consensus of the group relative to king mackerel as to how we proceed?

DR. BARBIERI: And I agree with this and find ourselves in a little bit of bind here. No, we haven't? Well, the way that I feel I guess that we have is because about a year ago we accepted this analysis and we had the option to ask for additional analysis of not accept the assessment at the time; you know, send it back to the Science Center and ask for additional analysis and we didn't.

DR. BELCHER: To that point, we didn't have the control rule then either to know what we needed, so we couldn't really – we didn't up come up until March with the control rule, so we really didn't know until we had that framework together what we were really needing, so that's kind of asking questions well after the fact. There isn't a problem with the assessment. The problem is the assessment doesn't fit the current framework at least to the specifications that we need it to. Erik.

DR. WILLIAMS: Just so we can maybe move forward, I would propose that we can at least specify OFL, we cannot specify ABC, but just so we don't this scot-free, I think we should take the time to maybe make a statement of what exactly we expect to see in order to make our ABC decision; what do we want to see put before us in order to make an adequate ABC decision, and maybe that's worth spending some time to make sure we get that right so that we don't end up in this situation again.

DR. CROSSON: I guess this is a point of clarification from John or whomever. Looking at the SSC roadmap, it shows for the Comprehensive ACL Schedule that n April we're going to be making ABC recommendations?

MR. CARMICHAEL: That's what you asked for those, yes, in your April meeting for things that you haven't already addressed. You've already addressed it for some stocks and here king mackerel you may to have to address it here. Some things are on a different schedule. King mackerel is being addressed for Amendment 18. A number of different species are being addressed through other amendments. The comprehensive is for all those species that haven't been addressed through Mackerel 18, through Snapper Grouper 17A, 17B, et cetera.

DR. BELCHER: So my thoughts are so far as the start of the consensus statement, how we want to look at this, is we can give a recommendation of OFL. However, under the current framework of how we're recommending ABC, we're deficient. This is where I'm calling for everybody to outline where we're short, why we can't do it, so that way we can get this issue addressed. Everybody in agreement that's probably the best way to start? Okay, let's outline the deficiencies and what we need to have met in order for this one to come to fruition. Obviously, PSA is not a problem.

DR. COOPER: Correct me if I'm wrong, but I think if we go back to the stock assessment document, had we had the table that had instead of a constant catch scenario and the associated probabilities a constant F scenario with associated catches, I think we'd be good to go. I don't know if we can get there from here, but I think if we had those things I think we'd be able to specify an ABC. Because we have the OFL and then we know how to buffer based on what our example did, we'd able to find out where that is on the table with a constant F scenario.

DR. BELCHER: So that's the only deficiency is to how we can't framework work, then, is because we weren't given – for this particular example, because king mackerel, obviously, the assessment was done prior to the control rule. The framework was developed three months later; and as such, the one thing that would have helped us to be able to determine an ABC was the lack of a constant F scenario; correct?

DR. COOPER: I may be completely contradicting myself, except this council is wanting constant ABCs; in order words, an ABC that achieves an appropriate percentage and that ABC is constant over five years, a constant F projection won't give us that, so this is where you're going to have tailor – this goes back to Matt's comment – over what time period are we looking. A constant F scenario will have the ABC bouncing around from year to year just like the OFL does on the current table; and so how to get a constant value out of that that agrees with the percentages that our control rule gives us I think is no small task. Is that correct?

DR. CIERI: Of course, the danger of all of that, of using the average from 2011 to 2016 you will note – and maybe this was brought up before – that by 2013 you're going to be fishing about your F at 30 percent SPR if you use the average; right?

DR. COOPER: That's how I felt.

DR. CIERI: Right, so you're actually going to be – you're actually setting your OFL so that you're going to be going above that if it doesn't get changed until – you know, when that goes into effect. We need to try to figure this out. By not setting an ABC, what do you guys normally do when your SSC punts?

DR. BELCHER: We're just now starting in the process of punting practice. This is the first time we've been faced with this. We have a control rule that came out – you know, again, we've been dealing with assessments and had mechanisms by which to work with them, but now as we're being faced with the new ABC control rule, you're going back and finding out what originally we dovetailed and came up with a structure we wanted to work with, now that structure doesn't fit the framework.

DR. CIERI: Can we stall until April until we get that table that we need?

MR. CARMICHAEL: You could set a time stamp on it. You could say this is an ABC that's good for –

DR. CIERI: One year.

MR. CARMICHAEL: – one year, two years. You could pick the lowest value in that. If you feel comfortable in using that for multiple years, you could look at from – we're in what – this would go into place for the 2010 fishing year at the earliest. When is this – 2011, right, so you could like look at 2011 and say it's somewhere below 9.1 and look for the next two years or something and pick the lowest of that.

I think there are ways of dealing with the time if you want to put bounds on it. You don't have to feel like you'd take it totally into that time. Getting some idea of what you're comfortable with in doing those; and if you're comfortable with doing any of that would be helpful.

DR. BOREMAN: That goes back to my question, because that's basically how the Mid-Atlantic SSC is doing it. Until we have a control rule in place agreed by the council, we are setting one-year specifications, and we call them interim ABCs.

DR. BELCHER: Group discussion on that? Well, what we need to be able to set a one-year interim TAC? Do we have the information or not?

DR. COOPER: This is the problem we ran into whenever we were doing this. Let's say we pull out the 2011 number from Table 3. That's assuming it was being fished at 30 percent SPR since the assessment. This is what I ran into before, without knowing was it above or below, yes, we're kind of just saying, well – and we probably could get that data to figure out what landings were relative to these numbers over the years, maybe. I think we could, but could we in the next five minutes; probably not.

MR. CARMICHAEL: Are you hinting around that maybe you want some updated projections? You would then craft what you want and incorporate what has actually happened from this time and give us a projection for a couple of years out; is that where you're heading with this? I don't know how that affects timing and everything else with this. This is a request that would go in. If the SSC got that in April, how would that affect timing of mackerel, Gregg?

MR. WAUGH: That would be fine.

DR. BELCHER: So let's try to get words on what we're going to ask for, then, so we can get it in the record. Erik.

DR. WILLIAMS: Just a point of procedure; is maybe a better a way to assign a couple of people to start it instead of opening the floor to just throwing words out might be a little bit of an onerous process.

DR. BELCHER: We could do that as well. We've got two other species to talk about. Who wants to sit down and think of something to craft so we can discuss it tomorrow? Erik.

DR. WILLIAMS: Just so we're clear, I don't think we have to do anything. I mean, we do what we can with the time we're given and the resources we're given. Let's be clear about that.

DR. BELCHER: I would like to have something clear in our record as to why we're doing what we're doing as opposed to looking like we're saying we're not going to give you anything, because it seems like that's what our current record has been standing quite clearly on is we're not giving you anything and the reasoning behind it has not been as clear. That's all I'm asking for.

Again, if it opens up a segue to the next two, you're looking at Spanish mackerel as another point of discussion for us. Again, looking at the motions that we had in December, we accepted that stock assessment as best available science, we concur with the review panel's conclusion the

stock is not undergoing overfishing, but the model or underlying data are insufficient to make biomass-based determinations. How are we going to come up with OFL and ABC for that?

Some of this stuff, it's a continuation that if we get at least that original phrasing of what our criterion are, check off this list, check off this list, and it's missing here, they're at least seeing where we're stalling. We're giving you OFL levels but we can't give you anything else and this is why.

Then that way that gives them, at the same time, the understanding of what we're requesting and why we're requesting it so that we can make deadlines in the future. That's all I'm asking for at this point. And the other stuff, obviously, the requests will fall out of it more specifically as we go along, but if we can have that one starting paragraph of what we can give and then why we can't give the rest of it or at least get us rolling, and that can overlay into the next two species as well. Matt.

DR. CIERI: One of the things would be what Andy alluded to, stock performance since this last assessment. This was terminal year, what, 2007, and so you want that type of stuff, so you want basically landings from the stock and then how it relates to F 30 and 40 percent. Then the second is if there is an independent index of recruitment would be the second. The third would be an updated set of projections, and fourth would be that table put from F into probabilities. How is that? Is that about right?

DR. BELCHER: Say the last one again.

DR. CIERI: That the table from the assessment document that had a constant landings' strategy, change that to constant F.

DR. COOPER: Except I don't think we actually want constant F. If the council is wanting us to set a constant ABC over time, then what we need is a constant catch for the time period and the associated probability. Right now what we've got is each year a constant catch and a probability for each year, and I don't know if we can actually convert that into an overall probability for the period or not. But until we know are they comfortable with an ABC bouncing around under an constant F, if they're fine with that then we just need a constant F projection at the appropriate – so it defines one has the appropriate probability.

DR. CIERI: Yes, this is why we need to have a set time horizon in order to make our decisions.

DR. BARBIERI: Well, looking at Table 3 I kind of get an impression – and maybe Gregg can confirm this or help us figure this out – that the council is looking for a constant F strategy because that's how you built this table; right?

MR. WAUGH: The way we've managed mackerel historically is we've gotten an ABC range and then we specify a TAC until it's modified after another assessment. This basically is mimicking how we've managed mackerel historically, looking at an ABC and then setting a TAC or what would now be an ACL until it's modified.

DR. BARBIERI: Yes, which in that case, then it sounds like a constant catch scenario; right?

MR. WAUGH: In the past the way the ABC has been calculated is based on the council's OY, which is F 40 percent. That's how the ABC has been derived in the past.

DR. COOPER: Erik, I think I'm going to need your help on this. If we have the probability of overfishing in each year; is not the probability of overfishing over that time period just a product of the independent probabilities or am I missing a feedback somewhere?

DR. WILLIAMS: It's conditional on the catch in each of those years, and so they have to meet that catch exactly each of those years, yes. Then it would work out – right, and the recruit, all those things, yes.

DR. COOPER: Okay, but then the tables in the stock assessment, though, give us if catch is this – without running further projections, we know if we hold catch at this, here is the probability of overfishing in each of the next however many years, someone could dump that into Excel and calculate the overall probability of overfishing over a certain time period without running additional projections except the fact that we're kind of two years' beyond where that starts; isn't it?

DR. WILLIAMS: Well, except we don't know how they did the feedback in those projections. In other words, what landing did they use for the next year? We don't know that.

MR. CARMICHAEL: The catch is not a mystery. We know what catch was through the last year. It's probably in the document.

DR. BELCHER: Luis is bringing up a point, which again we're dancing around it, but one of our caveats under the control rule is that our probability of overfishing applies to the entire projection period of management, so it's not individual years. We're not doing it as annual probabilities.

We're doing it s for the entire time period, so we almost need some guidance either from staff or council to say do you want a five-year block, six-year block; so that with the projections being done, they're carried out so that probability assigns for that time period. Does that make sense? As opposed to 25 percent within each year, it needs to be 25 percent over – like Matt was getting it. We need a determinant time period; we can't do it just indeterminately.

DR. BARBIERI: And if I remember correctly – I'm trying to draw from memory and I'm trying to find the document – we decided to stick with this way of handling things until we did some more thinking about this and made some additional decisions and refinement and eventually could come up with a different way of expanding or applying those probabilities over the projection period. But in the meantime my recollection is what is reflected in our PowerPoint, which that probability applies to the entire projection period of management.

DR. WILLIAMS: The other thing we can do, as John mentioned, is specify just an interim ABC that is just for one year, and then we don't need to the timeframe. We just go with one year and get the projections for that so the council doesn't have to make a decision. We can task whoever need to do just that one-year projection and set the ABC for that one year, and at least we're good for 12 months.

DR. COOPER: Along the same lines, we could use this as somewhat of an educational tool of here is your ABC if we do it one year, here is ABC if it's a time-year horizon, three, four, which shouldn't take that much more computer time, but that way the council can actually decide on their own what the tradeoffs are; that if we're doing specifications every three years, this is what we can do, but if we wait five, this is where we're going to be, which is something they're going to have to decide upon eventually; and so showing them the costs and benefits of that up front, it might be good to basically have a table of here are your percentages, here is your time horizon, here are your numbers.

MR. CARMICHAEL: That would be spectacular, I think. Now that I'm off the screen, I looked at the schedule. The coastal migratory stocks next assessment is a benchmark in 2012, which means it comes to the council in March or so of 2013. It could take place for 2014. Your option is to do it for a year or you do something for 2011 through 2014. You could specify it in that vein, perhaps, for a three-year period.

DR. BELCHER: Okay, now that we've thrown all that out; again, we really need to try to capture a consensus of what we're asking; what we're willing to give and what we need. Luis.

DR. BARBIERI: Well, in that case I would agree, Erik, that perhaps we can do this as homework and bring this back for the committee to evaluate tomorrow morning as the first order of business, because we're going to have to review the other species and it might be in the same situation. It might be easier to handle this offline.

DR. BELCHER: Okay, do I have a couple of people willing to do that, get together and do that?

DR. REICHERT: I'd be willing to.

DR. BELCHER: Okay, Marcel said he'd be willing to rapporteur or type it up, so a couple of other folks? Marcel, I'll get with you, too. Cooper, Luis. Okay, so again thinking with Spanish mackerel, we'll come back to a consensus statement. Does everybody feel like we have an idea on what we need to do and what we're going to recommend relative to king mackerel in the interim?

Okay, so moving on to Spanish mackerel, the same type of questions. We need to be able to specify OFL and ABC for Spanish mackerel. Again, I would think we would ask ourselves the same questions.

MR. CARMICHAEL: You may have to ask the question a little bit differently based on what came out of the assessment. The review panel did not accept estimates of stock abundance,

biomass and exploitation rates due to concerns about robustness of the assessment, to uncertainty and inputs of the model assumptions, and they did not accept Fmsy. They did conclude that overfishing is not occurring, but we don't have any of the biomass stuff, so I'm not exactly sure how you're going to get to ABC based on yield without biomass estimates. We're kind of asking a more basic question at this point.

DR. COOPER: Well, that's why we were careful about saying our current control rule applies when you have OFL in terms of biomass. This is off the ranch as far as our control rule goes. We haven't figured out how to deal with it yet. I think that's probably as much as we can say. I mean this is something that we've been not dealing with for a while is what is our control rule when we don't have OFL in terms of pounds and associated uncertainty. We haven't figured that out yet. Just like before not being willing to give numbers before we have a control rule, that's kind of been our behavior.

DR. BARBIERI: Again, using this as a way, first, to go over our control rule and perhaps refine it as needed. Under assessment information, Tier Number 3, relative measures of exploitation or biomass, absolute measures of status are unavailable, but we have in that case proxy reference points.

DR. COOPER: But we have nothing to buffer against. All this assumes that you have an OFL and uncertainty and then we're buffering from it. We don't even have that. You can throw the tiers at it and say, well, we would buffer it by this much, but we don't have "it" from which to buffer. We need to figure out how to specify OFL in the absence of knowing abundance.

DR. CIERI: That is a continuous problem. When you don't have those biomass estimates, guess what we're going back on. It's going to be recent landings. That seems to be the standard and it's probably a pretty decent idea. The question is what do you want for a time horizon? You've already got your uncertainty level using that tiered approach. There you go!

DR. COOPER: The discussion is somehow you have to base OFL on the landings' history, and there are a bunch of ways of do it. There is a working group being set up from the National SSC Meeting to try and deal with this, but it's not something that we're going to be able to sit here today, I think, and calculate though we could probably have a discussion about some of those options. But, yes, you're stuck with landings and whether or not those landings were sustainable and how we think those landings are related to the sustainable landings given the current abundance.

MR. CARMICHAEL: And that's part of the discussion for later in the week when we talk about the Comprehensive ACL is taking your control rule to that next step and saying, okay, we have the tiers in there; how do we take what is viewed now as a probability level and how do we turn that into just a straight-up buffer presuming somebody is going to fill in that top blank about what is MSY and OFL and what is the landings' level?

That's where your request to the Science Center would come in; requesting that you be given information on the MSY level, expecting that then you could run this through the buffers and

know how to adjust that to get ABC. Perhaps that's where Spanish mackerel stands; that until you get the MSY; and I guess that wasn't accepted in the assessment, so it's got to come from somewhere else. Perhaps this working group will answer that question after all these years of debate back and forth.

DR. BARBIERI: Well, back to the control rule, maybe we want to do something between now and April or whenever, but we want to do something to look at some of those tiers that we cannot actually use and we cannot apply the control rule to. I mean we're still expressing buffers in terms of PSAs even though, for example, Tier 5 in that assessment information is scarce or unreliable catch records; so it's really useless in that case to assign a 10 percent P-star discount because there won't be any P-star that we're going to get out of it.

DR. COOPER: I'm a little more hopeful than that. Well, for instance, Alec McCall's approach of – I forget – the depletion-corrected – if that is based on sketchy landings' data, you can still get an OFL depletion corrected with some uncertainty bounds; and then we can say but because this is based on such sketchy data, we're down here; as opposed to if we actually had reliable landings, still using the McCall method, then we don't buffer quite so much. I think it's still useful, but until we figure out how to go from landings to an OFL and propagate some kind of statistical distribution about it, we're just kind of here, hanging.

DR. BARBIERI: Right and that's correct, but would we be able to do a P-star analysis for those species? No, so that's –

DR. COOPER: The tiers don't require a P-star analysis. The P-star requires a probability distribution around OFL, and that's it. And that's the whole beauty of shifting the goalpost rather than trying to calculate the actual probability of overfish, right, because what we're doing is we're buffering from 50 percent but we're not actually calculating the true probability of overfishing because we can't do a P-star except in the best case scenario. So, no, we're not going to do P-star but we are buffering from our estimate of OFL.

DR. BARBIERI: Right, so what will be the meaning of the 10 percent, then?

DR. COOPER: A 40 percent buffer.

DR. BARBIERI: And my point is if we were to split and treat them separately, it would be just a little cleaner for the ones that we can't apply the P-star approach directly versus some other form of uncertainty characterization that is yet to be defined. Here it does give the impression that all of those tiers within dimensions are actually applicable to the body of the control rule, and we are not there yet.

MR. CARMICHAEL: Since they're just not fully independent, if you start out with scarce or unreliable catch records as your assessment information, it's pretty much a foregone conclusion where you're going to be with regard to uncertainty characterization and stock status. You might not be quite be at 10 percent regard to the PSA analysis, but you're at least buffering by 30 percent.

So the question is does that mean if you have an MSY that is tied to some landings' pounds, do you go 30 percent less than that; perhaps. I think that's the discussion to talk about, how do we turn that into that. Does the McCall approach require anything other than landings? Is that something that could be applied to these stocks?

DR. COOPER: It requires a subjective decision on how depleted do you think the stock is relative to virgin, and I believe requires a gut estimate on Fmsy relative to M. So, yes, it's not a black box. As you would expect, going from just landings, it's a continuum of how much expert opinion goes into – expert opinion versus pure statistics goes into estimating OFL; and the less data you have, the more expert opinion you're going to need.

The only thing the McCall approach does is it says, okay, here are the pieces of expert opinion we need. You can then do some sensitivity runs on it, but, yes, you're never going to be able to get from catch to an estimate of OFL without throwing in a heck of a lot of expert opinion.

MR. CARMICHAEL: So in a sense it's kind of self-evident, then, if you presume to know where the stock is, then you can use the current landings to determine where it is in regard to its status. I think that's where this SSC has always balked. It's like we don't know; you don't know where the stock is. That's the part of the equation that always seems to be the hangup.

DR. COOPER: But the McCall approach at least provides a rigorous approach for sensitivity analysis; where if we think it's 20 percent of virgin, this is our answer; if we think it's 40 percent, this is our answer; where do we think it is, and we might at least be able to ballpark. Whereas, right now what we have been balking on is not only where is it relative to where it should be but are these catches sustainable given where it is. The McCall approach is one approach that helps us more formally back-calculate all the stuff we need, but, yes, we're still going to have to make tough decisions.

DR. BELCHER: So, again, thinking to drafting a consensus on Spanish; basically, my take on my notes from what we've discussed is that we can't determine OFL or ABC at this point for Spanish because we do not have a measure of OFL and biomass. Until we have an MSY value, we're pretty much stalled on the process.

DR. COOPER: And add that we've requested that value from the Science Center. Didn't that letter go out from our last meeting, so it's not that just we're saying we can't do it. We're saying we can do it once we get the information we've asked for and we're waiting for that information.

DR. CIERI: All right, so we can't do it; where does that leave us? I mean, seriously, don't we need to specify some of these ABCs or is it just –

MR. CARMICHAEL: I guess I'm not the expert in the Act, but it seems like I've heard some suggest that the council could set an ACL without having you set an ABC in these instances where you don't set anything at all. Is that correct? All kinds of theories have been talked about as to what would happen. Maybe Gregg will add a bit.

DR. BARBIERI: Well, that was explicitly what was discussed at the National SSC Meeting.

DR. BOREMAN: Yes, explicitly discussed but I couldn't get a yes or no answer. I went back with the Chair of our Mid-Atlantic Council and we reread the Act, and the Act says that we have to provide an overfishing recommendation, an ABC recommendation – not an ABC specifically but a catch recommendation to the council. To us that says, no, we just can't get by with, no, we don't have the data so you're not going to get any estimate at all. Do you really want the council to be setting ACLs with no scientific basis? No.

DR. CIERI: Yes, really, that's the whole reason why we have to get this data to begin with is so that when we get into situations like this, that the appropriate uncertainty level is taken into account. It's not one of those things where we're slightly uncertain and this happens, but we're really uncertain so, yes, you guys choose. I think probably we need to – at least from what I've seen in New England, we've done the same thing.

Even if you don't got nothing, you've got to do something. You really do have to set probably an ABC. You have to give them something to work off of; otherwise, they're supposed to derive their ACLs from taking the ABC and factoring management uncertainty. If we don't give them an ABC, how are they going to calculate an ACL other than doing what we refuse to?

DR. BELCHER: The problem has been – and this is the hard part because of the history – it's not that we're refusing to. We have offered up interim solutions in the past, and basically judgment calls that we have made based on the best scientific advice in this room have been kicked back to us as being arbitrary.

So, at what point are we going to be able to make a decision that we are not going to have it constantly put back in our lap as we don't agree with that, you're going to have to do something different? That's where right now we understand there's a missing piece. We need the time and the components to build it, and we haven't been able to do that.

DR. CIERI: The way that has been handled in some of the other SSCs that I have observed has been to set it based on landings, contingent upon values such as MSY or Fmsy or any of those things that we can lay out for any of the stock. Yes, it means that you have to go through from a tiered approach and maybe be a little bit arbitrary, but the truth of the matter is if you apply that consistent approach to all of your stocks, when you're factoring in that uncertainty, that's the role. If the council disagrees, then it's up to the Regional Administrator to make the call, because that's the person who ultimately makes the law.

DR. BOREMAN: I don't want to get into a discussion of philosophy here, but the council put us all on the SSC to give them our best scientific opinion; and if we come back with a consensus scientific opinion – this is the collective best scientific opinion of the group, then I don't think they're in a position to say that what we did was arbitrary.

But I think, as we're doing in the Mid-Atlantic, is we better have some rules in place for when is an ABC remanded back to the SSC and under what conditions, and one condition should be they

didn't like the answer. So arbitrary or not, I wouldn't use the term "arbitrary, I would just stick with the term this is our best scientific opinion given the information in front of us at the time, the best science information available, as lousy as it may be, but let it go at that.

DR. BARBIERI: John, I completely agree. Basically you said what I was going to say; that the difference between our best professional judgment and providing expert opinion and arbitrary is murky, and I think that our decision here as a scientific advisory board should stand.

MR. CARMICHAEL: I think part of it was the things that were brought back were on issues about the level of justification and how it was discussed and what the differences were between the two stocks that were having different recommendations. It wasn't as simple as saying, oh, well, that's just an arbitrary thing that was thrown out.

It was, well, what is the justification and when this committee burrowed into that justification, I think the committee felt the same; that there wasn't enough scientific justification and record built on those recommendations at the time. But some way we have to find a means to do that, to build a discussion that supports your scientific justification.

No one is saying that the scientific justification and your ability to apply expert judgment is not present. You can do that, but you have to build a record about it; what are the opinions about it and go around, and it's probably not going to be easy, but we're going to have to try in some way. We had this discussion when we talked about red snapper and the record that is built with regard to discard mortality, and it's kind of scant.

That's q question that is going to continue to plague that assessment until a record is built up that's more thorough. It's really not any different than the situation we're in right now, so I think there is means to apply judgment. We've seen that loud and clear. The Act apparently says you absolutely have to do this, so let's figure out how we're going to build the record at this table with this group that's withstand some scrutiny and say, yes, this is our judgment. As John said, then you're saying this is your record, then that's what it is. If this is your judgment, that's what it is.

DR. WILLIAMS: What has to be factored in all of that, though, is what we're presented with versus what we know is out there and available, too. Its one thing for us to know that the best thing we can get is some stream of landings and then we have to do something with that; that's fine. But, if we're being asked to do, say, for some species where we know we probably could get a full assessment from and have better information, say – I don't know, one that hasn't been assessed in while – gray triggerfish and they said, well, come up with an ABC and we have no stock assessment in front of us, and all they give us is a landing scream, that's a different situation, because then we're asked to do something with inferior information than what could be available. That's where I have some issues with where we would stand on that situation.

Going back to what everybody said, I think then we have what we need for Spanish mackerel in front of us, because this is the best we're going to get. It's an assessment that was attempted, it

didn't come up with biomass estimates, but that's it, that's the best we're ever going to hope to get from that stock, so we probably do have what we need for that in front of us.

MR. CARMICHAEL: I think that's a good thing to talk about with regard to these things when we're dealing with a data poor is to keep Erik's question in mind; do we have in front of us all that is available? That's a good point with Spanish, you have all that is available. There is nothing new to come out for Spanish mackerel to help you.

Whereas, it's true, some of these stocks that haven't been assessed, it doesn't mean that they can't ever be assessed. There just hasn't been the resources to go through the individual data sets and figure out what could be done, which is where your request has come in and where it stood and working it through the system.

DR. COOPER: I agree completely with what has been said so far except with respect to best available versus what could be done. I think it's one of these – I forget what the phrase is – crows coming home to roost or something where we could have an assessment but we don't. The best available science is what we have now and not what we could have in a year.

So we will, even in those situations – we may not like it, but because we haven't done an assessment; therefore, the best available science is whatever can be presented to us. And how we turn that into an OFL and ABC is something we still need to figure out. I disagree that waiting for things to come up – yes, I mean, that's part of the whole problem; we have to make these decisions on what we have available now regardless of what is right around the bend, and the trick is figuring out how do we do that in a consistent manner.

We tried doing that once, and my recollection wasn't so much that we were inconsistent as it is that certain powers on high didn't like it and so told us, no, we don't have to, but that could be misremembering. The fact is if we can come up with a control rule, we're good to go, and I think that's what we should probably be focusing on in these data-poor situations.

Is it the McCall approach, is it some other – you know, take current landings and divide by 27.2; I don't know, but that's the thing where we have to debate and sometimes it will be the case where, yes, we could have an index of abundance if we waited three months; but if they're needing decisions now, this is where political pressure has to be applied to get us the information we need, that we've been asking for it. If we had an index of abundance, we'd be able to do a lot better than if we just had catch.

Now how we incorporate that when it's not fully peer reviewed, and it hasn't gone through data – all kinds of worms are crawling out of everywhere now. But, yes, the trick is how do we do it consistently; and once I think we say, okay, this is our process, we can apply it, but we haven't figured out the process yet.

DR. CIERI: Don't you have the process; you have that tiered approach; correct?

DR. COOPER: We don't know what to do without the OFL.

DR. CIERI: Well, you can certainly apply that to a landing stream just as easily as you could apply it to an OFL.

DR. BELCHER: In theory, yes, but this is where the problem was is that there is – and this came up at the national meeting – there is a lot of different percent discounts that have been applied to a landing stream. Then the issue is how long is the landing stream, what are you going to focus on and what is the best indicator without knowing what your OFL is?

That's kind of where everybody is in the same thing. There has been a 75 percent applied to some landings, but the time series has been long, it has been short, so what are those decisions based on? That was a question that we asked in the first meeting and it was based on best scientific expertise at that point was where the 75 percent came from.

We had applied a 95 and 90 percent. As Luis pointed out, this failed to match the justification of why those numbers were applicable. It was based on professional expert opinion around the table and what they knew about those two particular species and where that 10 and 5 percent discount came from, but that wasn't clear enough.

So we've waiting to get more guidance from the national level, letting more people have these discussions to determine how do you best handle the landings' data so there is a consistency thing. It's not species by species like in our situation where we were looking at 90 percent for one and 95 for the other. Well, based on what; should it be some percentage relative to something, and that's what we haven't figured out yet is that detail.

DR. CIERI: Right, but I'm guessing are you going to get that clarification before you need to make an ABC recommendation for this stock? And if you not, then we're going to come up with something now.

DR. BELCHER: We don't disagree.

DR. CIERI: And not hope for guidance. Again, back with the other mackerel discussion of setting a one-year specification with some sort of level of uncertainty and basically telling them to do it over and we'll revisit later on when we have some guidance, but until then you need to – I mean, if your scientific uncertainty has uncertainty around it, we all know where this is going.

MR. CARMICHAEL: I think there is a second question to be posed. If the answer is no to the question of do you have everything that is available; if so, then you're ready to move on. If not, you have to ask, well, what is the holdup and can we get it before we have to make a decision; and if the answer to that is no, then I think, well, then what we have is what we've going to have to make the decision, and we may need to make a decision and contingent this is good for a year, this is revisiting what we've asked for.

I think if you've asked for it and you have not gotten it, at some point it is coming to the end of the line and the buck can't be passed any farther, and that point may very well April. We're probably not going to get more because you can't get but so much out of it, so what do we do

with what we have? You know, maybe talking through Spanish mackerel was a good way because you know you have all that you're going to have.

DR. BARBIERI: In a way if we have time and if Gregg says, well, getting this recommendation in April will be acceptable and would not be disruptive to the council process, we might want to wait until then if we have an SSC meeting scheduled. I don't really recall what our 2010 meeting schedule is. Through the National SSC Meeting, their working group for data-poor species was developed and a few things are going to be evaluated, number one.

Number two, because everybody is scrambling to really find out how to handle these issues, so I would guess that in a few months we're going to be in a difference place; perhaps not where we want to be, but we're going to have a better idea in terms of making a recommendation that is a little more thought out.

DR. BOREMAN: I think we need a Plan B, though, in case we get to April and we're sitting around in April doing what we're doing today; we didn't get what we needed, the Center had a crisis, some stock crashed in the Gulf and they all are redirected – it could happen. I think Plan B would to look at what we term in the Mid-Atlantic as ad hoc measures; measures that are not based on OFL but go back and look at landings' data, see when the landings' data looked as though it was supporting an adequate biomass, and coming to the meeting in April with some options for the SSC to look at that are not OFL-based.

DR. BARBIERI: John, perhaps I wasn't clear enough. The idea is between now and then we would evaluate and come up with a list of different types of approaches that could be used and list them hierarchally from the best to the most ad hoc, but that we would have in front of us for the April meeting a suite of options that we could go down the line; and if we don't have what we actually were hoping for, we can still produce something based on those other methods, but that's exactly it.

DR. BELCHER: Further discussion? Again, with homework tonight, just be thinking about consensus. Like I said, I pretty much gave you what I had down for notes relative to this, but we do need to come up with something as to what we're going to project to do in the interim, I guess. Again, we're still kind of stymied as to how we're going to give a recommendation; correct? Matt.

DR. CIERI: Have you guys given a recommendation on those fisheries before?

DR. BELCHER: Probably many moons ago.

DR. BARBIERI: For mackerel and Spanish.

DR. CIERI: When?

DR. COOPER: No, it's not overfished.

MR. CARMICHAEL: You had given ABC recommendations on Spanish mackerel back with the last assessment in about 2002. It might have been the last recommendation from the SSC.

DR. CIERI: Never mind, then.

DR. COOPER: With regard to Spanish – and this may be more detailed than we want to talk about right now – what we weren't comfortable with was the absolute estimate of biomass, but we were comfortable with the ratios relative to, say, SSBmsy. Remember that's why we were able to talk about overfished. If we're comfortable with ratio of current abundance to SSBmsy, if we could make some decision on SSBmsy relative to virgin, then that big thing that we need from McCall is actually something we could talk about, because we're actually pretty comfortable with SSB in 2007 versus SSB – or Erik is shaking his head no, we weren't comfortable with that? I thought it was the ratios we were comfortable with.

DR. WILLIAMS: It is the overfishing ratio that we were comfortable with but not the overfished ratio. So, the conclusion was that the stock was not experienced overfishing and that's where it stopped short then.

DR. COOPER: So, Madam Chairman, should we dedicate some time during our comprehensive ACL to figuring out what our control is?

DR. BELCHER: We probably should discuss it.

DR. COOPER: And actually block off a considerable amount of time for debating control rules for species which we don't have abundance or even ratios available.

DR. BELCHER: We'll have to look at the agenda and see where we're at with it and we can talk about it. We can definitely discuss it this evening and see what we can do. Okay, I think we're still at the same point that I was at before relative to what our recommendations are. We're kind of stalled until we can figure out what to do in lieu of not having an OFL.

I'm sorry it's 6:30, but we're going to try to wrap this up. This discussion is pretty much germane as to what the last two species have been, too. So relative to cobia, specify OFL and ABC for the Atlantic cobia. I guess we run through the questions.

MR. CARMICHAEL: Yes, do you have all that is available?

DR. WILLIAMS: Well, the stock assessment that is being referenced in here was a stock assessment of the Gulf stock, so there is Problem 1. We're on the wrong coast, I guess.

MR. CARMICHAEL: And there is an assessment scheduled of cobia in 2012 when we do the coastal migratory pelagics, so more would become available, but it's not until 2012. What you have before you now is probably all that you can expect to get unless the Science Center can run through something else between now and then.

DR. WILLIAMS: But we don't even have a landings' time series before us or an average landings. We've got nothing. Now, clearly, we can't work off of nothing.

DR. CIERI: Well, you can. People won't like the answer, but we certainly can work off of nothing, and we all know what 75 percent of nothing is.

DR. REICHERT: I was going to make the same remark. Even after a stock assessment, I doubtful if we have much more information than we have now.

DR. WILLIAMS: Just to summarize, I don't know if this will help anybody, but my perspective is we almost have what we need for king mackerel. We have what we're going to get for Spanish. Cobia we've got nothing. These are quite different.

DR. COOPER: Does a landing stream even exist and it's just not in front of us, or is it one of these it's going to take them six months to get a landing stream.

MR. WAUGH: John, the SSC request was forwarded to the Center for these landing streams for all our species that don't have stock assessments. Have we received a response to that yet?

MR.CARMICHAEL: We haven't received a response yet. They have received the request and have discussed it internally, I suppose, but we haven't received any response that I've seen. I don't believe that Bob or anybody has gotten one in that I haven't seen. I think we requested a reply by sometime in November, if I recall, maybe the 19th or something, hoping to get something for this meeting.

For cobia we do have landings, that basic type of information. There may be ages and lengths that we wouldn't have as readily acceptable, but probably through a request could be available for something like April if you thought something like that would be helpful, but that's probably the extent of it, lengths, maybe some indication of age samples collected and then the landings. I'm not aware of any labs that are actually reading cobia age structures. You guys are; you have done some?

DR. REICHERT: Yes, Mike Jensen's group has done some.

MR. CARMICHAEL: That would probably be what we could have in reasonable order for April.

DR. BELCHER: I don't know if this should be on the record, but Chris Kowanowski in Georgia; did he do age and growth as well? He just did his master's thesis, but I was thinking it was some sort of population dynamics of cobia in Georgia, too, so that might be something from us.

DR. REICHERT: But no matter what, I think it's relatively limited in scope.

DR. BELCHER: Yes. So, again, going back through, relative to cobia, then, we can't give advice on OFL or ABC because we don't have a current assessment of the South Atlantic stock and we would need to look at a landing stream, which we haven't seen yet. Andy.

DR. COOPER: And we need to figure out what to do when we have the landing scream.

DR. CIERI: That is what I was going to say; once we figure out what to do when we only have a landing stream, then we will apply that to cobia.

DR. BARBIERI: Well, that's why I was suggesting if we have the flexibility to wait until April, we may not be there yet but we'd have a much better chance that we're going to have some game plan; I mean, what John had brought up, some options that we can draw from to address this. For what it is worth from the National SSC Meeting, Jim Berkson proposed putting together this working group or subcommittee that would be looking at the date-poor species.

He has released the terms of reference and e-mails continue flying every other day, so action is being taken. His goal is to have something at least in draft format for presentation at the National Stock Assessment Workshop in May, so I would imagine that there will be enough done between now and April for us to have some guidance from them besides us looking at our own different types of things that out there.

DR. BELCHER: Further comments or discussion? Everybody feel comfortable with where we are relative to the requests under the mackerel today? Matt.

DR. CIERI: Well, I feel comfortable that we've gotten done what we've gotten done, but do I feel comfortable about all this stuff? Oh, God, no!

DR. BELCHER: Well, relatively speaking I just mean as far as our discussions today is there anything? We'll draft some ideas of the consensus that we've arrived at, what our requests are, and we'll review those in the morning. We will start at 8:00 in the morning so we'll have 30 minutes to go over that. I just want to give us that extra 30 minutes, and I'd like for us to review it before we start into 17A tomorrow. We will go ahead and just recess for the evening.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Sheraton Atlantic Beach Hotel, Atlantic Beach, North Carolina, Monday morning, December 7, 2009, and called to order at 8:00 o'clock a.m. by Chairman Carolyn Belcher.

DR. BELCHER: We'll go ahead and get started this morning. What we're going to pick up with is looking at the consensus statement that we drafted last night. We had originally drafted something under the cobia recommendation, but after discussions between Marcel and Erik this morning, that language got wiped so we could discuss it as a group again this morning. If I captured anything wrong, just correct it and let me know.

MR. CARMICHAEL: What do mean by measure of recruitment and did you mean the updated projections should be taken into account for recruitment?

DR. CIERI: I mean whatever measures of recruitment there are for that particular stock. For example, if it's an index, if it's catch for the fully recruited at age for an age structure, that type of stuff, whatever you've got.

MR. CARMICHAEL: Just to look at and not be included or anything?

DR. CIERI: Exactly, because if people are suggesting that there has been an increasing recruitment, you want to see if it's captured within the data.

DR. WILLIAMS: If we're asking them to update the projections, then shouldn't OFL be changing as well because OFL when it's expressed in pounds actually becomes an annual value because it's dependent on the projection.

DR. BELCHER: So we make that sentence to be that we can recommend an OFL level; however, to be the most current values we need the following? Andy.

DR. COOPER: Since we seem to be focusing on making sure we're documenting our decisions and stuff, I'd recommend that we add OFL based on Table 3 as included in the Attachment 18 or wherever that is from so that they know why we can do it as opposed to just saying we can.

MR. CARMICHAEL: I suppose that's a question then as a point of clarity, there is the yield at Fmsy which comes straight out of the assessment, which is in Table 2, and then there is the yield at F 30 percent SPR, which is an average, and they're about 0.1 million pounds difference, so which is it that you would recommend as the OFL?

DR. COOPER: Well, to be clear that table is not yield at Fmsy; it's yield as a proxy for Fmsy; and F 30 percent, that time series is based on the yield for the proxy at Fmsy, and the question is which number do we pick, which is not necessarily the average, but simply we're saying we could pick a number, but since we're running new projections, as Erik pointed out, let's get the updated numbers anyway, but just so they know that a number does exist, here is where you can find it. However, with updated projections we might as well get updated numbers.

MR. WAUGH: I would suggest you put a date that you want this information by, and I would hope that we're talking about in preparation for your April meeting so that you could use it at your April meeting to give the council recommendations; so back up from that as to when you want it and put a firm date in there.

DR. CIERI: You know, this is a wish list. This of this stuff might be a tall order to get done by April; and let's be clear, we're going to go with what we've got in April. We're getting a number based on whatever we have in front of us at that April meeting.

DR. BARBIERI: Would it be unrealistic, then, to ask to have this by the end of February so they have the month of March to get this out to the SSC before the April meeting and everybody can digest it and be ready, the recommendation ready.

DR. BELCHER: Is that a reasonable request or not?

DR. WILLIAMS: It's somewhat reasonable, but let's give the analysts as much time as we possibly can. Is the meeting in April in the middle, the beginning or late. Let's say the middle of March then.

DR. CROSSON: John, do we have to have ABCs set for everything under the council's jurisdiction so that the council can move forward at that April meeting?

MR. CARMICHAEL: Yes.

DR. CIERI: And, again, it's critical for the council to make a decision over what time horizon they would like these set.

DR. BELCHER: That was one of the things that we asked for was a multiple year projections for them to determine, but we were –

DR. CIERI: Right, but hopefully by the time we get to the April meeting somebody can figure out how long they would like to set their time horizons for the specifications. Is that what we were discussing yesterday?

DR. COOPER: Yes, the point being they shouldn't have to choose a time horizon in the absence of the costs and benefits of those time horizons; and so by showing them the effects of choosing different time horizons, they could say we want a two year versus a three year versus a five year, and they look at the uncertainty penalties associated with it. Then they can make informed decisions.

MR. CARMICHAEL: You're asking for a one year, a two year, a three year up to ten or like a one year, a five year and ten year? This might get you a one year and a ten year? How do you see this time horizon working and thinking about the treatment of the uncertainty in carrying that forward and your discussions yesterday about how the P-star represents the cumulative probability of a particular thing over the time horizon that was analyzed?

DR. BARBIERI: John, didn't you say that the highly migratory are supposed to have an assessment or an update in 2012?

MR. CARMICHAEL: Yes.

DR. BARBIERI: Well, that should define the time horizon right there, right?

MR. CARMICHAEL: 2012 would be completed and essentially to the councils in early spring of 2013.

DR. WILLIAMS: I was going to say the exact same thing Luis just said, so let's have a one-year projection at a minimum and then however many years until the next assessment and then maybe one more if we want a long-term projection just to see what the effects are.

DR. COOPER: Erik, how much extra effort would it be per – I mean, are we talking a day or five minutes are?

DR. WILLIAMS: I don't know. My shop didn't do this assessment so I don't know what would be involved in it or how easily they can do projections for this assessment. I suspect it's not too difficult.

DR. COOPER: I'd say again for just as a case study so we can learn the effects of different time horizons, more of those years would be better not necessarily because we need them for this particular one, but as a case study of what happens – how are these things going to work out for different ones so when we go down the road we have a little better gut feeling at least for what happens when you do a five year versus a seven year or a ten year. I would like a single year, 2013, then maybe one in the middle between a ten year, just again to give a little – if things are bouncing around a bit, we could see what is going on.

MR. CARMICHAEL: You don't address the probability; would you like a full suite of probabilities for all of these or do you have a probability in mind that you can select and recommend that they target?

DR. BELCHER: Until the control rules technically we have that probability.

DR. COOPER: Yes, so I'd say whatever the control rule is plus a couple of others around it because the people are wanting to choose ACLs based on probabilities. They want to know what their ACL recommendation will be relative to our ABC recommendation, et cetera, et cetera.

DR. BELCHER: Does that pretty much capture it? Anything else relative to king mackerel or is everybody pretty much happy with that consensus statement relative to those recommendations?

DR. WILLIAMS: This is sort of side issue, but I'm assuming when we make this statement – this is more directed to John – that this is just going to get translated into a memo to the Center to ask for this to be done. Are you going to be sort of point of contact in case there are questions? I just want to make sure you're kind of clear on what we're asking for so that if you have to translate this a little more for the analyst, that you can kind of clarify for them.

MR. CARMICHAEL: Yes, I expect I would and then if I have any questions, Carolyn and Luis would be the backups on that, but, yes, I think I'm pretty clear on what you guys need.

DR. BUCKEL: Yes, this is fine. Part of the conversation yesterday – and Luis might have brought this up – is that we had said that we were happy with everything before and now we're asking for more, so maybe that memo should say based on the control rule that was developed after our decision about mackerel – and that doesn't have to be included here necessarily, but see what the group thinks.

DR. BELCHER: Is everybody happy with that just to make sure that point of clarification was there? Okay, so now following up with Spanish mackerel, comments and points needed to be added or taken out. John.

DR. BOREMAN: You may add something in the last sentence to show that we need the MSY estimate to estimate OFL. We can't estimate OFL and it sounds like, oh, by the way, we also want your Fmsy estimate, but it would be helpful to have the MSY estimate in order to estimate OFL.

DR. WILLIAMS: My concern here is that we're basically punting because we're waiting to better develop our ABC control rule to handle these landings-only situation. When and how is that going to get done? It seems paramount to decide that before we make this statement here. Otherwise, maybe we need to make a decision here about Spanish mackerel now rather than punt it.

DR. CIERI: We have landings, correct, for this species? There is no analytical assessment, right; or, there is but the biomass was rejected. We're not going to get an MSY for this species as it stands currently, right, so we're going to have to run with basically a biomass proxy or whatever Fmsy we can derive.

DR. WILLIAMS: I don't know; I disagree. I think we actually have what we need in front of us to actually go forward, and that is that the statement from the assessment was that they were pretty clear that overfishing was not occurring. Given that statement, we could take landings in the recent years and assume that they're at MSY or at least slightly below MSY and move on from there pretty easily.

DR. BELCHER: So do we actually recommend that value then and what is it?

DR. WILLIAMS: Well, again, this goes back to do we want to push ourselves to do this at this point in time or do we really think we're going to have a meeting or some time where we're actually going to flesh out a better update to our ABC control rule where we'll actually discuss this in a little more formal manner or not.

MR. CARMICHAEL: We have that on the discussion for later this week when we talk about the Comprehensive ACL Amendment with the thought that if you talk about your approach at this meeting you're in much better shape to implement your approach come April. I think we need to have that discussion this week. I think it's very paramount that we have that discussion this week. Maybe we have this discussion for Spanish mackerel and people start forming ideas about how to deal with this for the species that are right on its heels that have far less data.

DR. COOPER: Well, I agree with Erik, and, yes, I was under the assumption we would be doing this under the ACL Comprehensive one, but if we want to do it now, either way I think our methods need to be done so we know what to ask for in April. As John said, our Plan A was this; Plan B was what is going on with that National Subcommittee Working Group thing; and then Plan C, if that doesn't come out, what are we going to do in April?

I think we need to have a plan for it and whether we talk about it right now or do it during our Comprehensive ACL, I think that's up to when we need to make a report, et cetera, et cetera, but I think that needs to be done at this meeting and shouldn't be pushed off any further.

DR. BELCHER: Well, we have to give the report to the Mackerel Committee tomorrow at 1:30, just to give everybody an idea of what we've got. I guess the question is going to be, then, do we have an idea of what we want to put out for Spanish; and if not, is it going to require us taking a lot of time to talk about it? Again, to me it's kind of one of these things that it's a targeted discussion relative to Spanish, but it also has a larger implication to everything else, so we're actually going to get more mired up in the process at that point. Matt.

DR. CIERI: I would suggest have this discussion under the ACL. As a discussion in general, we'll use Spanish mackerel as a test case. As far as what to tell the committee, it's basically you really can't do an OFL as biomass directly from the assessment. We've got to do something with landings. We haven't figured out what that quite is yet. We'll get back to you by April.

DR. BELCHER: John's question is do we need this sentence in there? If we're basically encapsulating that, do we need that latter part? Erik says no. Okay, so we will talk further about this with the ACL. Andy.

DR. COOPER: The other thing to note is our fearless leader is making a presentation on 17A at 2:30 p.m., Tuesday.

DR. BELCHER: Is everybody okay with the language then for that consensus statement? Again, we will revisit specifically the Spanish mackerel when we get into the ACL discussions for the control rule. Okay, lastly, we're talking about cobia recommendations. Cobia, our understanding was that the data wasn't there to support an assessment.

After talking with Erik this morning, it was more clarified that we do have the data for the assessment. It's just not going to be to the level of what the current assessments are; correct? And we're being asked for OFL and ABC recommendations for this fish, so the question then falls as to how we give those numbers. What is our statement as to why we're not providing the numbers at this time? Andy.

DR. COOPER: I think we can pretty much cut and paste from Spanish mackerel directly to cobia. We don't have the information at hand nor have we come up with a control rule and we're going to discuss it under the ACL.

DR. WILLIAMS: Well, I think it's a slightly different situation because in Spanish we actually have an assessment done, which has all the landings and time series, everything we need right in front of us to do this, but cobia we don't have that. We don't even have a landings' time series for the Atlantic put together, so we would need that.

DR. BELCHER: So, again, working towards providing them some guidance on OFLs and ABCs, obviously, we have nothing to go off of. We can't provide numbers but are we going to provide something? Matt.

DR. CIERI: I guess my question is that the stock is scheduled to be assessed in 2012. We have to provide recommendations on OFL before then? There is no current assessment? Wow, that's a whole lot of uncertainty.

DR. REICHERT: But, again, it's another scenario that we may have to deal with, so in that respect we may be able to copy some of the language from the Spanish mackerel because this is just another scenario that we will have to discuss during the discussion of how to set ABCs.

DR. WILLIAMS: At least with this one we've got a pretty good indication that the species' identification in the landings is okay. Wait until we get to some of our others.

MR. CARMICHAEL: Well, there are two phases to the ABC deliberations. The first is how you get from OFL to ABC. That's your control rule and its buffer, whatever that is interpreted to be. Then the other part is getting to the OFL. Spanish, you have the information there to potentially derive an OFL.

Cobia, you don't and cobia falls into that box of all the other species that haven't been looked at. Maybe some information comes out of this workgroup from the national meeting that helps everyone to figure out how to go from landings to some reasonably defensible OFL. But in cobia we have to start there; it started in a much earlier spot than we have to do with Spanish.

DR. CIERI: I guess I'm a little confused on what is the time horizon for something like cobia? It's got to be in place by 2011; right? My understanding is that sometimes it takes six or eight months for things just to be approved. That doesn't give you a lot of time from the time that we do something in April to get it into the National Marine Fisheries Service and get the ball rolling before the January 1st implementation date. Do you know what I'm saying? We should have probably had this conversation a while ago.

MR. CARMICHAEL: We've been having this conversation for three meetings now. We at one point wanted all of these recommendations last December, so now we're into April 2010. I think the buck truly stops in April 2010. I'm not sure it can go any farther than that and have you guys actually do what you mentioned the Act requires that you do yesterday.

DR. CIERI: That's it; April it is and we're going to go with whatever we've got in April for making a recommendation.

MR. WAUGH: In terms of the landings' data, do you want provide some guidance on how they should be compiled? Right now it's Atlantic and Gulf; they're managed together. Do you want the landings compiled by states? When the assessment was done for the Gulf, they used the Miami-Dade/Monroe County Line. Do you want them broken out by that? The council is considering that boundary and also the South Atlantic/Gulf Council Boundary. Do you want them broken out by that?

DR. COOPER: Yes, learning from our king mackerel, let's not even talk about what data we need until we have a control rule, because otherwise requests go forward, people take a lot of time just to get things the way we say we need, we develop a control rule, it doesn't match that, we have to turn right around and say actually this is what we need now.

I'd say let's not talk the details of this until we figure out our control rule because we don't want the analysts to be doing a whole bunch of work that they don't need. Let's focus on getting this control rule set up and move forward on that, and then we'll know how to break out the data, whatever we can get.

DR. BELCHER: Further comments? Does the language under the recommendation, then, capture what we want it to say relative to the consensus?

DR. COOPER: Only to add in there that during this meeting we're planning on developing a default control rule that can be applied in April; that we don't to just say, oh, magic will happen, because hopefully we can, during the ACL discussion, also talk about date requirements and so all this can go forward.

MR. CARMICHAEL: Do I need to say that in the consensus statement for cobia?

DR. COOPER: I would assume the council would be happier knowing the various steps that we're making along the way to give them the information they need rather than just simply saying you'll have answers in April.

DR. BARBIERI: Andy, I hate to volunteer us to do anything, but since we are in that – you know, the working group that was set up at the National SSC Meeting – perhaps we can put together some compilation; just having a list and summary of the different approaches that are being used by different SSCs. It would give this committee some guidance and perhaps better organize the discussion for April. Maybe we can extend some e-mails, you know, just get the ball rolling so when we get to April we can hit the ground running.

DR. COOPER: Yes, that would be great, but as others have said and I've said we need a default measure that if all of a sudden everyone gets too busy, the subcommittee doesn't decide a damned thing, in April we need a control rule. Sure, let's talk about all the various methods that everyone else is using. I think as a committee at this meeting we need to come up with – if we have to make a decision and no one is going to be able to get us anything else, here is how we're making our decision, period.

If more information comes down the road, great, we can incorporate that, this isn't the final determination. I think we need a stopgap measure so that come April we can make decisions no matter what else is happening. And as Matt said, we will the information that is right in front of us; and if better information exists elsewhere, well, hey, we told you what we needed. I think in April we need to be able to put numbers on the page and say moving forward; and so at this meeting, regardless of what other information we can get, we need to come with something that we will feel comfortable with.

DR. BARBIERI: Andy, this would be a compilation that would give us all these different options. We step into the April meeting with a number of different options from options that involve more sophisticated data and estimates to the fallback that we need at the bottom of that pile, but at least we have an array in front of us to pick from. Unless some of the folks here have already some ideas to put on the table and how that compares to some others, that way we could do it here.

DR. COOPER: Keep in mind in April we need numbers. We don't need just the control rule, which means we need to have these decisions made and the data request put out and the data presented to us. I know from my experience that, sure, I'll get that manuscript submitted by April 1st; and, well, okay, maybe it's September. We can't afford to do that; and so, again, yes, it would be great to be able to have a nice long debate.

We have been dillydallying around this for a while now. I think we need this is the line; if we have to make a decision tomorrow and have the information, here is the control rule. And, yes, we do all these wonderful things, but as hopefully we all know, stuff happens, things get pushed; and if we don't have a nice drawn-out list and the time to debate it, time to get the data, time to crunch the numbers, apply the control rule – you know, even before when we were talking about, well, we need the catch series, there was debate about, well, should the SSC be the one actually taking those catch series and turning them into numbers or do we just provide the roadmap and analysts do that? So, yes, it's fine and dandy to have a list and description by April but I think we need more than that by the end of this meeting, and the list would be great.

DR. CIERI: With the understanding that the less we have the more precautionary it's going to be.

DR. BELCHER: So is everybody happy with the consensus statement, then, as we have it under cobia, coming back to it? John.

DR. BOREMAN: I think the second sentence needs to be strengthened. The way it reads now it looks like, yes, we're going to think about this again in April. I think what we need to say there is we will provide an ABC recommendation in April based on the information that we have on hand at the time.

DR. COOPER: I would say the greater the uncertainty as opposed to precautionary.

DR. BELCHER: So is everyone happy with the language at this point? Okay, so these will stand as what we will have for our consensus statements, then, for the mackerel portion of the report. Again, anybody that has notes on critical discussion points, it would be appreciated so we can add some of that into our report. Okay, with that stated we should be able to move into 17A, Rick.

MR. DeVICTOR: What I figured is I would give a refresher on the actions in Amendment 17A. I have given similar presentations in June when you last met. I went through the actions, also, last year in December. This is actually a hybrid of the presentation I gave at public hearings. We just got back from public hearings in early November, and at that time I went through the need for action and the stock status – and, of course, we're talking red snapper here – and the need to end the overfishing and rebuild the stock since it was determined to be overfished.

Then I went through the alternatives, the proposed solutions, the anticipated effects and the timing. Here today what I'll do is I'll go through the alternatives again as a refresher, and then I'll touch upon the timing of the amendment and where we are. There are four categories of actions for red snapper in Amendment 17A.

The first one is specific maximum sustainable yield, and I'll go through those alternatives. The second category of action is to go through the rebuilding plan. As you know, it's required by law to specify a rebuilding plan when it is determined to be overfished. Really, there are several actions within this one action, and that's the rebuilding schedule, the strategy, the optimum yield and accountability measure.

The third category of action is to specify the management measure, and that has to do with the closures that you've seen before – I'll touch upon those – and finally the monitoring plan, how is the council and NMFS going to monitor the recovery of the stock? So, first, touching upon MSY, again, here is just a brief overview of the actions.

As you know, we're required to have the no action alternatives as required by NEPA, so we always have an Alternative 1. What is on the books right now for red snapper is specify F 30 percent SPR as a proxy for Fmsy. You've talked about this as length before in past meetings. Alternative 2, which is the council's preferred alternative, is to state MSY and Fmsy as defined by the most recent SEDAR/SSC.

There is a note the review panel from SEDAR and SSC recommended F 40 percent SRP be used as an Fmsy proxy. This is important because this decision is carried on through the amendment. For example, when we get to the rebuilding strategies is that those projections are run around F 40 percent.

Okay, next, moving on to the rebuilding plan, as you know, a rebuilding plan is a plan to recover a stock sustainable level of Bmsy within a specific period of time. Two components to this that we have in the amendment is the rebuilding schedule portion, how fast do you intend to rebuild the red snapper stock, and the rebuilding strategy portion.

Here are the alternatives again. Alternative 1 is the no action alternative. Alternative 2 is Tmin, 15 years; Alternative 4 is actually Tmax, so that's ten years plus one generation time of red snapper. Then in between that, halfway in between, between two and four, is Alternative 3 and that's 25 years. The council's current preferred alternative is to use the maximum amount allowed by law and that's 35 years to rebuild the red snapper stock.

They have been on record stating that due to the cumulative effects of past action, so the 15As and the 15Bs and the 16s and 17s, those regulations; also, due to the severity of the actions required in the amendment, the closures, the size of the closure and such, so they have been on record stating they would like to use the maximum amount of time allowed by law for those reasons.

Going on to the strategy, which is a separate action, actually, but you can see you use your maximum – you use your rebuilding timeframe decision, and that's 35 years – you can see that going up the side there – and then this is basically your projections and how fast are you going to rebuild you stock.

You can see Year One would be 2010, and there were some comments from the public that should be 2011, and I'll raise that with the Snapper Grouper Committee. But Year One is 2010, and you can see that according to the projection 79,000 pounds would be the ACL for red snapper in Year One, so that's how many red snapper you can kill in Year One.

Now, some notes on this preferred rebuilding strategy, this would set Foy equal to 75 percent of Fmsy, and here are the alternatives in the document. This is just the preferred, but there are alternatives for 65 percent of that, 85 percent of that, et cetera. We'll talk a little bit more about this idea of – well, first of all, F 40 percent, as I said, is carried on through and that's used as a proxy, but this idea of using very high recruitment in 2006 in the projection.

We'll talk about that in a few moments in a separate agenda item when we talk about the projections, but we're certainly looking for some comments on the use of very high recruitment in recent years. And then, of course, there is an 84 percent chance of rebuilding to SSBmsy in 35 years. So, again, that's the Tmax.

Okay, moving on to management measures, how are we going to end overfishing of red snapper in the South Atlantic? As you know, we talked about the preferred alternative to prohibit all harvest, possession and retention of red snapper year around in the South Atlantic EEZ, and then we talked about that that is not enough to end the overfishing of red snapper due to discarding that would be expected to be occurring, fishing would still be going on out there, it's a multispecies fishery, the 90 percent release mortality used for the commercial sector in SEDAR and 40 percent for the recreational sector, so a good portion of these fish would still die if you just prohibit red snapper.

In addition we're looking at these closures where inside of these closures you would not only prohibit red snapper, you would prohibit the 72 other species in the Snapper Grouper FMU. I'll

go through this, and I just noted this for the public pelagic fishing would still be allowed in those areas. I'll walk you through the alternative; you've seen these before.

Again, red snapper prohibited in the South Atlantic EEZ, but in these boxes you would prohibit all snapper grouper species. This is commercial and recreational and year around. The northern boundary is 32 degrees north going down to 28 degrees north in the south. These are commercial logbook grids, so these are roughly 60 nautical miles by 60 nautical miles, and these are four commercial logbook grids, essentially.

You can see I have on each of these the size of these closures and what percentage of the South Atlantic EEZ. The council does not have a preferred alternative at this time for closures. Staff will be looking for a preferred alternative at this meeting. Alternative 3 is a smaller closure. It's the smallest closure the council is looking at.

It uses the same northern and southern boundaries; however, it roughly follows the 98-foot depth contour on the western side and on the seaward side that follows the 240-foot depth contour. This alternative has reduced social and economic impacts from the last one we saw. It would allow fishing inshore. Particularly if you look at a map, there is quite a bit of inshore artificial reefs off the coast of Florida and Georgia, so it would allow fishing in those areas. This is just over 8,000 square miles. That's Alternative 3.

Alternative 6 is the largest closure the council is looking at. This follows from that first alternative we saw, the four commercial logbook grids, but adds three more going up into South Carolina. This closure is 26, 600 square miles and just under 14 percent of the South Atlantic EEZ. Finally, it uses the same premise that we saw before; again, the same northern and southern boundaries of that last alternative, but again that 98-foot depth contour and that 240-foot depth contour.

You have seen these alternatives before. This is a new alternative that you probably have not seen. The council added this in September when they met in Charleston. This alternative takes a different approach, and it doesn't put a closure out there to snapper grouper fish, but what it does is it prohibits red snapper throughout the South Atlantic EEZ, but between this area, which is 33 degrees north down to 28 degrees north, it would allow fishing by certain people, certain boats.

Those people would be chosen through a lottery system. If you recall, we went back to the 79,000 red snapper allowed to be killed. What would happen here is those people would be allowed to be fishing in that area. Once that 79,000 pounds is met, you prohibit all snapper grouper fishing.

Now, it's really not 79,000 because you have to take off the red snapper expected mortality from north of that area and south of that area, so you really get to about 25,000, so that would be a pretty short fishing season. But, again, it's a lottery system. The devil is in the details with this alternative. The council will be talking about this, how many boats would be allowed to go fishing in there, how would you set up this lottery system.

And, also, something, of course, that has come up is how would you monitor the discards of red snapper? Right now it's mainly through self-reporting that goes on, and certainly I think people will pick up on to the fact that, well, if what I write down is going to put in this big closure, then probably we'll get a large portion of people not reporting that they interacted with red snapper.

The council is looking at real-time electronic reporting, VMS, video monitoring. Again, I'll note the devil is in the details with that. They haven't specified the exact details. They have just have basically a laundry list of electronic reporting that could happen. So that's a new alternative; certainly, if you have comments on that, we are looking for that.

Now, I just want to briefly mention possible exemptions. Just as the council is not looking at a closure off North Carolina because of the low degree of interaction with red snapper, they're also looking at gears and gears that have a lower chance of interacting with red snapper. They do not have a preferred alternative at this time, but here are the alternatives that are in the document.

Alternative 7 – now we're talking about in this closed area, the closed area we were looking at, this closed area alternative – even though you prohibit red snapper and snapper grouper bottom fishing, but you would allow under, say, Alternative 7 fishing with black sea bass pots; or, Alternative 8 is fishing for golden tilefish.

That's mainly in the mud bottom, deeper offshore so you don't get a lot of red snapper with that. Also, this idea of allowing spearfishing; we've certainly heard a lot from the public on this, but the council is looking at allowing spearfishing to occur under the premise someone could dive there and not shoot a red snapper.

Of course, there are law enforcement concerns with all of these. The council is going to talk about it this week. This idea I'll bring up in a couple of slides; this idea of a research fishery using for-hire vessels, as I talked about, how to monitor the recovery of red snapper, so there could also be potentially a research vessel in this area.

Another action that the council added in September is to require the use of circle hooks. A lot of you know that circle hooks are required in the Gulf of Mexico Region. The council is looking at Alternative 2 to require circle hooks within the closed area. This closed area that there about is the one with the lottery program. Alternative 3 is require circle hooks throughout the EEZ.

They do not have a preferred alternative at this time. The idea here is research has shown for some species you're less apt to gut hook, so you could lower the release mortality rates of red snapper and other species by requiring commercial and recreational fishermen to use circle hooks. We're looking for feedback there if you have it.

Finally, in the monitoring plan; again I've brought this up a few times on how to monitor the recovery of red snapper. They have two alternatives in the document. One is to augment the fishery-independent program; largely MARMAP and such. Since you are going to be putting out these closures out there, you're not going to be getting that source of data coming in fishery-dependent data.

There was a fishery-independent workshop that we will hear a report on I believe at some point. That, of course, largely plays in this; you know, how are we going to monitor the recovery. And, again, how are we going to monitor recovery? Again, I brought up this idea of a research fishery using for-hire vessels.

There was a report put out by the Science Center, which is an appendix to Amendment 17A in your briefing book materials. It's called "Research Monitoring Plan", and it largely looks at retaining the headboat CPUE and how to do that. The council has that action in the amendment, but, again, the devil is in the details. We don't have a lot of details with that, so we're going to be asking you for possibly a more firm recommendation on this; could this work in the South Atlantic or not?

Here is just a slide I put together, thoughts for you guys, maybe what you want to talk about. First of all closures and AMs; are the closures sufficient to end overfishing of the red snapper stock in the South Atlantic; and in terms of AMs, are they appropriate to prevent the overfishing from occurring?

I do not show a slide on the AMs under consideration. We can go through that in the document and I can show on the screen what the council is looking at. But, again, that's the challenge the council is dealing with for speckled hind and warsaw, for example, how do you put in an AM for species when you're not allowing harvest to occur and also when you're not getting the source of data to come in.

Projections, you have talked at length about the use of F 40 percent SPR as a proxy. I just highlight that here -- and this idea of very high recruitment in the rebuilding projection. New actions, circle hooks and lottery program, if you have any comments on that, the committee will be looking for any help with that; and, again, the for-hire research fishery, is it feasible?

That's the actions in the amendment. Finally, the timeline, this is just showing you the typical abbreviated council process. We just went out to public hearings. I will be summarizing the public hearing comments for the committee, so now we're in between the post public hearings and working on developing the final document.

We're looking for the council to pick preferred alternatives at this meeting. The schedule is to submit to the Secretary of Commerce in March. Under this schedule, it is feasible that this would be the last time you get to see Amendment 17A. That concludes my presentation.

DR. BELCHER: Thanks, Rick. Anybody have any questions or comments for Rick? Matt.

DR. CIERI: The MSY proxy is a council alternative? You're kidding, right?

MR. WAUGH: There is one aspect of this that should be clarified. Up until now the council has – pre this reauthorized Magnuson Act the council has specified MSY. What we did in Amendment 16, to comply with Magnuson, we went in and we had as an action item changing

our existing MSY. What we did was we put in language that would adopt whatever MSY came out of the peer review SEDAR process. That's what we did for Amendment 16 for gag and vermilion. That's one part of it as to why it has to be an action item.

What has gotten tangled into red snapper is considering a value that did not come from the peer review process, and that is what is a little different. Each time we address this now, it will be an action item at least once to change from the council specifying MSY to putting verbiage that whatever comes out of the SEDAR/SSC process, that will be the MSY.

DR. CIERI: I guess I'm way too confused because in general the council process, as far as I know under the new Magnuson Act, was that basically the SSC interprets whatever peer review makes an OFL and then an ABC and then the council process begins from there. Where does MSY fit in with the council process? I mean that's strictly a biological deal.

MR. WAUGH: Yes, and, again, just to try to clarify, the council has to change its existing MSY definition. In Amendment 16, the way we did that was to change it such that whatever MSY comes out of the peer review process would be the MSY that's used. Now, in 17A there is an effort to look at alternative values, and there is an argument being made that it is within the council's purview to determine the level of risk in specifying that value.

DR. WILLIAMS: And we can get into this more – I don't know if now is the time, but I completely concur with Matt that it should not be an alternative. It's not a council decision. We might as well let them decide natural mortality, too. This is ludicrous in my mind.

DR. WHITEHEAD: Is now the appropriate time to talk about all the analyses that we've been given for 17A?

DR. BELCHER: We've got Nick giving us talk on that and Erik has got a presentation as well summarizing some of what has been done, so if we can keep it for that point.

DR. WHITEHEAD: I can wait.

DR. COOPER: I don't know if it's a legal or a technical question. Under species that have a rebuilding plan; does the ABC control rule apply? In other words, do the options currently listed for fishing at Foy, whatever it is, that has to be less than whatever the SSC sets as an ABC, doesn't it, under the new Magnuson?

MR. CARMICHAEL: What you put in your control rule for rebuilding stocks was a probability of success at the end of the rebuilding time period. I take that as being the council has a lot of leeway in terms of what they pick as long as it achieves that long-term probability of success; also recognizing they are bound by not allowing overfishing to occur in any particular year.

You haven't commented on the probability of overfishing occurring in any particular year within the rebuilding plans. I suppose you could, but I think the fact that they have to have at least a 50

percent chance that it doesn't occur, and they're also bound by the long-term rebuilding, so that may not necessarily be necessary in this case.

MR. REICHERT: Well, I'm a little confused. Would you just repeat that with maybe in some other wording?

MR. CARMICHAEL: I guess the simple answer is no. The end product of a stock that requires rebuilding from your control rule was the probability of rebuilding occurring with the allotted time, and that is derived much the same way that you derive the critical value for your annual overfishing level.

Then you set ABC, then, for rebuilding stocks is whatever rebuilding strategy the council chooses within that timeframe. The last part of that is recognizing that the council is bound by overfishing not occurring in any of those years. So, ACL equal to the OFL would be the most liberal they could do in any particular year, but they can only do that if it fit within the long-term rebuilding plan, also, which in most cases it very well may not. But you did not pick an individual ABC each year for a rebuilding stock; you focused on the long term.

DR. WILLIAMS: Again, I think this will come up again later, too, but just to clarify in Andy and Marcel's mind some, the issue here is that we have looked at projections, but we haven't looked at them in terms of our ABC control rule yet, so we haven't looked at probabilities of success from these projections that have been put into this amendment. I think that's the issue that we haven't directly looked at yet, so I think we still have to look at these projections in context of the new Magnuson and then our new ABC control rule.

DR. BELCHER: Further questions or comments relative to Rick's portion of the presentation? All right, the next presentation that we have up is Nick Farmer giving us the current status on area evaluations.

DR. FARMER: I'm going to talk to you guys the modeling approach towards estimating the effects of Amendments 13C, 16 and 17A on red snapper removals in the South Atlantic. I'll be talking about the sensitivity of this model to variety of input parameters and have a little bit of discussion of what might be reasonable assumptions there and then be looking to the SSC for a little guidance on appropriate input parameters for this model.

As an outline for this presentation, I'm going to give you a little bit about the objectives and goals. We'll talk about baseline removals and how they were estimated. I'll talk about Amendments 13C, 16 and 17A and their impacts on red snapper reductions; discuss release mortality, spatial closures, specifically bathymetric closures – that will be new information that the council did not see when I presented this in September – and a little bit on temporal closures and compliance.

The objectives of this modeling approach were to evaluate the effects of Amendments 13C, 16 and 17A and also to explore the sensitivity of this model to assumptions regarding spatial and temporal distributions of the red snapper stock, release mortality rates and compliance. The

goals were to explore the possible mechanisms to achieve legally mandated reductions in red snapper fishing mortality and to optimize the configuration and duration of closures to minimize the adverse impacts on fishing communities.

This is a flexible kind of dynamic management decision-making tool that I'll be presenting, and the goal basically was to put the power in the council's hands to explore a variety of alternatives and try to come up with an optimized solution. We computed baseline removals and we've provided, I think, five papers to the SSC that you're reviewed previously, but we used 2005 through 2007 to compute baseline removals.

This is a table of the breakdown of those removals by fisheries. L represents landings; D represents discards; and R represents removals. Those are in one thousand pounds. The sources for this data are the commercial logbook which is reported to the Science Center, MRFSS information and then also the headboat, which is part of the Science Center.

Under your council's current preferred alternative, an 87 percent reduction in these removals from this total removal baseline of 602.9 thousand pounds would be required to end overfishing of the red snapper stock. A summary of the things that we've presented to you previously in June and in September on the impacts of previous amendments; for the commercial fishery Amendment 13C had minimal reductions, maybe about 1 percent; Amendment 16 gave you slight reductions, about 16 percent; and the various alternatives in Amendment 17A provided substantial reductions and range from about 8 to 88 percent.

For the headboat fishery, Amendment 16, slight reductions, from 1 to 8 percent; 17A, somewhere on the range of 37 to 87 percent, depending on which alternative you choose. And then the recreational fisheries through the data derived from MRFSS, Amendment 16 provided minimal reductions, about 2 percent; and substantial reductions for 17A, on the range of 49 to 91 percent.

You get greater reductions for 17A coming out of the recreational fisheries because your discard mortality is much lower. It's 40 percent rather than 90 percent for the commercial. Your release mortality rates are estimated by the SEDAR 15 document, or I guess guidance is provided by the SEDAR 15 document for those rates of 40 percent for the recreational and headboat fisheries and a very substantial 90 percent for the commercial fishery.

There are a variety of factors that contribute to release mortality, including fishing depth, the surface interval and handling of the fish, the location the fish is hooked, predation after the release of the fish and water temperature. Barotrauma is the major source of release mortality and is directly related to depth of capture.

The thought process was that effort shifting into shallower water may actually occur following the implementation of the spatial closures that would be established by Amendment17A; in which case if the fishery moves shallower and barotrauma is the primary source of release mortality, you may see an associated decrease in release mortality.

Some studies have suggested that if the fish is caught in waters less than about 20 meters' depth, you may have a release mortality rate as low as 20 percent. It's difficult to predict changes in release mortality because the level and pattern of effort shifting in the fisheries following Amendment 17A implement is unknown.

Higher discard mortality rates will continue in open areas. The logbook data actually suggests the average depth of red snapper encounters may be deeper following closures. Delayed mortality rates also may be higher than those estimated by the SEDAR 15 process. There has been some work done since SEDAR 15 which suggests that the release mortality rates that you see at the surface and in most studies that occur immediately following may actually underestimate the long-term delayed mortality due to the barotrauma.

From the logbook I did a brief analysis and prior to the closures the average depth of fishing from the logbook for red snapper encounters was about 140 feet. The bathymetric closures, if you eliminate the landings that occur in the cells that would be closed by Alternative 3 and Alternative 4 that lists depths of red snapper catch between 98 and 240 feet, that actually only really changes the average depth of fishing for red snapper overall across the fishery by about plus or minus ten feet, so not a really substantial change like I was expecting.

The reason for this is that greater emphasis is given to deepwater landings that occur outside of the bathymetric closures, because you're eliminating some of these shallower water encounters with those closures. Specifically within the cells that would be closed by Alternative 6, so the seven-grid cell closure for 17A, the average depth of fishing within those seven cells for encounters of red snapper is about 133 feet prior to any bathymetric closures or anything going on there.

During this presentation I'm going to be referring to the current bathymetric closure, Alternative 4, as Alternative 4A. That's the closure between 98 and 240 feet. I'm going to present to you two other bathymetric closures that I'll be calling Alternatives B and C that have slightly different depth ranges, looking at a way of optimizing the reduction, so I'll get to that in a moment.

Alternative 4A, which is from 98 to 240 feet, will reduce the average depth of fishing within those specific seven cells to about 85 feet based on logbook data. Alternative 4B reduces this average depth of fishing to about 98 feet. Alternative 4C, which is a closure of between 66 and 300 feet, reduces this average depth of fishing to 61 feet. Of those, only Alternative C, which is the closure between 66 and 300 feet, pushed the average depth of fishing below 20 meters from the logbook data.

That seems to be a breakpoint in some of those studies that I have looked at in terms of where release mortality rates might actually drop. To talk about the spatial distribution of removals of red snapper, I've got a graphic up here of our baseline removals, so these would be the cumulative removals from the logbook, the headboat and the recreational fishery.

Then I ranked these by grid cells so that you can see which inlets are basically most responsible for the removals of red snapper. This is provided in the model that I've provided to the council as a way of looking at how they should optimize closures. If the goals, for example, were to be close as little space as possible without regards to distributing these closures across areas to minimize impacts on the communities, that sort of thing, then this would be basically a rank ordering of where the removals are coming from.

One of the things that was really tricky in terms of trying to figure out Amendment 17A would work is evaluating the bathymetric closures. They're challenging to analyze due to various limitations in the data, but I went ahead and did my best to do an analysis of the impacts of basically three different depth closures.

Again, in this graphic you can see what it would look like for Alternative 4A, and that's the striped yellow area there. That's the closure between 98 and 240 feet, and that's basically the council's currently listed Alternative 4. Then I looked at two different closures. What I'm calling Alternative 4B would close between 66 and 240 feet, and basically includes the yellow striped area and also that kind of sage green colored area to the left of it, so it incorporates a lot more shallow water.

One thing that you'll notice from that closure – and I'll have a close-up of this in a later slide – the kind of bright turquoise areas there in the south off the coast of Florida, those are red snapper spawning aggregation sites that were identified by a survey by Moe in 1963. You'll notice that Alternative 4B closes shallow water and also incorporates a substantial number of those spawning aggregations within the closure.

Alternative 4C would be a closure from 66 to 301 feet, so that would be from the yellow line bordering the green on the left of the image all the way to the yellow line on the right of the image. Then Alternative 6, which would be the full closure, is indicated by the navy blue squares. You can see that Alternative 6 actually closes a substantial additional fishing area that perhaps does not contain a high concentration of the red snapper stock, so my goal was to investigate whether or not that was indeed true or at least appeared to be true from the data.

In order to evaluate the bathymetric closures, I examined a variety of data sources. First would be the logbook, which I examined data from 2005 to 2008; 2005 is when depth reporting began in the logbook. You have data on area and depth for basically every record. You have some limited depth reporting in 2005, and I'll show where those limitations occur.

Some bad things about this data for doing this sort of analysis, which ideally you want to look at the distribution of the red snapper stock using some sort of fisheries-independent survey that would comprehensively sample the habitat and wouldn't have the kind of inherent biases of a fisheries-dependent sample, because it's targeting the stock is not going to sample areas outside. It might not give you a representative sample of where the actual geographic distribution of the stock actually is.

The logbook is self-reported. There are some problems with the area fished in the reports and there are definitely some problems with the depth fished in the reports because of that. It also may be a poor proxy for the recreational fishery which tends to occur in more inshore waters. I also examined the headboat data. There are area records in there and no depth records. The area records are often incomplete.

Especially off of Georgia there are some major gaps in the reporting there, and this sampling may not be representative for the commercial fishery. Then I examined the MARMAP data, and that has area and depth reporting. Unfortunately, the range of the MARMAP sampling is somewhat limited. A lot of the times there were not samples taken outside of the proposed depth range, so there was no way to evaluate whether red snapper occurred outside of it, which basically renders the analysis not useful. Also, the MARMAP Program historically used gears that don't sample red snapper very well.

Then I also examined the Moe Spawning Aggregation Survey of offshore fishing in Florida from 1963. Obviously, it's historical data. A lot has changed since 1963. It's only in Florida. Although it's labeled "Survey of Offshore Fishing", it really doesn't encompass a lot of deepwater fishing activities beyond about 240 feet.

In terms of evaluating the bathymetric closure using the logbook data, which seemed like the best available data source for this, in 2005 through 2008 you have a generally improving trend in terms of the reporting of depth. I examined the availability of depth records relative to the total percentage of trips. You can see in 2005 only about three-quarters trips reported depths.

Of those that reported depths, I also examined, well, within the grid cell that they said they were fishing in, what is the actual distribution of depths in that cell and does the depth they report this fishing activity occurring; does that actually fall within the actual range of depths that are even available in that cell based on bathymetric soundings' data.

You can see three-quarters of the trips reported depths. Of those that reported depth, about 5 percent seemed to have depths that occurred outside of a realistic range with a cell. But you see it's a generally improving trend through time with zero records that didn't report depth in '07, only one in '08, so an improving trend through time and a substantial number of records, especially when compared to the other fisheries' data sources that I examined.

When computing the impact of bathymetric closures from the logbook, for the most part if were looking at a grid cell for a closure and I had data from the logbook, I would directly use the percentage of the stock protected from the logbook unless there were no red snapper landings reported from that area, in which case I would have to extrapolate what the distribution of the red snapper stock was in that area; or, if in the logbook data red snapper were not landed both inside and outside of the proposed closure because then there would be no way of telling whether the species occurred inside of outside that depth range in that cell.

In order to evaluate the bathymetric closure from 98 to 240 feet, when direct substitution was not an option I created a regression based on landings' data. It should be noted that for all the areas

proposed for closure by Alternative 3 and Alternative 4 I used direct substitution, that it was data both inside and outside, so this regression does not apply in that instance. This would only have any impact if the council decided to look at other grid cells to close.

I provide a list in the model of what cells are direct substitution and what aren't, but I wanted to provide this regression model anyway just so you can see in terms of due diligence we went through it. It's a relatively good fit, a significant fit. We've got about 1,200 trips occurring outside that 98 to 240-foot depth range across the fishery; so even in cells that aren't going to be closed by Alternatives 3 and 4 you got about 3,600 trips inside 98 to 240 feet.

You can see there are a vast majority of red snapper trips that are actually occurring within that depth range. The commercial data may underrepresent the inshore stock because the headboat fisheries and the private recreational fisheries do operate further inshore. In looking at the new bathymetric closure alternatives that I kind of – I came up with these myself. It should be clear the council did not recommend that we look into this.

This isn't something from them, but I wanted to give them an alternative that hopefully would achieve their targeted reduction without going to a full grid cell closure. I looked at the data and I tried to pick out, well, what is a depth range that might get us to that 87 percent number under some relatively generous set of assumptions in the model.

I looked at this 66 to 240-foot closure basically thinking 66 feet, that's about three atmospheres of pressure. That was basically the start of that rationale. You can see on the left how that depth range looks in terms of a generalized contour going up the east coast in South Atlantic waters, and then close up here on the right showing where those Moe spawning aggregations fall relative to that generalized closure.

Here is the regression fit. It should again be noted that for Alternatives 3 and 4 I was able to use direct substitution, but for a grid cell that maybe did not fall within that criterion, this would be the regression that would be used. Then another closure that I looked at was from 66 to 300 feet, so expanding on the outside of the closure into deeper water; another good regression fit; and again direct substitution from logbook data was used to determine the percent of the stock protected.

Another thing that the council had asked to look at in June, which basically has been moved to considered but rejected, was the idea of closing cells but then allowing them to be open at least partially during certain times of the year. If that comes back up again, I did want to provide a little bit of information to the SSC so that you could review it.

Basically the way that I did that is I looked at the time sequence of landing's patterns by the three fisheries. These were done by grid cell by month. For example, if they wanted to close Cell 2980, which is what this image is of, and they wanted to open a little bit in May, for example, that would have a bigger impact in terms of the amount of red snapper stock and the amount of fishing that would be assumed to be happening because there is a peak in May for the

commercial fishery relative to say if they wanted to open it partially in November. So it makes sense; there is kind of a time sequence of how fishing effort occurs.

I also provide a function in the program to allow you to increase the intensity of fishing pressure in those cells relative to historical levels. It's a multiple scaler, so, for example, if you felt like, well, if we have this big closure along the eastern seaboard and then we go ahead and open this one little cell for one month, and 10 percent of the cells open, probably the fishing pressure in that cell is not going to be historical; you know, 2005 to 2007 levels. It's probably going to be significantly higher so multiply it by two or by three, whatever seems appropriate. I don't have any guidance on how high that would be.

I wanted to discuss a little bit the assumption of 100 percent compliance just to point out that even low levels of non-compliance can rapidly erode the benefits of these spatial closures. There is lots of published data and modeling on that. There is also little published data to estimate the actual rates of non-compliance, but a multiyear study in the Great Barrier Reef has reported high levels of intrusion into a closed area, and that's a relatively large spatial closure such as what we're talking about in the South Atlantic.

Obviously, less than 100 percent compliance will impact the projected reductions that would result from spatial closures. With that said, I wanted to run through some of the outputs from this modeling process. I'm going to show you various alternatives that have been proposed by the council.

You can see on the bottom right of each of these slides I'm going to list the assumptions going into this output, and you can choose for yourselves whether you think they're realistic or not, and then we will go into the actual model and we can play around if you like and look at the sensitivity of the model to these assumptions.

For these projections I'm going to show you under the assumption of 100 percent compliance we're going to assume that the release mortalities remain at the SEDAR 15 estimates. We're going to assume that those directed and targeted trips were eliminated by Amendments 13C, 16 and 17A. Directed and targeted trips, the distinction there is in some of the fisheries, the data sets they're able to report what species they're targeting.

So if they say, well, we went out and we were targeting red snapper in the baseline data, then under this assumption you would pull that out and say that trip is no longer going to occur. Sometimes they'll actually say in the data that they weren't targeting red snapper, they were targeting snappers or groupers or something else, but then you look at the catch and the majority of the catch is red snapper.

So you assume, okay, well, that actually was a trip for red snapper, so that would also be eliminated in this set of assumptions. This is a generous set of assumptions. So, for your reductions here under Alternative 2, which would close the commercial, headboat and recreational red snapper fishery, you get a 53 percent reduction.

Here at the bottom basically I have a table of the Fmsy proxies, the various recruitment levels, so the base estimated recruitment, the high recruitment, the current preferred which is the very high recruitment, and then extremely high recruitment, and then the alternatives for your target, so Fmsy, 85 percent of Fmsy and 75 percent and so on. You can see that under none of these scenarios does Alternative 2 get you to where you need to be to that 87 percent.

Under Alternative 3, if you closed areas 2880, 2980, 3080 and 3180 between 98 and 240 feet to all snapper grouper fishing, you get a 79 percent reduction, and you can see that under some of the scenarios you do achieve your targeted reduction there. That's under F 30 percent, very high and extremely high recruitment there on the right, but the red box there indicates your current preferred alternative, which is the F 40 percent with very high recruitment and 75 percent of Fmsy, and you do not achieve your targets under Alternative 3 under that set of input assumptions.

The bathymetric closure subalternative, so for Alternative 4 – again use the graphic so you can look at it – and you can see the differences in terms of the amount of area that would be closed under those alternatives, so 98 to 240 feet would close about 23.6 thousand square kilometers; 66 to 240 feet would close about 39.1 thousand square kilometers, and then 66 to 300 feet would close about 40.6 thousand square kilometers.

I've listed the percent area of these closures relative to the percent area that would be closed by Alternative 6 so you could see kind of the amount of area you would saving for continued fishing if going with one of these bathymetric closures. So you can see under Alternative 4C, which is the biggest bathymetric closure, you still have 40 percent of the area that would be otherwise closed under Alternative 6 that is available for fishing.

Under 4A, which is the 98 to 240-foot closure of those seven grid cells, you get a 79 percent reduction, and you see you don't attain your current preferred alternative for reductions but you attain some of the reduction targets that are listed in the document as alternatives. Under Alternative 4B, which is from 66 to 240 feet, you get an 87 percent reduction and you do achieve your current preferred alternative target.

Under Alternative 4C, from 66 to 300 feet, you again do achieve your current preferred alternative target. Under Alternative 5, which would only close four grid cells but close them in their entirety to all snapper grouper fishing, you get an 86 percent reduction, which is a subtle difference, and you don't get to 87 percent, and so you don't achieve your current preferred alternative.

Then under Alternative 6, which is the seven grid cell closure, you actually get up to a 90 percent reduction, which is actually over your current preferred alternative under this generous set of input assumptions. Looking at the various alternatives and the area closed in terms of thousands of square kilometers, you can see how it falls out in terms of reductions for the input assumptions that I've listed in those previous slides, and so you can see that jumping from 24 thousand square kilometers closed to 39 thousand square kilometers closed between Alternatives 4A and 4B gets you from 79 percent all the way up to 87 percent in terms of a reduction.

Alternative 5, although it's a full closure of grid cells, is actually a slightly smaller closure than Alternative 4B, it gets you to an 86 percent reduction. This might be useful to the council in their decision-making process in terms of trying to optimize their closure target. It should be noted this model has a variety of limitations.

It does not consider effort shifting from a closed area to open areas, so, you know, you close some cells to fishing those guys might not necessarily stop fishing. They might just move somewhere else and fish in which case there is an opportunity there for them to encounter and therefore inflict some sort of mortality upon red snapper.

It also does not consider the impacts of redistributing effort along closure boundaries, which has been shown to occur in a variety of spatial closure situations in the empirical literature. It also does not consider movement of fish across closure boundaries, which would reduce the gains from these closures. It also does not consider any discards of red snapper that might occur due to some of the gear exceptions in the closed areas. For example, permitting black sea bass pots and things like that might incur some sort of mortality on red snapper. I don't really have any way of demonstrating that in the model.

Also, it doesn't distinguish between potential differences between spatial fishing patterns of the private, charter and headboat fisheries. In June we presented how we computed the spatial distribution of fishing pressure from the headboat and from the private recreational fisheries. The headboat data itself was very difficult to work with in terms of figuring out where spatially fishing pressure was occurring, so there were a variety of assumptions that went into that.

Then we made the leap from those assumptions to assuming, for lack of any better input, that the headboat spatial fishing pressure was identically representative of the private recreational fishing pressure. Obviously, there are probably some issues there in terms of where fishing pressure is actually occurring from these various fisheries.

We also don't consider the spatial heterogeneity of the stock distribution within closed areas. That pertains to the evaluation of partial closures, so, for example, if you were going to take a grid cell and close it during the course of the year but then maybe open 80 percent of it during the summer months so that you could have some continued fishing in there during the times of maximum economic benefits you have to somehow open 80 percent of that, and it wouldn't necessarily be 80 percent of the space, it would be 80 percent of the red snapper stock that would then become vulnerable.

I don't have any way of distinguishing where the stock really occurs within those smaller closures, but the model basically assumes that within – you know, say you select a 98 to 240-foot bathymetric closure, it assumes the stock is homogenously distributed within 98 to 240 feet although it might be heterogeneously distributed within the entire grid cell, so at all depths.

With that, I need to thank various people in the SERO office; also Tom Sminkey up in headquarters, and several members of the Science Center. They were integral in developing this

model with values inputs, lots of really useful facts and other sorts of programs for getting the data in shape, and I certainly appreciate their review of this work. I'm going to go ahead and I guess take you for a spin through the model next so that you can see it works, but if you have questions before that, I'd be more than happy to address them.

DR. BELCHER: At this point seeing as we're butting up on the timeline for the lionfish, does anybody have any direct questions or comments for the presentation that we just saw? John.

DR. BOREMAN: I have a number. I can get into the details. Some of those plots that I saw and what you're calling regression are pretty shaky, I thought. I want to talk about this effort shift. You assume that effort is not going to shift outside of the closed area into the open areas. That's a pretty strong assumption. Have you considered, worse case, that all the effort will shift into the open areas just as a point of reference to see what might happen?

DR. FARMER: I've considered it but I haven't run any simulations of that.

DR. COOPER: Regarding effort shift, when we saw – I can't remember the specific presentation, but we talked about that extensively on how the assumption of zero effort shift just isn't appropriate. We talked at length about this with the other models, that that is just an unreasonable assumption; and to be putting best-case scenarios up there without doing any sensitivities is inappropriate, and we've said that before in a similar talk. Frankly, I'm kind of disappointed. I mean we're wanting to go forward here, but you give us the best-case scenario and it says, okay, it works under these, as you said, very generous assumptions. We need to know under realistic assumptions is it going to work.

DR. FARMER: And, certainly, when we get into the model, although I can't give you any information on effort shift, I can certainly toy with the other input parameters that are there, and you'll see that model is incredibly sensitive to those. I think basically the gist of it is if you assume effort shifting, you're not going to get to your target no matter what you do. Because if you toy with the compliance rates, if you eliminate the impacts or prior amendments, you will see that your benefits of any of these closures rapidly erode to the point that you don't get anywhere near any of those targets that are listed on that table.

DR. COOPER: Okay, then I'd recommend you include statement in future presentations, because had we not brought this up the people in the audience are sitting there going, hey, look, there is a whole bunch of things that are actually going to do – they're going to work great and much better than everything proposed.

You just said it's incredibly sensitive and if these assumptions are met it falls completely apart. Don't hide that behind a question-and-answer session. Put it up there and say, hey, here is how this thing works and here is where it's sensitive to. That's why we do sensitivity analyses. You don't want the public, let alone other committees, sitting there thinking, okay, what we just saw is what we should be moving forward. I mean there should be the second half of the presentation that says, okay, here is the sensitivities and here is how it – you know, where it doesn't work.

DR. FARMER: Per that request, if you want to look at the slide on the board here, I've got two kind of sets of input parameters that I ran all the scenarios on. A more conservative set of assumptions, perhaps, you know, too conservative would be let's assume no impacts of any of those previous amendments, let's assume that 17A eliminates targeted trips of red snapper only, and let's drop the compliance rate, somewhat arbitrarily – there was some discussion at the prior council meeting of compliance rates, anywhere between 80 to 90 percent being possibly realistic, and then higher or lower was thrown out, but I just kind of split the difference and went with 85 percent just to demonstrate the sensitivity of the model to these input assumptions.

You can see the range of reductions that you get under that other set of assumptions just to show you the sensitivity of the model to those parameters. Obviously, if you look at effort shifting into other areas, you can substantially reduce those reductions from there.

DR. CIERI: We have been using closed area models for groundfish in the northeast for the past ten years. My experience with the models suggest that, yes, you shift effort, you shift effort not only – not only do you shift effort uniformly; you shift it on the borders. The result is that your Q goes up a lot more than you expect. The expected reductions in the northeast with cuts in days at sea and rolling closures, that is the reason why those cuts in effort and in areas fished did not work in the northeast. There has been a continuous sort of downward slide, the assumptions, closed area, cut days gives you X number of a reduction in fishing, and that has not been the case, and that has been shown over and over again in the northeast. Do not go down this path.

DR. FARMER: It is probably a subtle distinction and your point is obviously very valid, and I a hundred percent agree with you that there is going to be stacking on boundaries because of the nature of the fishery. However, in this scenario the red snapper fishery is actually closed completely, so they wouldn't be shifting onto the boundaries to target red snapper.

They would be shifting onto the boundaries if, for example, there are other species that occur in that area. That's probably likely to happen given that the spatial closures will result in a buildup of other species inside there, and so naturally there might be an advantage to fishing along the boundary of them.

DR. CIERI: I mean, you don't want to put the council in the position where they think that they're substantial cuts when they're not. Then it's a loss of face. I mean, they think that they're doing something that's conservative and it's going to good for the fish as well as the industry. When you already know up front that might not work, you better tell them.

DR. REICHERT: This is a different issue. I disagree with the statement that MARMAP is using inappropriate gear. I've indicated that before. The fact that MARMAP hasn't caught significant numbers of red snapper, I don't think we should conclude, based on that, that we used inappropriate gear.

For instance, the Chevron trap in the Gulf is catching plenty of red snappers. I just wanted to make that point clear that if we present this in presentations, that it may give people the wrong

impression of the gear and the potential appropriateness or inappropriateness of the gear that MARMAP is using.

DR. BUCKEL: Nick, when you started the presentation you mentioned the 90 percent discard for commercial and 40 percent for recreational, and at the data workshop those were determined based on the average depth of landings for commercial and recreational; so when you're doing these grid cells and the depth is changing, how did you deal with that if you're at an average depth of 20 to 30 meters, for example, for recreational and commercial.

DR. FARMER: I left those discard mortality rates as constants in the model, 40 percent regardless of where the red snapper was caught and 90 percent for the commercial regardless of where it was caught, because I felt like I didn't have enough guidance to really overstep. I do provide an option in the model for the council to go through and tweak those parameters, and I provide a tab with substantial documentation from SEDAR 15, from SEDAR 9 and from a few peer-reviewed articles that provides guidance on what realistic inputs might be for release mortality rates.

DR. BELCHER: At this time what I'm going to do is ask anyone to kind of hold their questions. We're going to take a five-minute break and then we'll come back to do the lionfish presentation. Nick, after we get caught up after we get caught up on these other two presentations, we'll have you come back. Is the group interested in seeing the model run or is everybody pretty much at this point – I mean we'll have further discussion. We have Erik's presentation, but do folks want to see it run? Come back to continue questions, obviously, but we won't do that part of the presentation.

DR. BELCHER: Okay, we're going to have our presentation on lionfish from James Morris with NOAA.

DR. MORRIS: All right, I would like to thank the SSC Committee and especially John and Erik for helping arrange this talk and an opportunity to update everyone on the lionfish invasion. As if we didn't have enough problems already, it seems that lionfish has continued to be an emerging issue and something that we'll probably have to address at some point in time in the near future.

We had a lionfish technical meeting in 2005 in Charleston, and I believe this is the first update to the South Atlantic Fishery Management Council since that time. There may have been a few other presentations and meetings and things which some of you attended, but I believe that this is the first opportunity in a formal way to update you on the status of this invasion.

Certainly, since 2005 a lot has changed. We have learned a lot more about the lionfish invasion, and the lionfish invasion itself has progressed staggeringly. I'm going to go over briefly today – we could take hours going over lionfish and discussing the various aspects of the life history and ecology, but I'm going to summarize for you the invasion chronology and the status of establishment throughout the invaded range.

I've done a lot of work on the reproductive biology of this species, and it's extremely fascinating, and so I want to share with you some of the reproductive biology and the underlying mechanism of how lionfish has become this super invader and then going to go over some predation ecology and speaking about natural mortality. That is a question that is from an ecological standpoint also fascinating.

Then we've just released a publication on the feeding ecology of lionfish in coral reef environments, and so I want to go over with you the results of potentially what they eat and what we know about the diet and how that might create ecological impacts in their invaded range. Then sort of bringing this all together towards the end, a discussion of the life history and invasiveness, and then perhaps the point of discussion will be some aspects of the control and management in the context of managing an invasive species in the marine environment.

So to get started, I just want to share with you the status of lionfish establishment. Now you can see from the picture on the left we went from seeing a few lionfish individuals back in 2000 off the coast of North Carolina and then first documented the establishment of lionfish in North Carolina.

A diver at our laboratory named Paula Whitfield got a report from a local dive operator there were lionfish off North Carolina, so she went out and actually documented that. But, lionfish actually appeared off the coast of Florida much earlier than 2000. This little graphic doesn't go back to the early eighties, but if I were to hindcast lionfish sightings you would see that they actually started in the eighties, in the early eighties.

Then sort of an annual basis there were reports, and it was thought that these initial lionfish introductions were from aquarium releases, that eventually over time there was enough of the population out there that it began to take hold and began reproducing. There has been a lot of speculation that Hurricane Andrew was the initial source of lionfish introduction, but because we have significant numbers of sightings prior to Hurricane Andrew we can only say that Hurricane Andrew might have contributed or might have provided enough individuals to allow for a sustaining population.

There has also been a lot of anecdotal observations of potentially open-source aquaria releasing lionfish propagules a long period of time and that it just took a number of years for those propagules to become established. That is unconfirmed, and so really the only evidence that we have that we can document is the appearance of lionfish beginning in the eighties in South Florida along with many other marine ornamental fishes, and that's a discussion for another time.

I like to put up a static picture that shows you where they are as of last week. Tracking lionfish establishment in the Caribbean is really a weekly type of activity because they're spreading so rapidly. What we've seen so far is that they are as south as Venezuela. We expect lionfish to go further south than that, I will go over with you that scenario in a second.

Because we have such a high connectivity in the Caribbean Region and the Gulf of Mexico and the Southeast U.S. via oceanographic currents, it's obvious that lionfish have not reached their

full invaded range. I would want to point out that Central America has more lionfish than you see here. We have reports of hundreds being collected in Columbia, but it's difficult to get reports out of foreign countries.

A lot of times these samples are collected, they want a hold on them, they don't want to report to the U.S., and so actually getting factual reports is problematic, but we work very hard to try to scour the list serves and to seek out those individuals that have collected fish and reporting and telling people about it.

I do know, for example, that Central America does have more lionfish than you see here in the graph. I also want to point out that the Lesser Antilles have not yet been invaded, and we believe that is the case, so we expect an invasion there very soon. Then this big empty spot in the Gulf of Mexico, excluding the one that we have in Tampa Bay which we think was a separate release – that was actually a Red Tide kill event – but we do not yet have lionfish reported widespread in the Gulf of Mexico, but that invasion is obviously imminent as the Gulf Loop current is the primary vector there.

In terms of where do we think lionfish will finally end up; what is their future invaded range, all we have to do is think about temperature. Lionfish are a tropical reef fish and so they have a thermal minimum of around 10 degrees Celsius. If you look at what is the potential future distribution of lionfish is in terms of where that thermal habitat exists, it includes the entire Gulf of Mexico, Caribbean and down as far as Northern Argentina.

We do have a potential soft area there, the Amazon Delta, but many reef fish transverse that barrier quite often, and so we do expect lionfish to continue their invasion throughout the rest of the Eastern Caribbean and then to continue into South America. Probably one of the most alarming aspects of this invasion is not surprising from an invasion ecology or invasive species ecology standpoint, but just the sheer fact of how many we are observing throughout their invaded range.

There was a note that came out last year by Stephanie Green and Esabelle Cote at Simon Fraser University. They did some density counts of lionfish in the Bahamas. The lionfish invasion has had essentially two big waves of the invasion. We had a wave in North Carolina beginning in 2000, and we had another wave in the Bahamas being in 2004 or 2005; and by the time that they did these surveys in '06 and '07 lionfish had reached in some locations in these coral reefs in the Bahamas over 1,300 lionfish per acre.

So if you imagine a one-acre lot piece of land, it's fairly easy to think about an acre, and I converted these numbers from hectares to acres because I have hard time thinking in 2.47 acres, but I can think of a one-acre lot. That's over 1,300 lionfish in that one-acre space. That was a maximum, but the mean that they observed over there settling stations was a thousand lionfish per acre.

Within North Carolina with Paula Whitfield's survey data, she also has observed over a thousand lionfish per acre at some of the research sites that she has been surveying, but had a much lower

mean of almost 400 lionfish per acre there. Now, granted, there is some bias in these estimates in terms of selecting stations and the bias attributed with counting fish.

I don't want to get into how this compares with our snapper and grouper, but I think it's obviously that lionfish are a much higher biomass in some of these locations than are native economically important species. By comparison we don't really have good data on the lionfish densities in their native range. We only have two estimates, really; one from the Red Sea and one recently from Palau, which was a collaborative effort to try to get some native range densities. With a person from the State Department, I was participating in a museum collection there.

You can see that the Red Sea estimate of around 200 lionfish per acre and 5 lionfish per acre is orders of magnitude lower than what we're seeing in their invaded range. I also want to point out that in a recent document that we released on Friday you can see that the mean lionfish densities does continue to go up off the coast of North Carolina, which is at least an initial indication that we still have not reached the asymptotes of that density increase.

I want to move on briefly to life history reproductions. I want to play for a little video that was collected a few years ago in the Bahamas. This essentially is what lionfish courtship looks like. We're not absolutely sure that this is courtship, but if we look at the behavior of courtship and what has been reported in their native range, this is what happens.

The female comes out from the reefs, changes color, the male comes and mates with her. They go through this extensive courtship behavior that lasts for several hours, and it particularly happens in the evening or the morning. Then they rub their cheek spines up the sides of each other and create these scars that you'll see on the sides of the fish.

This could have been some aggressive behavior, although we don't really think so. It probably was more or less related to courtship, but it's very similar to the pygmy lionfish courtship behavior that was observed in the Red Sea. I've been working on essentially describing the complete reproductive biology, and we can say with confidence that lionfish are gonacharistic idioparous asynchronous indeterminate batch spawners, which basically means they reproduce often and a lot and many times throughout the year and many times across their life history.

Each spawn of lionfish releases two buoyant egg balls, and those eggs are encased on a gelatinous mucous that you can see down here at the right-hand side of the screen. The interesting thing about this egg ball – and the thread that you will see throughout this talk is that lionfish have many life history characteristics that have allowed them to become such an invasive species.

One of these characteristics we believe has something that potentially has to do with sperm entrapment because this ball is hollow; and as the male releases sperm, it's showering this egg ball; and as it begins ascending towards the surface, it has the potential to entrap sperm inside this egg ball.

And so you think about fertilization success and the ability for lionfish sperm to gain access to eggs, and that has large implications for the potential fertilization success during a spawning event. I do want to point out that these egg balls will break down and the embryos will then become free floating in about two to three days, and so there may be some implications of that gelatinous egg mucous in terms of dispersal, but after a couple of days the eggs, embryos and larvae disperse just as any normal pelagic reef fish egg will.

Working with Dean Hairholtz at our laboratory, we've been able to estimate lionfish larval duration as 26 days, which is a fairly standard larval duration for a reef fish with a pelagic larvae. We're looking at the ovarian morphology and the genesis of this species. Lionfish ovaries are arranged in a bit of a unique ovarian morphology compared to most teleosts in which primary oocytes are located around a central stroma, which therein includes the blood vessels.

The eggs evolve and grow on peduncles or these stalks that are vascularized and literally each egg has somewhat of an umbilical cord that comes from the central stroma with a direct nutrient supply to the eggs rather then being suspended in the ovarian stroma throughout the ovary. It has been quite fascinating to look at.

We're not sure if this particular ovarian morphology has enabled them to be a high invader or if the rate of oocyte growth is any higher, but it is really interesting to think of it from an invasive species ecology standpoint. This peduncle places the egg towards the wall of the ovary where these specialized secretory cells emit this mucous that binds the eggs together. Then as you can see in this picture here, the ovary sloughs off this egg ball from one end to the other, basically from anterior to the posterior of the fish and creating that hollow center.

We've also been looking at the reproductive dynamics, exactly when they're spawning, how often they're spawning, what is their length or size at maturity, what is their batch and annual fecundity? Those are very basic fisheries' population type questions and have been really fascinating to look at.

I wanted to point out here that this is an early settled juvenile lionfish, and they are transparent. You can see right through them as juveniles, making them hard to detect in the wild. The female size at maturity is approximately 180 millimeters total length. That corresponds to about a one year old, and that is the 50 percent maturity benchmark there at around 180 millimeters. That was somewhat alarming from an invasive species standpoint. In other words, they are reproducing within their first year of life.

Then if you look at males, of course, that is a bit smaller than a female at around 100 millimeters total length is where we see 50 percent of the population being sexually mature. This is based on a high sample size relatively and pooling samples from the Bahamas and North Carolina. One of the aspects of reproduction that was probably the hardest to get at but has been the most alarming is their spawning seasonality.

When you think of it in terms of an evolution context, we have a fish that has evolved in a completely different system. Being native of the Indo-Pacific and then being placed in a more

temperate environment of the Southeast U.S., what is going to happen with this species and how is it going to function and how is its life history going to be controlled in this environment, and so really I was uncertain and really didn't have a hypothesis in terms of what if the actual spawning frequency and what is the reproductive seasonality of the species.

So we sampled fish from North Carolina and the Bahamas and assessed the spawning seasonality. The top is female and the black indicates that when we caught them they were in the act of spawning. They hydrated oocytes in their ovaries. Then the gray indicates they were late developing, so they would have spawning within a couple of days basically.

So if you combine the black and the gray together, you can see here that we have samples of lionfish spawning essentially year around and a very proportion of the population spawning year around. Then the actual black is when they were spawning. We do not have any late developing or I should say spawning females in September and October. That's largely because of the sample size in those two months, but we do have the late developing – showing that they were spawning during those months.

And then the same thing is observed for males in terms of active reproductive activity every month of the year. In terms of spawning frequency, we're still working on POF, post-ovulatory follicles, and there are some issues with doing spawning frequency analysis with POFs that have not yet been validated, and so being this is a tropical fish we expect that POF endorsement is very high.

I haven't felt comfortable using POF to estimate frequency yet, so I used the hydrated oocytes as an indicator to develop a spawning frequency analysis. I did two sampling efforts; one an eight-day consecutive sampling in the Bahamas and then five consecutive days in North Carolina. The reason that we did both, the North Carolina and Bahamas, is that we wanted to have how the fish was performing from spawning frequency at the northern temperate zone of its invaded range and then in the more subtropical reaches there in the Bahamas.

Then, alarmingly, a spawning frequency analysis shows that lionfish are spawning about every three and a half days in North Carolina and about every four days in the Bahamas. The accuracy here in terms of the agreement of this analysis was good to see in terms of that and having that validation in those two sampling locations, but it is quite alarming to look at the rate of spawning. This was, of course, within the range that we observed for tropical reef fishes that exhibit this type of life history, so this is not potentially unexpected, but we do not have hard data to suggest that they're spawning often and basically every three to four days.

So how much or how many eggs are they releasing? Our batch fecundity estimates are around 25,000 eggs per batch. That equates to an annual fecundity of over two million eggs a year. Of course, that needs to be thought about in context. There are many other teleosts, of course, that release a higher of eggs than that or a lot less.

In this context, when you think of an invasive species that is invading a new environment, if you spread your propagules out over the entire year then the chance of you having success is very

high. Because it's a new environment and you have not evolved in that environment and so the fact that this fish has a life history that allows it to reproduce often and reproduce a lot, it's certainly one of those mechanisms that has a lot that do become established.

Probably the biggest question and the most often asked question that I get around the table at dinner is what eats lionfish, and that is what everybody is asking and most everybody wants to know is because what are going to be the natural controls for this species now that it's here in its invaded range?

First, before I get into that, I'd like to just put up for you a graphic that I helped develop with a graphic artist about how the spines work. There are a lot of myths out there. You see a lot of things about lionfish have these venom sacs at the base of their spines, and that's simply not true. Lionfish spines have these grooves along the spines and the actual venom tissue, which you can see here, these heart-shaped venom glands like inside of these grooves.

As the spine goes into the victim, whether it be another fish of a person, the skin that is around the spine is shoved down and they're exposing those venom glands and releasing that venom into the wound. Here you can see a spine with that integumentary or that skin sheath around it. So there is no actively producing venom pressurized gland here. It is pretty much a passive type venom apparatus, but you do have to shove down that sheath exposing those venom glands and releasing that venom. All of the spines, dorsal, ventral, anal, stent-typed spines on there are venomous.

What eats lionfish? There is only one paper from the literature that provides any evidence of a natural predator of lionfish, and that's a cornet fish. This observation, though, is a bit speculative and is a problem in that the author states that the spines are capable of full-basal rotation and that the cornet fish had eaten the fish from caudal fin first, and that is questionable at best.

Those spines are not capable of full-basal rotation; and it might be the case that the cornet fish ate the lionfish from the caudal fin first, but it was likely heavily envenomated during that process and probably wouldn't eat lionfish very often. The other anecdotal evidence is that some sharks may eat lionfish, and these are anecdotal observations from just people saying they saw this happen or they saw this occur.

There is recently evidence that greater amberjack were feeding on lionfish. There is speculation that goliath grouper may be a good predator for lionfish because they feed on various spinous things. You can look on UTube and see a video of a humpback scorpion fish, as seen here, eating a pygmy lionfish there. Then I have observed, obviously, cannibalism in the laboratory as well as some previous studies that discuss a bit of cannibalism.

In the early days of lionfish research – we have been working on lionfish for almost a decade here at the Beaufort Lab. One of the main questions that I had was if we took some native predators into the laboratory and fed them lionfish, what would happen? Putting that curiosity to action was quite difficult in a laboratory was because as you well know when you bring a fish

into the laboratory and try to look at behavior, the fish does whatever it wants to, and it's hard to do behavioral studies that get at questions.

I took a couple of different approaches working with my advisors at North Carolina State University and developed some predation trials. I want to show you videos that we produced in the early days of this effort. We took black sea bass as a candidate; one, because black sea bass are obviously very voracious. They're one of the first fish on your hook, and they seem to be indiscriminate in terms of their diet and they'll eat anything.

What I did was I released a lionfish into the tank, and I did this replicated trial about 20 times. I want you to notice the behavior first of the black sea bass. The black sea bass swims up to the lionfish and then it backs away. It recognizes very quickly that this fish is non-palatable, that it's not a very good thing to eat. The fact that it recognizes it is interesting especially from an evolutionary context.

But you can notice it runs up there – the lionfish behavior is also something interesting. The lionfish does not back away from this very large predator. It has this sort of omnipotent type of behavior that it's just not scared at all. You don't see the lionfish fleeing and running for structure and exhibiting that flight response.

So behaviorally predator and prey here, it's quite fascinating that we have this type scenario. Now I want to point out that many people said, "Well, James, this doesn't prove anything, because you've just introduced a novel prey item into this tank." I went to my lunchbox and got a honey bun and threw it in the tank, and black sea bass love honey buns.

This is a pinfish that I released into the tank immediately after releasing the lionfish and notice what happened. The pinfish is eaten. Now this happened time and time again. I like using this video. It's very entertaining and it sort of proves the point that lionfish obviously enjoy the benefits of having a venom defense, and that our native predators certainly recognize lionfish as a venomous fish.

Now let's keep this in context. We have over 20 species of native scorpaenids that have the same venomology as lionfish. Our native fishes have experience with scorpaenids, with scorpion fish, but the point is that those native scorpaenids are nowhere near the densities of lionfish, and so the interaction is going to be higher. There is a lot to talk about there.

We moved on to a different experimental design where we put a glass tube in a tank, introduced a predator and introduced a pinfish and a lionfish in the tube and then recorded the time that the predator stayed within the vicinity of each prey item. We randomly rotated which prey we released into each tube. After several months of studies we showed that the predator almost exclusively stayed around the alternative prey item, which was a pinfish, and avoided the lionfish in the tube more times than not. We did that largely with black sea bass, again, because it seems like black sea bass is a very conservative animal to work with in terms of this questions

I also attempted the same trials with red grouper and a goliath grouper and a gag grouper just to see if I would see a different response and the response was essentially the same. There has been, though, a report recently of tiger grouper and Nassau grouper eating lionfish. I believe three or so lionfish were observed in the stomach contents of these two grouper species.

I want to point out that you can have incidental predation. It just doesn't exactly mean that osprey are a natural predator for lionfish. We are going to see as time goes on that there are animals that are going to be eating lionfish, but doesn't mean that predation is going to be significant enough to cause predation mortality on lionfish capable of controlling the population.

Then still if you're convinced that there is something special in co-habiting with predator/prey interaction, this is the Indo-Malayan octopus which mimics lionfish as one of the animals that it seems a good animal to mimic in order to avoid getting eaten. From an evolution standpoint that's fascinating how this octopus has adapted this characteristic to mimic lionfish.

Moving on to diet analysis and impacts, we have worked extensively in the Bahamas trying to get a handle on what lionfish are eating. The reason we chose to work with the Bahamians on this is because, one, they expressed a lot of support and the local dive operations in the Bahamas were really concerned about lionfish, and there were resources to do it in partnership with the Reef Environmental Education Foundation.

I also want to point out that there is a stomach content analysis underway now off the coast of North Carolina. A NMFS employee at our laboratory, Munoz, has done a good job in analyzing stomach contents off of lionfish off the coast of North Carolina, so we're really excited to compare this data in the future and look at how lionfish were feeding in the temperate areas of their range and then we have this assessment here in coral reef environments.

We sampled over 1,200 lionfish stomachs in the Bahamas from all over the archipelago. We sampled throughout the calendar year and did the classic relative frequency number and volume of each prey item in the stomach. The take-home message about what lionfish eat is that they eat mostly fish. About 70 percent of their diet are teleosts. Then, of course, they eat some crustaceans as smaller individuals.

The larger the lionfish size the higher proportion of teleosts in their diet. From an invasive species context, they have a very broad diet. We found over 40 species of fish in their diet, over 29 families were represented in the diet. They're much an opportunistic feeder. They're basically feeding on what is available and what is readily available and most abundant, and certainly the optimal foraging theory applies here, that they're pretty much a non-discriminate feeder, which has large implications for the most abundant prey items in the habitat.

The top-ranked species in their diet were gobiids, labrids, grammatids, and pomacentrids. We do know that these species are some of the most abundant species on the reefs. They're in the Bahamas. We did find and have found examples of economically important species in their diet, such as Nassau grouper which is a big concern; yellowtail snapper and then recently vermilion snapper off North Carolina on a recent sampling trip that we did.

I would like to point out that while lionfish diet is comprised mostly of these small benthically associated fishes and they have incidental predation on economically important species, we really don't have any context for knowing how much additional predation mortality lionfish may be imposing on economically important species.

That's a big question and while they're a small part of their diet, how much predation is enough to impact the population status or stock rebuilding efforts for those economically important species? In a broader context and sort of philosophically what are the potential impacts of lionfish?

Well, we have estimates that lionfish are actually consuming more biomass in some of their higher densities than is recruiting onto those sites, and that is very alarming from a stock rebuilding standpoint in terms of competition with native species. We know that lionfish densities that we are already observing are not sustainable, that lionfish are probably already in a density-dependent scenario on some of these sites that their density is very high.

What does this mean in terms of competitive exclusion or in competition with native species? Thinking about where we are in managing the snapper grouper complex, for example, we have many overfished species, and we have obviously created open niches in these habitats and in this reef space.

It's really interesting to think about how lionfish essentially are coming in and are occupying a vacant niche, and the concern is what kind of impacts will that have in the future as we try to rebuild those stocks; are those niches that were once occupied by those economically important species there; how will lionfish compete with those economically important species as their numbers increase, and is the opportunity still there to rebuild to the levels that we are hoping to rebuild to from these efforts? We don't know.

Our efforts to look at this problem have been largely from an organismal standpoint. There has a few ecological impact studies that are underway in the Bahamas in the U.S. Virgin Islands and in Puerto Rico and off the coast here of North Carolina, but largely we have very little data looking at the competitive interactions and this business of vacant niches and hampering stock rebuilding efforts.

This is a scenario I think that is going to continue to be an area of concern especially in the context of stock rebuilding plans. To give you an idea about lionfish consumption, I have a master's student working in my lab, that we essentially built a bioenergetics model for lionfish. We want to know how much they consume on an annual basis.

If you look at these figures, these are seasonal plots of the water temperature from January through September, essentially encompassing winter, spring, summer and fall. We see that lionfish consume at the highest temperatures around 6 percent of their biomass per day. And if we look at where those temperatures exist, you see, of course, that they don't exist off the coast of North Carolina, but they do in July.

I especially want to point to out if you look at the lower Caribbean, around the Ecuador is essentially where lionfish are going to have the highest consumption impacts; it's where they're going to be removing the most energy from those systems. Unfortunately, those areas are some of the poorest quality reefs in the Caribbean, and so the relative impacts that lionfish could have in those areas is quite high.

We do know a lot about their consumption, about their potential impacts in terms of energy removals in their native range. Why or how are lionfish so invasive? I realize that this is a new problem and we think about new problems differently, and we don't have a lot of experience dealing with invasive species in the marine environment in the South Atlantic and Caribbean, and so we really don't have a background in which to gauge lionfish, and I wonder if we could have even predicted that lionfish would have been this invasive in sort of a forecast scenario.

But, the only area that we had to look from a comparative standpoint is for freshwater invasive fish, and there was some great work done by Emilie Garcia-Berthou, who is at a Spanish university, and he looked at sort of metadata analysis of freshwater invasive fish. He essentially modeled the main predictors of invasiveness of a freshwater fish, and they are things like a broad diet and high physical tolerance and whether or not there has been a prior invader, fast growth, large native range and all these different characteristics of life history.

It's alarming to notice that lionfish exhibit all of these main predictors except two, which are essentially short distance to native source and parental care. All of the other main predictors that predict freshwater fish invasion are applicable to a lionfish. They have all those tools in the toolbox to make them a good invader.

We think about that in terms of potential opportunities for screening of imports and predicting invasiveness, but this is very much a new area for us of an invasive species and highly controversial when it comes to limiting imports and thinking about invasiveness of non-native species.

Getting to areas that are potentially very hot topics these days, there has been a lot of interest in harvesting lionfish as a food fish. Lionfish are showing up regularly in headboat surveys as well as snapper grouper bottom fishing. I want to point out, though, that lionfish do not readily to recruit to hook and line. We typically only see the large males that are caught by hook and line, so a hook-and-line targeted fishery obviously is probably not going to be somewhere where we want to go; not to mention the big bycatch issues associated with that.

We've been toying with traps and working with Erik Williams and the MARMAP Program in developing novel baiting strategies. We are able to catch lionfish in chevron traps baited with live bait, so there is some promise there. We have a study going on right now in the Bahamas where we're testing a number of different trap design and baiting strategies, thinking about decoys and baiting fish even with lionfish.

There is a lot of interest there, but the harvest strategy is obviously a problem. Obviously, the cleanest way to remove fish is by spearfishing. That's probably a good option the further south you go as lionfish habitat is more nearer shore and there is more effort there in terms of the spearfishing community.

Lionfish, as I mentioned, are very good eat. I've been working closely with the NC State Seafood Laboratory, with Mary Nash and a wonderful team of good-looking ladies that have helped cook lionfish, and did some sensory taste tests where we actually prepared lionfish a number of different ways and fed them to people who ranked them. Hands down, lionfish are good to eat. There is no question about that. Everybody that has eaten lionfish will report that they taste very similar to some of our native reef fishes – of course, they do; they're eating the same thing – and that they have white, firm meat.

People away from the coast, though, that also think lionfish is good to eat, this article came out and said lionfish are a hit with Chicago and New York chefs. The Bahamas is thinking about it from a conservation standpoint -- when we close the Nassau grouper season, can we increase lionfish harvest and getting those people to go out and – this one says, "I'm on my honeymoon; eat lionfish for Nassau grouper."

They've been doing cooking symposia and trying to take a much more proactive – the Minister of Fisheries issued a kill order for lionfish three or four years ago. The Bahamians are actually leading this effort on many different fronts in terms of a proactive management strategy. Then about a month ago this article came out in The Economist, which actually I'd nothing to do with other than we sent them some filets and we didn't get the credit later on, but the title of the article was "Eat for the Ecosystem".

These grassroots kind of efforts are taking hold. There are a number of people that are interested in promoting lionfish as a safe and ecologically sustainable fish to eat. There is a very large public interest in supporting this, but the whole concept of eating for the ecosystem is sort of a new one that we're still trying to get our head around.

I've been working closely with Jim Rice and Kyle Shertzer, Jim Rice at NC State and Kyle Shertzer at the NMFS Beaufort Lab, to build a matrix model and think about lionfish from a population modeling standpoint and look at their life history. We basically plugged in all the information that we know about lionfish.

The alarming thing to us and the result of this – this paper was submitted to biological invasion – is that lionfish have a life history that essentially enables them to be fished very hard given their reproductive output, given their apparent predation or natural mortality values, but using assumed values and values that we derived in the lab and in the field, this modeling effort suggests that we have to remove about 26 or 28 percent of their population on a monthly basis in order to reduce the population growth rate. That's an astronomically high number.

We are working to develop better model parameters for that, but we don't expect that number to shift too much in terms of – and just looking at the rates of establishment of this invader, it

provides some evidence that they are going to be very difficult to fish down, and it was very difficult to control in terms of harvest or fishing mortality.

In conclusion or moving towards conclusion, I'd like to talk with you just for a second about lionfish management. We've just released a lionfish-integrated assessment. I've brought copies with me, and they're in your briefing booklet. I'm going to put copies out on the table for you to take back home with you.

I realize that this is virgin ground in terms of managing fish populations in the Southeast U.S., the Gulf of Mexico and really in the Caribbean as well in terms of an invasive species that has the potential to be an economic opportunity, but at the end of the day it's really going to come down to do we want to manage lionfish or not. Then if we do, what are our management options? I've explained in this integrated assessment some of these options in terms of creating state or federal bounty systems, providing scenarios where we have stock protection or we don't have stock protection.

This is a bureaucratic quagmire when you think about how Magnuson-Stevens applies; and that if we were to create a formal fishery, that we could have fishermen showing up at a council meeting in the future wanting protection for lionfish because of the economic dependence that is there. This is obviously not a ten-minute discussion or decision.

Being in the National Ocean Service and not in the management arena, I just wanted to lay out these options that exist and in the context that it exists, but it's certainly up to the managers at the end of the day to decide whether or not we're going to proceed with any type of management of the species.

I do want to say that the NMFS Southeastern Regional Office, the Southeast Fishery Science Center, the Office of Habitat Conservation and Invasive Species Programs in NOAA all reviewed the integrated assessment and provided great comments in terms of the management scenarios that we're dealing with.

Probably the one scenario that causes me to pause the most was that if we were to move forward with managing and creating economic incentives for harvesting lionfish, that there may be some ethical issues involved there in terms of creating a fishery for a stock that we do not intend to protect. That caused me to pause more than anything I've heard in the last six or eight years working on lionfish.

We have to do this carefully and we have to think about it carefully; you know, what is our objective and what scenarios are we potentially going to be dealing with in the future. The other thing is that as Magnuson-Stevens is now written, lionfish, if managed as a federal species, of course, we'll be able to – stock protection for lionfish is imminent, and so it would behoove us to also think about the next revision of the Magnuson-Stevens and exempting any non-native species from stock protection in the future if we are truly concerned about invasive species like lionfish and the threat that they have on our biodiversity.

There are hours of conversation and philosophical discussion about lionfish management there, but I just wanted to leave you with this bit of good news is that lionfish has provided really an unprecedented amount media coverage. I've been completely inundated and overwhelmed by media wanting to know about lionfish, both in national news networks as well as in magazines and kids' TV shows are all interested in lionfish because it's easy to teach about invasive species with lionfish.

It's a great example; it's a very charismatic fish to talk about and to think about and people like learning about lionfish, and so it's a great tool to teach about invasive species. That's both good and bad because of the enormity of the problem. I brought with me the integrated assessment and this feeding ecology paper which outlines a list of ecological impacts that may be perceived from lionfish. I'll put those on the table after the talk and feel free to pick those up. We've also just released a field guide to non-native marine fishes of Florida that was done in collaboration with USGS in Gainesville and Ladd Akins at Reese.

This field guide documents over 30 species of non-native species have also been released in South Florida waters, which have the potential to become established just as lionfish once did, and so we're working hard to try and develop early detection and response programs in South Florida to hopefully respond and remove any future invaders from becoming established there.

I would like to acknowledge all the many collaborators that have helped me on this work. There has been a plethora universities, federal agencies, NGOs and foreign governments. As lionfish tend to spread throughout the Caribbean, this has become an international issue and one that originated from us.

There is a responsibility there to work with our international partners and develop reasonable control strategies for the species in the Caribbean, and we see this thing as going in international waters really quickly. Then many people have provided assistance for this work over the years. With that, I'll be happy potentially field any questions if we have time. Thank you.

DR. BELCHER: Thank you, James. Any questions or comments for James relative to the presentation? We have an agenda item later in the course of the agenda, like for tomorrow, that we can talk further if there is anything that we want to put forward in the consensus statement relative to what recommendations we have for the council. If you have questions or clarification from James, ask them now. Otherwise, hold your comments and we'll talk more about it, time permitting, later on in the agenda.

DR. MORRIS: And I will be giving a brief talk on Friday to the council. The results of that discussion will be great and if there was any type of consensus, you might relay that at that time.

DR. BELCHER: Thanks, again. All right, we're supposed to receive another presentation at this point, a coral presentation from Mark Robson. Again, this is the same type of scenario. We're getting the presentation now with the council members.

MR. ROBSON: Okay, good morning. For those of you who haven't met me, my name is Mark Robson. I'm a member of the council. I'm director of the Division of Marine Fisheries Management for the state of Florida. Of course, the council is working and the staff is working on CEBA 2, the Comprehensive Ecosystem-Based Amendment 2, and looking at management of the octocoral fishery where there is a federal management plan.

There was discussion at the last council meeting about the fact that the state of Florida has an active Marine Life Fisheries Management Program in place that also addresses the harvest of octocoral for marine life for aquarium trade purposes. I was asked to bring a presentation back to the council on that program in the state of Florida. It was also thought that it would be a good idea to talk to the SSC about that and give you this presentation.

I'll go ahead and go through this. Please bear in mind that we have staff that work very actively with the marine life industry in Florida on my staff. They weren't able to be here because we're getting ready for our state commission meeting this week, and so I'm a poor second choice to give you this information. I'll do my best.

If you have any questions specifically, I'll try to answer them, but again we have a number of staff experts, particularly Jessica McCawley and Martha Baderman on our staff who also helped to put together this presentation, and I would like to thank them for that. We'll go ahead and get started.

Well, first of all, what is the Marine Life Fishery in Florida? It actually is a managed fishery by the state of Florida. We have a commercial and a recreational harvest of more than 600 species of live saltwater fish, invertebrates and plants. These organisms are collected primarily for the aquarium trade.

Commercially organisms are collected and sold live to wholesalers, retailers and aquarium owners. It is estimated that about 800,000 U.S. households maintain marine fish in aquariums as pets or for display. The commercial marine life fishery also supplies public and private marine aquariums which are important in promoting marine conservation and education, and that especially applies to education about coral reefs and their associated species where there is a lot of interest and lot of folks that don't normally have exposure to those unique systems.

The domestic collection of many of these reef fish species or other marine life species is pretty much limited to Florida, Hawaii and California. When compared to other marine life fisheries around the globe, of course, I'm biased, but I like to think that Florida has probably been a leader in protecting the fishery.

Some other countries are beginning to protect their coral reef ecosystems and a lot more attention is being paid to the marine life trade around the world. For example, recently Puerto Rico has limited marine life harvest to just four collectors; and Haiti, for example, no longer allows the export of recordia, which is a valuable marine life species that is becoming very prevalent in the trade.

Some of the challenges that we've encountered in the Marine Life Fish Fishery Program is that this fishery occurs primarily within one of the most biologically diverse and valuable ecosystems on earth, the Coral Reef Ecosystem, and we treasure it in Florida, obviously, because it's so unique to the United States.

In order to help preserve this valuable ecosystem, the management of the marine life fishery addresses the potential effects of the fishery on coral reef habitat and the ecosystem itself. Now, unlike many of the other marine fisheries that we manage, we don't have any stock assessments, and there is very biological information that's available for any of these marine life species.

We believe that a conservative management approach, which we've taken in cooperation with the marine life collection industry and also with the Florida Keys National Marine Sanctuary staff, that is based on the best available data and knowledge of the coral reef ecosystems that we have and also the level of the harvest from the industry representatives that we talked to, that it's the best approach for the management of this valuable group of marine animals and the potential impacts that the harvest has on the marine life fishery.

Well, what is the strategy? We don't have stock assessments, we can't manage it like a traditional marine fishery, and the strategy is to limit the number of harvesters in the commercial fishery and also by using an aggregate daily bag limit for the recreational fishers. In this strategy we also employ for additional protection more stringent bag limits, vessel limits, size limits, gear restrictions, substrate restrictions, a number of things that we apply for a specific species where we do have available information that additional protection is needed. But by overall managing particularly the commercial harvest to a limited number of authorized fishers, in most cases we don't need further regulations for every species, and we limit the harvest that way.

Some of the regulation history that we have gone through with this fishery, back in 1988 members of the commercial industry, the Florida Marine Life Association, actually petitioned the state to implement a suite of regulations to control this fishery. There was concern at that time that there were local depletions of many species, and especially there was a concern about angelfish depletion.

In 1990 recreational and commercial harvest regulations were adopted by the former Marine Fisheries Commission in the state of Florida, and the legislature created a seventy-five dollar marine life endorsement to help control effort and identify fishery participants. At the inception of this program in 1990, there were about 150 commercial fishers that possessed the marine life endorsements.

By 1998, however, the number of fishers with a marine life endorsement had increase significantly to over 700 fishers. However, we believe that – and this is true. We see this with a lot of endorsements as we put them in place in the state of Florida – only about 27 percent of those 700-plus fishers were probably active and were reporting marine life landings, so there was a lot of latent effort.

But in response to the rapid increase in the marine life endorsements, a moratorium on the issuance of new endorsements was requested by the same industry folks that first got this ball rolling back in the 1980's. We adopted that moratorium during the 1998 legislative session. Again, going back to some of the politics of this, at that time when the Marine Fisheries Commission still existed – this is prior to reorganization and the creation of what is now the Florida Fish and Wildlife Conservation Commission – the Marine Fisheries Commission managed saltwater fisheries, but the rules were actually promulgated by the Florida Legislature.

So, anyway, the legislature adopted the moratorium and directed the commission to report to the legislature about some form of a limited entry program that it would put in place to deal with any concerns about the use of this fishery. In 2002 we still hadn't really gotten to that point of addressing an endorsement program and the moratorium was extended until 2005.

Prior to that last extension and the moratorium expiring, the commission did approve a tiered endorsement system which is currently in effect. Again, this was approved by what is now the Florida Fish and Wildlife Conservation Commission. So how does this work? Prior to the moratorium being lifted in 2005, the FWC worked with the industry to implement this tiered endorsement system.

An awful lot of meetings, workgroup meetings, and public workshops went into it. The effort management program that we settled on removed the inactive endorsements and capped the number of participants in the fishery. Separate endorsement categories were created for harvesters that collected by diving – divers use various allowable gears such as handheld nets – and also those that harvest marine life incidentally as bycatch in shrimp trawls, crab traps and lobster traps. There is a certain amount of those fish that are caught as bycatch that are sold in the aquarium trade.

Well, where are we at with the commercial industry at this point? As I said, we've capped effort in this new program. That effort was capped at 168 endorsements, so, again, recall that leading up to that there were about 720-plus endorsements in place. There are no new entrants allowed in the fishery at this time.

In order to enter the fishery, an interested individual must purchase a transferable endorsement from someone leaving the fishery, so we have about 168 endorsements. In the most recent license year, 2008-2009, about 108 of those were transferable dive endorsements; 22 were non-transferable dive endorsements; and 38 were transferable bycatch endorsements; so about 146 of the total available endorsements out there are transferable.

This fishery has changed over time, and we've been responding to that in terms of our management and working with the industry over a number of years. There have been a lot of advances in aquarium technology, and that has allowed people to maintain basically miniature living reefs within aquaria instead of just a fish tank.

Again, recall back in the eighties the industry's concern primarily was about the depletion of angelfish, and that I think reflects at that time what most people were focusing on, going out and

collecting fish for their aquarium, the fish died, go out and collect more, and that was kind of the technology at the time, but the shift in technology has created a shift in the market.

We now see reef tanks. Many consumers are now seeking more invertebrates such as snails, anemones and crabs for their living reef aquarium, and so the FWC rulemaking has had to try to keep pace with that change in the industry and with the demand for more invertebrates. Also, the fishery is unique because many individual participants specialize in the collection of a few species within the vast array of marine life organisms, so you have a small number of individual industry participants

They're not all out there collecting everything they can find. Most of them are specialists, if you will, collecting certain types of organisms and selling them to their markets. The fishery collection harvest frequency for the marine life fishery is similar to the way a charter captain goes out only when he or she has customers.

Commercial marine life collectors usually make trips to collect when they have an order to fill for a specific organism. Again, recall these are all live organisms that are being sold, so it's an order-driven market. We have recently gone through an update of the Marine Life Program in the state of Florida and done some modification and tweaking of rules; again working with members of the industry and also with members of the environmental community and other members of the marine life advisory group that we've been working with.

At the time the endorsement program was being created we were directed by our commission to keep working with the industry to review and update the species listed in the rule that require the marine life endorsement for commercial harvest. There is an actual list of species that qualify or are limited in terms of their take under the Marine Life Endorsement Program.

Due to changes in the fishery and the market and the gathering of additional information, we feel it's important to make sure that list is up to date and current. Following the endorsement program implementation, we created this marine life working group – it was formed in 2005 – to reexamine the species currently listed in the rule that require the marine life endorsement for commercial harvest and make any recommendations for changes to that list. This workgroup is comprised of 13 members, including 10 members of industry, one person representing the Florida Keys National Marine Sanctuary, one member of the Aquaculture Review Council and one non-governmental representative.

Recommendations for rule changes were made by the workgroup to the FWC staff in July of 2008. These recommendations, of course, would go through our public workshop process. Changes were made to our regulations that were adopted and then became effective in July 2009. This just gives you some idea of the kinds of regulations that we have in place now.

We do have both commercial and recreational regulations in place, and they're very complex because, again, this is a very complex fishery. You need a number of licenses to harvest marine life commercially; and because species must landed and sold live, harvesters are required their catch while on the water in very specific live well requirements.

There are size and bag limit requirements for many of the fish invertebrate species in addition to the general cap on the number of participants. There is also a list of allowable gears that can be used for harvest. There are a number of things related, for example, to the amount of substrate that can be taken with a particular of invertebrate.

We have three different kinds of marine life permits, and any one of those must be possessed in order to harvest and sell commercially. The type of marine life endorsements that we have also determines what types of gears are allowed. There is also a recreational component to the fishery.

A recreational saltwater fishing license is required, and a recreational harvester is allowed 20 individual organisms per day for their personal aquarium. They're not allowed to sell. Within that 20 organism bag limit, only five of any one species may be harvested, so there is sort of a separate bag limit within an aggregate.

There are also bag and size limit requirements as well we gear restrictions and substrate requirement. And, again, in some cases with individual species where we do have information about the level of harvest, we might have additional restrictions in addition to some of the generic gear restrictions or size and bag limits.

This just gives you an overview of our current octocoral rules. Basically we, under our administrative code, designate soft corals with a couple of exceptions as a restricted species under our marine life rule. What this means is that commercial harvesters must hold a valid restricted species endorsement in addition to a saltwater products license and a marine life endorsement to harvest octocorals in Florida.

Octocorals are defined in our rules as any erect, non-encrusting species of the subclass octocorallia, except for those two species. Harvest of sea fans is prohibited in Florida waters. I won't read this, but basically this gives the actual octocoral rule that is in our administrative code. There really are no commercial bag limits for octocorals, and this finally gets us to the point of where we have the nexus with what the South Atlantic Council is looking at in terms of its Comprehensive Ecosystem Amendment for octocoral management.

There is no commercial bag limit for octocorals in Florida waters; however, our rule states that the commercial harvest of octocorals closes in state waters if the harvest of octocorals in adjacent federal waters is closed. Then there is the harvest of substrate within one inch of the perimeter of the hold fast is also provided and allowed for as long as the substrate remains attached to the octocoral.

Unlike commercial fishers, recreational harvesters are limited to six octocoral colonies per person per day, so there is actually a recreational bag limit, if you will, for octocoral; and also again just to point out, we're not really distinguishing individual species. Again, we also have a provision where the recreational harvest of octocorals closes in state waters if the harvest of octocorals in adjacent federal waters is closed. We have the same substrate provisions.

This just gives you some idea of the level of harvest relative to state and federal waters, and it becomes very clear quickly that statewide most of the harvest that's going on is occurring in state waters. As you can see here, the dark blue is federal waters' harvest and the light blue is state waters.

An annual quota, which is in the federal management plan right now, there is an annual quota of 50,000 octocoral colonies, and that's for the area south of Cape Canaveral. Now this quota has never been reached. Consequently, the harvest of octocorals in state waters has never been closed. In 2008 about 35,155 octocoral colonies were harvested from Florida state waters and 9,900 colonies were harvested from federal waters off Florida.

This just gives a specific look at the Atlantic waters, and you can see the same trend. In fact, the majority of octocoral landings in Florida come from the Atlantic coast, and in 2008 the landings were about 31,000 colonies from state waters and about 9,800 from federal waters. Now, there have been some questions about how we're actually monitoring or tracking landings for octocoral.

It is a commercial fishery in Florida so we do incorporate the landings under our Florida Trip Ticket System. All commercial marine life landings in Florida are required to be recorded using that trip ticket system. These tickets allow the FWC to monitor commercial harvest and effort through time and by location.

Each trip ticket contains detailed information about the harvest, including the date and location, the types and quantities of organisms harvested, the gear used and the price of each organism. A trip ticket must be filled out by a wholesale dealer everytime a marine life collector lands their harvest.

In many cases I want to point out, too, the marine life collectors also serve as their own wholesale dealers, so they basically are filling out their trip ticket as the wholesale dealer. Now we have marine life species' codes available for our commercial trip ticket system, but landings of marine life species are recorded on trip tickets using the list of codes unique to a particular species, genus or taxonomic group.

There are nearly 400 different codes used by the FWC for reporting marine life landings. The FWC provides a special trip ticket form to collectors and wholesale dealers for recording marine life landings, but collectors may also create their own trip ticket form. As long as we approve these forms, that's fine, and in many cases the collectors are working with such unique species or in a unique market that they're able to do that.

The current trip tickets that we use for most of the food fish harvest just simply wouldn't work for the marine life industry. This just gives you an idea of the top part of a marine life commercial trip ticket form to give you some idea of the information that we collect. There have been issues with how locations are reported on trip tickets.

The location from which organisms are harvested is reported using a fishing area code that we have. It's pretty much the same code we use for all of our commercial trip ticket reporting. For such purposes the waters off of Florida are divided into several fishing areas, and then under each area there are separate codes for subregions within the area such as bays, offshore waters or certain federal managed areas.

Reporting harvest locations accurately is important, especially when regulations or quotas differ by region; for example, wanting to know where marine life is being harvested between state and federal waters. As such, harvest from separate locations on the same day should be reported on separate trip tickets, but this does not always happen.

We have to bear in mind that the trip ticket information in terms of the location reporting sometimes is getting lumped, and also misreporting gives us less reliable information about harvest locations and could affect region-specific quotas. It gets to the issue of whether we're going to close the federal fishery or where marine life is being taken in state versus federal waters.

This just gives some idea of the complicated nature of the reporting codes that we use in the state of Florida. Again, you can see the waters off of Florida are divided into several fishing areas and then all of the subareas within each of those. It's probably like everything else, you have some commercial fishermen in this industry that are very diligent about reporting locations and others that simply lump a lot of their harvest.

In terms of octocoral reporting, we know there are about 40 species in Florida waters. Right now we have three trip ticket codes for reporting octocorals, and you can see those listed here. We do not have a unique code for each of the coral species. The codes that we have on species are commonly or historically harvested and on trade demand.

Many octocoral species are difficult to distinguish from each other so creating unique codes for each species could result in misreporting and probably would result in an even more cumbersome reporting process that marine life collectors would be unable to keep up with. That's really just a summary of where we are.

This is just some information about harvest in Gulf waters. You can see there is virtually no federal waters' harvest in the Gulf. This is just to give you some idea of the fishery, how we're managing it currently and some of the issues related to reporting of octocoral in state versus federal waters. Thank you.

DR. BELCHER: Thank you, Mark. Questions or comments for Mark relative to his presentation. Thank you, Mark. I think at this point we're going to recess for lunch.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Sheraton Atlantic Beach Hotel, Atlantic Beach, North Carolina, Monday afternoon, December 7, 2009, and called to order at 1:00 o'clock p.m. by Chairman Carolyn Belcher.

DR. BELCHER: We'll go ahead and get started and return to Snapper Grouper Amendment 17A. We'll go back to Nick's presentation. If folks still have comments and questions for Nick, now is the time. Again, if you want to see the model run, now would be the time ask him as well. I'm opening it up again for questions or comments or a request for the model run if anybody wants it. Luis.

DR. BARBIERI: I just want to make a comment that based on Andy's question and Nick's response I got the impression that the take-home message is that the model is really sensitive to those changes in effort shifting, so this is something that we can actually already take up as one of the messages of this analysis is that effort shifting – any changes in effort shifting will likely cause this analysis not to provide the necessary reductions; is that correct?

DR. FARMER: Yes, and just to touch on that a little bit more, although the model doesn't provide an actual bottom end in terms of effort shifting, you can extrapolate what that bottom end would be because if you look at the model runs for Alternative 2 under any input parameter scenarios that you deem appropriate, Alternative 2 basically deals with just the red snapper fishery being closed.

The idea of effort shifting is basically going to take away from the reductions that you gain by implementing spatial closures. If you run the model under an Alternative 2 Scenario where there are no spatial closures with whatever input scenario you think is appropriate, that's going to give you the bottom-end percent reduction; so basically if you input some spatial closures and you have some effort shifting, that's the lowest amount of reduction that you could get under that scenario.

It's going to be somewhere between the most generous, which is the assumption that there is no effort shifting, and that Alternative 2, so that does give you bottom end for that. Now, granted, there is going to be some additional sensitivity that the model is not going to capture, because I have no way of knowing where spatially effort shifting is going to occur.

We've approached the Science Center and the SSC with this sort of stuff before. Basically the honest answer that everybody has given and it's the answer that I would be forced to give is I don't know how effort shifting would happen. Predicting angler behavior is extremely difficult. I think that we do know that it's going to occur and the council probably needs to keep that in mind when they're making their considerations, but I have no way of explicitly modeling that.

DR. COOPER: For Alternative 2, though, you assume that when red snapper is closed, none of that effort gets directed towards other species in the complex, right? You assume those trips just aren't taken which underestimates the effectiveness again; that if effort shifts elsewhere, you will still have bycatch issues.

DR. FARMER: With the input scenarios there, you have the option of deciding whether there are any impacts coming from previous amendments, 13 and 16, and you also have an option for selecting whether Amendment 17A will impact only targeted red snapper trips, so trips where the

guys explicitly said on the MRFSS form they went out to catch red snapper and they caught red snapper, which is very rare, right, compared to directed and targeted trips, so you can turn that toggle off and you get that output.

DR. COOPER: But in the description of the effect of Alternative 2, what toggle was set on versus off; what is the assumption? When we're looking at Alternative 2 effects, what is the model assuming?

DR. FARMER: It depends on which slide you're referring to. That's why I have the model available. What I was hoping to get out of this SSC presentation more than anything else I think for the council's benefit would be maybe some guidance as to what you feel are appropriate input parameters.

I've given a lot of options in this modeling approach and they all have some defensible thing about them one way or another. It's very difficult to tell because a lot of it involves predicting angler behavior, which is extremely difficult, especially as extreme as Scenario 6, so if we can get some input on that.

DR. BUCKEL: It seems like in addition to the angler behavior, as this stock rebuilds we're going to have some new recruits of smaller fish potentially occupying shallower areas; and if there is an effort shift into shallower areas, then the interaction with those smaller fish could increase.

That's inshore or offshore, and then you have the whole component of stock rebuilding and numbers increasing off of North Carolina like they were traditionally, and right now that is going to be completely open. So it's not just the angler behavior; I think it's the population response and age structure changes. How have those been dealt with, Nick, or have they been thought about?

DR. FARMER: It's interesting that you bring that up because that's another perfect example of how difficult this is to tease out; because if you get an increase in stock in inshore waters, yes, you're going to increase your encounters with red snapper, but you're also going to pull down the average depth of fishing that's encountering red snapper in which case you tweak the release mortality.

So it's very difficult to examine all of these interacting parameters in any truly concrete this is the number, this is the percent reduction you're going to get. That's why I built the model that's so interactive so that you can see, when you go in there, what impacts – I mean, if you go in there and you tweak release mortality from 40 percent down to 30 percent with the recreational fishery, the amount of things that you can do in terms of flexibility for management decision-making go way up, but can you defend that assumption? I don't know, it seems like there are arguments for and there are arguments against and neither one of them are super compelling to me, and so I went with and what I presented you in the PowerPoint just leaving it as is.

DR. BELCHER: Further comments or questions for Nick? Thank you. Okay, next on the agenda under this item is an updated analyses from Erik. Erik has actually has two presentations, but this is a stand-alone from the second. This first one will be just catching us up to speed with what has been done for analyses to date.

DR. WILLIAMS: What I will be going over is Attachment 25. Unfortunately, this is a rather large attachment, and so I have, unfortunately 77 slides here to go over, but I will try to go over them as quick as I can. Here are all the things that are in this Attachment 25, and they could be treated as separate things or not, but there are conversion factors for tilefish, there is a P-star analysis for gag grouper, a whole series of red snapper projections, a red snapper sensitivity analysis and some results from the age-structure analysis this summer for red snapper.

I'll skip the top two; otherwise, I probably need to go through all this now. I'll try to go through them quickly. The first set of projections involves rerunning the red snapper projections assuming various levels of recruitment in 2006, because there is this suspicion that the recruitment in 2006 was high, so we ran three different scenarios of high, very high and extremely high, and I'll go over what those are.

Here they are shown in the results and high was equal to 50 percent of the maximum observed recruitment in the whole time series; very high was equal to the maximum recruitment that we saw, which I believe was in – I can't remember what year; I think it might have been 1984, somewhere like that – and extremely high was assuming one and a half times the maximum observed recruitment in the assessment.

You can see the values off to the side here for those various assumptions. Now, as you'd expect it's a short-lived sort of realization in the projections because it's a one year class event that gets bumped up and then sort of comes back to their sort of equilibrium state over time. Here is just a look at – again, all of this is in the report, so I won't go into too much detail, you can look these up for yourself.

Here are the table results if you want to see the actual biomass landings and so forth that change as a result of this recruitment. We did this analysis at F 40 percent and also at 75 percent of F 40 percent. This would be OY, I guess – I don't what we're calling that, but the target that we've been working with so far, the target fishing mortality rate. Again, here are the tables.

But what is most important about this are the assumptions. These projections reflect the belief that the 2006 year class was strong. However, we don't know how strong. This is pure guess work, essentially, so we need to take it in light of that. Unfortunately, the council decided to move forward as their preferred alternative assuming the very high recruitment in 2006. We'll have to decide if that's appropriate or not.

Some other issues to be aware of is that the steepness in all of these projections is fixed at 0.95, which, if you recall, from our review of this assessment that was the upper bound, it was hitting that upper bound, we didn't like it, but because of some discontinuity between what the initial projected recruitments would be in the short-term projections, we decided to stick with the 0.95.

If I recall – I haven't looked up the language on this – we said that this was only to be used for short-term projections. Well, unfortunately, this is also being used for long-term projections; so, again, another issue to be concerned about. Some other assumptions, we had to fill in some MRFSS values, so we filled them in as best we could using regression estimates.

And just some caveats that we've got to keep in mind, long-term projections are extremely uncertain. And other assumptions, we assume that the initial abundance that we estimated from the last year of the assessment, which sometimes that last year of the assessment can be one of the more uncertain estimates from our assessment is accurate.

We assume that the fishing fleets are going to be operating proportionally to each other in the same way that they have been in recent years; in other words, the percent catch that comes from commercial and recreational remains the same. We assume no change in selectivity and so on. There are typical assumptions.

Here is an important statement from the SEDAR 15 Review Workshop Report, which says, "The panel discussed the value of projections made beyond five to ten years. Clearly, the uncertainty increases rapidly with time as the currently measured stock is replaced by model values into the future. Realistically, the projections beyond the range of the predominant age groups in the stock are highly uncertain. In this assessment the best that can be concluded is that rebuilding times will be very long."

I thought I would stop there because this is one good breaking point. Then the others, we'll decide whether we want to break during each of these of if nobody has questions, I'll just plug right on through and we can have more questions at the end.

DR. CIERI: What is the evidence for strong recruitment other than a high degree of landings?

DR. WILLIAMS: The evidence so far is we saw a bump up in discards in 2007 and then an increase in landings in 2008. The age structure does show a strong peak in 2009 right around age four or five, which would correspond to this. One of the issues is this age structure seems to be peaked around age four or five for most of the years, unfortunately, though it's hard to tell.

DR. CIERI: That's one of my questions. As you go through a catch-at-age matrix, you can, of course, identify strong year classes. Are they fully recruited in the fishery?

DR. WILLIAMS: No yet; those 2006 wouldn't be. It would be just now getting fully recruited to the fishery.

DR. CIERI: So that is highly – wow, okay.

DR. COOPER: To further clarify, the current assumption is the one where the 2006 recruitment equals the maximum on record?

DR. WILLIAMS: Correct.

DR. COOPER: And how does recruitment in the most recent years compare to the maximum on record?

DR. WILLIAMS: That's a good question; I'd have to look at the assessment. I can't say right off the top of my head. Any other questions; otherwise, I'll move on? The next is a rather mundane set of projections. This was all at F 30 percent, which seems to be perceived as a potential alternative benchmark. I don't see it that way.

The general result that you can expect from this is F 30 is a higher fishing mortality rate, so you would expect higher landings to come out of this and higher Fs relative to the F 40 case. Again, all of this is in the document; and for the sake of brevity I'm going to skip a lot of this, but, certainly, if there are any questions on any particular run, we can go back to it.

Then here is another set of projections most recently done here in November, and this represents a more complete filling out of all the possible scenarios with that very high recruitment. In other words, the initial time we did the various scenarios of recruitment we just looked at 75 percent of F 40 and Fcurrent, and so this is filling in the rest for the very high recruitment, looking at 65 percent of F 40, 75 percent and 85 percent.

In that report is a table showing the difference between the F 30 and F 40 proxies. Again, the best slide to go to is this one. Jack McGovern put this together, and I appreciate him doing this. This is an analysis of all the projections. The ones in white were the ones that were actually run, and the ones in yellow are kind of filled in using sort of a linear interpolation between runs.

What you can see is we've run the base model at Fmsy which in this case is assuming F 40 percent as the proxy for Fmsy; then at 85 percent, 75 percent, 65 percent and then at Frebuild; and again over here at F 30, and then we ran the 75 percent of F 40 and F 30 across this way, so are the sort of projection analyses that have been run to date in white, and the yellow has been filled in by interpolations.

Again, this pretty much restates the original assumptions. We have to be careful because there are a lot of assumptions here. Why don't we stop there; so this sort of ends all the projection analyses at this point. Any questions?

DR. BARBIERI: Erik, are these new projections; was this something requested by the council, that the council would like to see? I just want to understand the context.

DR. WILLIAMS: Yes, these all came as a request from either the regional office or the council. I think most of the projection analyses came from the regional office, from Roy Crabtree as a request to the Science Center.

DR. BARBIERI: And then about the 2006, the strong year class, I'm looking at that report, the aging report that Jennifer Potts put together, looking at that information it seems like for the

summer of 2009, which is when those – this is like a number of fish, almost 2,000 fish was sampled between North Carolina and the Florida Keys for re-evaluating what the age composition of red snapper would be during the summer months when larger fish seem to be available further inshore. To me the results of that really show the stock that matches what the assessment had predicted, but it shows this really strong year class peaking at age four, which would be then the 2005 and not the 2006 year class.

MR. CARMICHAEL: Isn't that because you have age ones recruitment so it's the 2005 year class technically?

DR. WILLIAMS: I think that's right.

DR. BARBIERI: Yes, here it's between Northeast Florida and Georgia, I mean of this almost 2,000 fish sampled, about 60 percent – I mean, it's a really strong – so, anyway, to me this sort of confirms – not confirms but further supports the idea of the strong year class, but I would see this as the 2005 year class recruiting at ones in 2006.

DR. WILLIAMS: Right, except that it's hard to determine that from a single age composition in a single year that's expressed as a proportion because it can get masked by neighboring low recruitments on either side of it, so it's hard to tell for sure. I mean you can probably say somewhat that it's a good year class but you cannot say how good by any means.

DR. CIERI: I've got a really hard time doing that for something that's not even fully selected in the fishery. This is sounding a whole lot like counting your chickens before they're hatched in a lot of respects. It's not fully recruited. Is there any fishery-independent index that backs it up?

DR. WILLIAMS: No.

DR. CIERI: So all you've got is a proportion at age; that's a lot of scant information in which to say that you're going to have recruitment well over and above occurring in the pipeline.

DR. COOPER: And I'm actually sitting here looking at the assessment document. Basically the maximum recruit occurs in it looks like '84. Since '85 onwards it has been hovering around 300,000; it got up over 4,000 like twice since 1985, so to give an idea of the last 20-some-odd years, it hasn't gotten much over four at all, and we're projecting here, based on fairly scant evidence, that it's double that, almost.

MR. CARMICHAEL: I totally agree with Erik that it's really hard to predict how high "high" was, but I don't think the evidence is as scant as it might be suggested. If you look at the body of evidence which goes back to the discards in 2007, which we know discards are primarily size based – unless they're smaller fish – it went from averaging 130, 150,000 fish up to then 455,000 fish.

I know it's MRFSS data and there are uncertainties in MRFSS data, but it was a huge slug of discards in '07. Then it was a bunch of discards and an increased catch in '08, and it was a

marked increase catch in '09 which led to people who look at the preliminary wave data to start going, well, what's going on? Then the age sampling came in which showed 60 to 70 percent fours.

I think the evidence is clear that there is a huge year class. How big is big is why I think Erik and them did the three different scenarios and the council picked the highest, I think the SSC should definitely focus on sort of type of things you think is an appropriate way to deal the year class, but I think if you look at all the evidence it's kind of hard to say that it's just scant that there was a good year class.

Clearly, there was a good year class because we've got records over several years from multiple sources, and that's really the only explanation that makes any sense. But whether or not it's three times better than the one before it or ten times better or as high as we've ever seen, since we don't have the surveys we really can't say.

DR. BARBIERI: Yes, and I guess that's the million dollar question. How were those levels, Erik, chosen? You were just trying to scale up by double, triple what the average recruitment had been? It would be very difficult to measure it; I mean, first to have an idea how realistic and be able to evaluate if this is really meaningful or not in terms of –

DR. BOREMAN. I'm just wrestling – I'm just seeing this for the first time, so excuse my ignorance which is more often than not. I don't see the value of doing this exercise. To pick one year class and say it's high, the type of modeling that you're doing is going to return to an equilibrium of some kind. It's just a question of how soon does it return back to equilibrium.

Now that I'm looking at the time series that you have for recruitment, a more valuable exercise is where we had a good year class in 2006 or good recruitment in 2006, it looks like it was way above average; what is the probability of that happening again, what is the trend in recruitment that we're seeing and approach the analysis from that direction.

Are we likely to see that level of recruitment again soon or not, but just to put one blip on the screen and then manage a stock based one good year class, I don't think that's a realistic way of approaching the answer to this problem. It's how often can we expect to see a year class of that class in the foreseeable future given the pattern in the recruitment that we've seen in the past and any potential trends that are going on.

DR. BARBIERI: And to that point, this is why I was asking how these levels were – it will be difficult for us to really evaluate how realistic these scenarios would be. I do think that, yes, the 2005 year class was strong. I think we have evidence all together to show that, but looking at the steepness and the life history pattern of the species, we have no idea when this is likely to happen again. There are species like this that will go through pulses of strong recruitment from time to time, and I cannot really evaluate the reality of those numbers there, you know, that scale that is really high.

DR. WILLIAMS: Let me answer quickly I think this little table right here sort of sums it up. This is the recruitment with no change. Just using our base projection model, this is the high, this is the very high, this is the extremely high, and again noting that the very high is essentially equal to the maximum we've ever observed, so I think that gives you a sense of where it lies with respect to the sort of base configuration of the model, which the base configuration of the model essentially resamples all those historic recruitments and uses those to project forward in time. In essence, in our scenarios, when we're projecting we are including this 753,000. Of course, it only occurs once out of 20 or 30 years, but it's in there when we're projecting forward in a stochastic sense.

DR. CIERI: Yes, that was pretty much going to be my question is whether or not you were resampling with your recruitment trends. I mean, if that's the case, then those highly unlikely but very high events are already incorporated into your current projections. It is accounted for within the assessment. You just happened to get lucky, maybe. Again, just going back to the fact that they're not fully recruited, that gives me a lot of pause.

Then to assume that not only is it just large, larger than average, that it's humongous, that's something else, to assume that you have good recruitment, yes, maybe; do you have above recruitment, absolutely; but you've got the most fish ever that's here. Come on! That becomes a little bit more difficult to really swallow.

DR. WILLIAMS: And probably another thing to look at, which is again why I focused on Jack's table that he put together, is this sort of summarizes the difference in the results with respect to this is with respect to percent reduction that would be required to end – or is the percent reduction that would be realized under these various alternatives – or the percent needed to end overfishing is what I should say.

So this is how much of reduction is needed under these scenarios, so really the difference between – let's say this would be probably our base run, it requires a 90 percent reduction; and assuming a higher recruitment, you're not really gaining a whole lot, but, again, when you're at these low levels, those little percentages seem to mean a lot.

DR. CIERI: And we're scheduled for an update for this year, so, of course, they are going to be fully selected and you will get a better handle later on this year as to what is going on. If you start seeing in the catch-at-age matrix as well as some other things – and you will see it and you will see it by the end of the year, so that is one thing, if it's real. If it's not, then you don't want to get to a point where you do the update and that huge year class in not as big as you thought it was and then you're really in trouble.

DR. BELCHER: Any other comments or questions at this point for discussion? Chip.

MR. COLLIER: Actually, I did have a question, and it's probably because I have missed past discussions, but discard mortality has been coming up a lot, and it seems like it would influence the results of this projection study quite a bit. How was that handled and were there sensitivities run on that?

DR. WILLIAMS: That's a good question. No, there weren't sensitivities run to that. We just assumed the 40 percent and 90 percent that came out of the assessment model. That is a good point. Any other questions?

DR. COOPER: So when you were looking at that table, that 75 percent for Alternative 4, in looking at Attachment 23, that has a 50 percent of rebuilding by 2032; is that correct? Am I parsing these up correctly -- Alternative 4 in the draft plan? I may be getting ahead of myself here.

DR. WILLIAMS: No, I think you're right, this table should correspond to the alternatives. Yes, so right now the preferred alternative in the amendment I believe is this; assuming the very high.

MR. COLLIER: That's the preferred alternative proposed by the council? Was that by the SSC or was that by the council?

MR. CARMICHAEL: It's by the council.

DR. WILLIAMS: I don't think we selected the preferred alternatives; do we?

MR. COLLIER: I would think that we would in this case for best available science; pick the value which we think would most likely succeed.

MR. CARMICHAEL: I think you could pick the value or you could make a recommendation or you could make a recommendation if you think some of these assumptions are inappropriate. As you discussed some of the assumptions earlier about the area evaluations and you felt that some of those assumptions were inappropriate, I think that would be the right discussion.

DR. CIERI: The difference between 90 and 85 by now and 2032, my guess is that your variability around recruitment is a whole lot more than 5 percent in general over that – I mean, there is almost no statistical different that you can see between assuming either or the base of extremely high.

MR. CARMICHAEL: That's the reduction that they have to take the first year to end overfishing.

DR. CIERI: Okay, I thought that was the probability of rebuilding during that timeframe. Again, that's not much of difference, 5 percent.

DR. WILLIAMS: Yes, because it is only the percent reduction needed in the first year basically to end overfishing.

DR. BOREMAN: This goes back to the slope of the stock-recruit relationship. All your plots show you almost immediately return to some equilibrium level. With that slope that high, I'm

not surprised by that outcome, but obviously your analyses are very sensitive to that stock-recruitment relationship, so hopefully you're doing some more work in that area.

MR. COLLIER: Was your assessment balanced or was it to a certain value of steepness or did you just apply that?

DR. WILLIAMS: No, it was fixed at 0.95 because we had no other value to go with. That was the upper bound and after much debate it was at the June meeting where we went back and forth about how to do projections with this. Any other questions before I move on to the next?

MR. CARMICHAEL: I guess another part of the steepness discussion was what the review panel mentioned is that perhaps it does appear in the short term that the steepness is very high because of the low stock abundance, and that's what was behind the statement Erik made where they said, yes, they recommended that short-term projections be used, so we know it's in the management system now. The SSC had done that at one point and then they need to have a long-term projections to figure out rebuilding times and all that, so the realities have pushed it into another realm.

DR. WILLIAMS: Okay, the next part of that Attachment 25 is a sensitivity run that was run immediately after the last June council meeting, which essentially was looking at a hypothesized dome-shaped selectivity for the recreational sector. Specific questions that should be asked are what are the effects on the stock assessment model and does the data support this hypothesis?

I'll run through this. What we did was rerun a sensitivity run with this selectivity curve shown here, which is very similar to what Dr. Frank Hester had hypothesized. It's not quite exactly what he had meant to hypothesize. We sort of picked it out of the report and applied it. It essentially assumes no fish older than age ten-plus in the recreational sector.

We applied this dome-shaped selectivity. The question immediately is, is this appropriate? One of the first things that comes out is it probably is not because we do see a lot of samples of fish that are older than ten, and in fact the two oldest fish aged in the whole red snapper otolith collection in the South Atlantic came from the recreational sector, so that sort of puts a little bit of a damper in any assumption about dome-shaped selectivity in my mind.

We went ahead and ran various sensitivity runs using this selectivity. We applied it in three different ways. We essentially applied to the recreational sector for all years. Then we applied it just to the early years from 1945 to 1983, and in the subsequent years allowed the model to estimate a dome-shaped selectivity.

Then in the third scenario we allowed the model to estimate a dome-shaped selectivity for all years. Here is sort of a quick sketch of some of those results. The F 37 was again the dome-shaped selectivity applied to all years that came from Hester, using the Hester F 38, which was the second scenario. We used the Hester selectivity in the early years and then we used the model for later years.

Then the last one is we modeled all years, and this is shown relative to the base model. You can there are certainly some changes with respect to historical perspectives on F, but in the recent years not too much difference in these sensitivities. Here is with respect to spawning stock biomass. There is not much difference in these runs.

Here is a look at the selectivities that were estimated by the assessment model when we allowed it to estimate. Again, we had two scenarios where we had estimations of dome-shaped selectivity to occur. One was beginning in just 1992. We had a selectivity curve and then we had a separate selectivity curve prior to 1992 because there was change in the minimum size limit. This is showing those estimated curves.

Here is a sketch of the sort of outcome of all the sensitivity runs that we've run for red snapper sort of in a phase plot. What you can see here is this is where the base run lies. Here are two of the scenarios where we partially estimated the dome-shape selectivity, and here is the run where we fixed it to the Hester-like selectivity, and we ended up with this result.

With respect to biomass, almost no change. Where we get the change is the perception of overfishing. Here is just a table of some of the results to look at the values. Again, you can see the relative insensitivity here to the biomass ratio. However, this fishing ratio does appear to be affected by these assumptions about selectivity. The question is, is dome-shaped selectivity likely for the recreational sector; in other words is that a reasonable assumption?

Keep in mind that selectivity is a term that doesn't apply to just gear selectivity. It also applies to spatial and temporal availability and gear selectivity are sort of put together. You can't really just look at catch at age necessarily and determine whether you have dome-selectivity or not. We have to look at some other factors besides just inspection of the age structure.

Flattop logistic selectivity is common in most of our fisheries because fishermen tend to target the largest older fish because they tend to be more valuable, so it makes sense. A dome-shaped selectivity again implies that the oldest or largest fish are not available to the fishery for some reason.

Some factors that tend to cause dome-shaped selectivity might include the oldest fish moving to a non-fished area, some kind of ontogenetic shift, fish could outgrow the gear being used for capture – a classic example is gill nets – or regulations might inhibit the ability to capture the oldest fish, like a slot limit or something like that. Those are the factors that we to tend to see that cause dome-shaped selectivity.

Red snapper are thought by some or suspected to move offshore to deeper waters as they get older. The question really is, are they moving far enough offshore to get outside the range of recreational anglers. For charter and headboats this is certainly unlikely. We know that they go all the way out to some of the deepest waters and out to the Gulf Stream, which is sometimes beyond the shelf edge.

Off the coast of Florida that shelf break actually gets closer to shore so the travel distance is not as much of an issue. In some areas the distance offshore could be an issue for recreational anglers for some charter and headboats. The other question that has to be asked with this offshore movement is how well defined is it?

Fishermen have claimed that inshore movements with bigger older fish occur during the summer months. This is sort of anecdotal information, but if that's the case that actually would support a flattop selectivity, because that would suggest that the bigger fish are moving inshore. The problem is we really don't have the data to say for sure. This is a data limitation issue.

For some other snapper groupers this depth-size relationship is not very well defined. I think you could even say that you can't compare it to the Gulf either. We know, for example, that red snapper, there is a clear difference between the Gulf of Mexico and the South Atlantic in that the Gulf sees a lot of these young juvenile red snapper inshore and they get captured in the shrimp fishery. That's not the case in the Atlantic, so clearly we have some kind of different ontogenetic shifts going on in the Atlantic compared to the Gulf.

Again, trying to answer this question about dome-shaped selectivity is likely for the recreational sectors, the commercial sector is very likely to be flattop and not dome-shaped. They cover the full depth range of red snapper. Bandit rigs are pretty much designed to catch red snapper, and there is a clear economic incentive to catch bigger fish.

One thing we can do is I think we can make a safe assumption that the commercial sector is flattop, and then we can compare the recreational to the commercial and see if there is some indication that there might be difference in the age structure which might indicate a dome-shaped selectivity.

When we start to look at that exercise, we don't see that. In fact, we almost see the opposite. In this example we're looking at a log scale transformation of the proportions at age, and I'm at look at what would presumably be the peak age, which would be age three or four. So we're looking for that decline in the age structure after the peak age to see if there is a difference in that decline, which would indicate perhaps a dome-shaped versus logistic selectivity.

There is no difference here. We broke it down by years. Since 1992 to 2000 we actually see the opposite of what you would expect. If this were the headboat and this were the commercial, then it might suggest that there is some dome-shaped selectivity, but it's actually the reverse that seems to be occurring where the headboat, in this case the recreational sector, is capturing the older fish at a higher proportion than the commercial.

Again, this is looking at later years. From 2001 to 2006 the data starts to get a little sparse, but again there is no indication that there is any difference. Another way to look at this would be to do a catch-curve analysis. In this case, in order to show a dome-shaped selectivity, if it's occurring and you're assuming it's not, you would expect to see a higher total mortality rate would be an indicator of dome-shaped selectivity. Am I getting that right or the other way around?

In this case we're not really seeing that pattern. There is not much difference here between the two as far as catch-curve analysis. Now, of course there is a lot of uncertainty there. That pretty much ends that sensitivity analysis. I'll stop there before the next – I don't know if there are questions about this dome-shaped selectivity analysis.

The last thing I have in this attachment is the red snapper age structure from 2009 sampling this last summer. This is the last part of Attachment 25, which is a short report on the red snapper age structure analysis from the summer of 2009. There was some increased effort and help from the commercial and recreational fishermen to provide samples for age analysis.

The data was collected June through August of this year. We collected from North Carolina all the way to Florida from both commercial and recreational sectors. The data were provided by the Southeast Fisheries Science Center, the FWC and Georgia DNR. An age workshop was conducted also as part of this to ensure that the reading was consistent, and the sampling followed the agency's protocol.

So even though we increased effort, there was no change in the sampling protocol that occurred. Again, this is in the attachment, though, so if you want to take a closer look at it, this is basically showing the distribution of samples as they occurred by area and by sector and by month. Just a quick mention that the bulk of the samples came from the Northeast Florida area; and in this case most of them came from the commercial sector; primarily in June and July is where the bulk of the samples came from.

Here is a look at the length distribution of the samples, and this is broken down by area, so this is for Northeast Florida. The total sample size was 1,195. Here is the same for Georgia and note the small sample size relative to Northeast Florida, so here we're down to 177 samples. Then the rest we combined into one plot shown here, and again you can see the small sample sizes in North Carolina, South Carolina and the Keys. Here is the age structure from Northeast Florida; and as Luis was mentioning earlier this is that large age four, which would be our 2005 or 2006 year class, whatever you want to call it – we'll call it the 2005 year class and it shows up right there. Here is the rest of age structure.

MR. CARMICHAEL: Did anybody look at that blip in that sort of bimodal appearance in those length distributions and wonder what ages that might represent? I'm not that up on like how long the seven-year-old fish are or the ten-year-old fish. Is that blip sort of that seven to ten year old that you see right there?

DR. WILLIAMS: I don't know; somebody who knows more about age and growth.

DR. BARBIERI: I think the report actually shows a plot of a size at age.

DR. BOREMAN: If you go to the size-at-age plot it looks like there is a period of years between around seven to eight years old. The sample size has really dropped so maybe that's just an absence of recruits for those year classes, and that's causing a fine modality here of distribution.

DR. WILLIAMS: Yes, actually now that you point that out, that's almost looks exactly like what is going on. I think we left off with Northeast Florida. There is the Northeast Florida age structure. Here is Georgia, very similar – even though it's only 177, but still shows a very similar pattern. Here is the Carolinas and the Keys. We just looked at this so here is the size at age, and then here is Georgia where we start to lose data and here is the rest, so our sample sizes drop dramatically at that point. I think that's all I had for this Attachment 25.

DR. BELCHER: Further questions or comments? Okay, so that's relative, obviously, to the cadre of things that Erik's crew had given to do since back in June. At this point what Erik will do is he's got another presentation, but this is to help us kind of go through and get at 17A and actions items relative to 17A for the agenda. Andy.

DR. COOPER: Just going back to John's point on the sample size issue, looking back to the stock assessment, the lowest recruitments on record were the early mid-nineties, which kind of coincides with the low ages in the sample sizes.

DR. WILLIAMS: Right, I didn't mention it. John and I have looked at this and that whole age structure actually matches quite well with what the assessment was saying about historical recruitment. Okay, since I'm one of the SSC leaders for this Amendment 17A – I'm not the only one, but I thought hopefully my fellow leaders won't mind me sort of starting the conversation off with some preliminary thoughts on this –

DR. BELCHER: This is one of the ones that we had had – I think I had Anne down as rapporteur for this and Anne Lange is not here. I had asked for someone yesterday to do it. I think I had indicated John Boreman, but for folks involved I really would like to – this is the point now that we really need to start focusing in for our report building because this is our biggest discussion based on the information that we have in front of us and what we have received today and what our consensus statements and what our discussion is going to be, so pretty much start capturing information at this point.

DR. WILLIAMS: I think as we probably got from Rick DeVictor's presentation sort of the major actions in Amendment 17A are specifying ACL, ACT and AM for red snapper, status determination criteria, a monitoring program, rebuilding plan and modifying management measures to limit landings to the ACT. In our roadmap we have specific SSC actions related to Amendment 17A, and I'd go over those to make sure we're all clear on what we're being asked for in the roadmap.

The first one is do management option analyses, including projections, follow acceptable practices; are they based on appropriate inputs and are assumptions clearly stated and reasonable is our fist action item. I'm going to run through these real quick and then we'll come back to them and probably address them one at a time might be the best way to do this.

The next action item was is the assessment sensitivity considering dome-shaped selectivity conducted appropriately and does the SSC agree with the conclusions of the analysts? The next

two is are technical values in the amendment accurate and consistent with SSC recommendations, and are options included that will end overfishing? Will any options affect fishing level recommendations; and if so, are those effects identified and addressed?

Will any of the options impact future data collection and assessment efforts and are measures in place to address such impacts? Are biological and technical consequences of the alternatives accurate and completely and clearly stated? Those are sort of actions. Now we get into a little bit of my opinion here so just bear with me, but this is my first read on this and I raised some concerns based on just the initial examination of this amendment.

First off is the rebuilding is not consistent with our ABC control rule, which recommends a 70 percent probability of success, or at least it's not clearly stated whether it is or not. In other words, we have not been shown a table of probability of success for each of the rebuilding alternatives in this plan, and we clearly would need to see that under our ABC control rule.

Then my second bullet here is MSY values are not a decision for management, which we sort of all mentioned a little bit earlier. Here is an overarching concern of mine is there seems to be what a good term for it would be called cumulative optimism in the assumptions in this amendment.

We're assuming the very high recruitment in 2006. We're assuming a steepness of 0.95, which is the upper bound in all projections. The area analysis that Nick went over, which we have discussed a little bit, had some very optimistic assumptions, assuming no effort shifting, a hundred percent compliance in the closed areas, no movement of fish across area boundaries.

In some cases it assumes some reductions in discard mortality rates which could or could not – I mean, that's debatable. It assumes spatial data and discard data has been accurately reported. Again, that might not necessarily be optimistic, but it's an assumption. It assumes that the bathymetric assigned areas result in the same recreational savings as the whole grid areas. That one is not a good assumption.

It assumes all recreational trips with one red snapper per angler will be eliminated under Amendment 13C, 16 and those other previous amendments. My concern here is any one of these by itself we might be able to live with, but in the totality this becomes a very serious case of cumulative optimism.

DR. COOPER: Also, just to add to that, the current preferred rebuilding timeline is at its maximum, 2044, so all the probabilities of success is taking the longest time possible as well.

DR. WILLIAMS: Right. I probably haven't captured all of them, but this is a big concern. Some other ones to think about are the risks or probability of continued overfishing is not really quantified in the area analysis very well. In other words, it's not a stochastic analysis, which it probably should be because of all the uncertainties and assumptions that have to be made and those assumptions have a range of possibilities which are not carried forward really in that analysis like they should be.

That gets to the second bullet that a lack of variance estimates masks the potential continued risk of overfishing. This is what I propose, but we can tackle this any way you want, is go through each of the action items one by one and start crafting responses to them as one way to tackle this. I leave it up to the group to offer – otherwise, I'll move forward and we could go through this exercise. My understanding of this roadmap is there is an expectation that we will respond to each of these action items with a consensus statement.

If we were to consider this first one, do management option analyses, including projections, follow acceptable practices and are they based on appropriate inputs and are assumptions clearly stated and reasonable, I think we could say – I mean, again, this is me putting this out here. It's open for any hacking up, slashing, rewording, whatever. This is just one person so keep that in mine. I don't want to overly influence things.

Do data inputs for management option analyses seem appropriate? One thing that we could say is that the assumptions are not always clearly stated, but I think we might want to say something to the effect that in whole these assumptions do not appear to be reasonable. Maybe that's not the right wording.

DR. BOREMAN: Yes, I'd use the term "realistic" rather than "reasonable".

DR. COOPER: And also to that point, when we look at some of the management options, I believe, they give a range of effectiveness which, again, they don't state that range. They assume that all of those are equally valid when in fact they're based on a whole different suite of assumptions, and they basically say based on assumptions they could go anywhere from 35 percent to 60 percent and treating that the 60 percent is just as valid as the 35 when in fact they're based on very specific assumptions and never outline the assumptions associated with those.

When just looking at the ranges, you don't really know how to compare apples to apples across these alternatives because the different assumptions may work differently in a different alternative, and so we really don't know how to compare the effectiveness without outlining the assumptions and whatever those probabilities are associated with them.

MR. CARMICHAEL: Again, talking about the assumptions, it will certainly help building the record in supporting your opinions if you'd talk about which ones are not met and perhaps give some guidance as to maybe some range that you think should be explored. I'm certainly thinking that would probably help Nick who has done quite bit of this, and Erik and them will have to do some more of this well down the road.

DR. CIERI: Well, the first one is the very high recruitment. I don't think I have ever seen projections for rebuilding goals based on this assumed very high recruitment. It's always gone back to the stock-recruitment relationship. Basically it comes down to that median of your probabilities, and then everything after that is gravy. But to walk in the door thinking that

you've already got really good recruitment, yes, that is an assumption that I think is just highly unreasonable.

DR. WILLIAMS: And part of those projections is also not only the very high recruitment in 2006 is we're also assuming the highest value of steepness, too, which the review panel said we shouldn't trust because it was hitting the upper bound. We're essentially using the upper bound.

DR. CIERI: That was going to be my Point Number 2 of why this is unreasonable, and that is because of that level of steepness that was actually suggested not to be used by the peer review panel.

DR. COOPER: Yes, using that steepness again assumes over the entire – between now and 2044 we're going to get the same recruitment that we've had over the past 30 years when it's in a depressed state; and so the assumption of no stock-recruit relationship kind of flies in the face of most fisheries I've even seen.

Whether we can actually model and how is a different question but it's a very optimistic assumption; and so when they're talking about probabilities of successes of meeting their targets, again that is the upper bounds of the probability and is likely less because there will likely be a stock-recruitment response to the rebuilding.

DR. BOREMAN: Yes, I support what Andy said, especially at low stock levels. At very high stock levels that relationship may be masked by noise introduced by the environment or whatever, but at very low stock levels you expect a stronger relationship between the stock and recruitment.

MR. CARMICHAEL: Which apparently is just another sort of potential risk to things not playing out as suggested is that the high steepness is you immediately start getting more fish being born, but if that turns out not to be the case, then the projections could be overly optimistic already without accounting for this high R. I think it would be good for the group to decide if you think none of those alternative recruitment scenarios are acceptable, just come right out and say that directly so there will be no question as to what you mean.

DR. COOPER: As John pointed out, when we're talking about the probability of rebuilding in the timeframe, it really doesn't matter, that all of those seem to basically converge on the same value pretty quickly. Where it will matter is setting ABCs in the first few years, so it depends on which one we're talking about.

When we're talking about the probability of long-term goal, I'm far more worried about the steepness than I am about which specific recruitment curve in 2009, whatever year it is, that those get washed out pretty quickly, but for setting what should happen in the next couple of years, we're fine with the steepness. It's which recruitments are we assuming is going to make the big difference, so the problem depends on what the question is and they actually go in the opposite direction.

DR. WILLIAMS: I think the other topic that probably – which I don't have on the slide here – should come up under this action item is the area analysis and the presumed or estimated reductions that come out of certain sizes of closed areas and whether that whole analysis is appropriate.

That sort of goes back to this slide, although the minor bullets at the bottom there, the whole area analysis, what should we say about that? I think there is a case here that it's overly optimistic with a lot of the assumptions that are being made or at least the choice of values for the various assumptions seem to be on the optimistic end of everything.

DR. WHITEHEAD: The last bullet is one of two things that drives the economic effects for recreation upwards or makes Amendment 17A look more costly than it is, I believe. I'm not sure where we stand in the use of that. It sounds more optimistic.

DR. WILLIAMS: Yes, I probably should have taken out "too optimistic" because I was thinking initially of the first few, and then I started to say, well, we ought to really look at all the assumptions going into this, and I just started listing them all. Yes, some of them may not be necessarily optimistic or pessimistic, but we should look at the assumption and what the value was assumed for that.

DR. FARMER: I wanted to provide a few points of clarification just on this list before you get too deep into the discussion. For the point on assumes bathymetric-defined areas result in the same recreational savings as whole grid areas, I'm not really sure what that statement actually is supposed to mean; but when I interpreted it I think that it might be a misinterpretation of the way the bathymetric closures were computed in terms of their effects.

What I did is I used the logbook data as the proxy for the geographic distribution of the red snapper stock as a whole; and so then when recreational effort is – so when you implement a spatial closure that has that bathymetric contour, there is a percent of the stock that's going to be protected that is based on what percent of the stock was caught by the logbook – you know, reported in the logbook records occurring between those depths.

Then that savings is applied to all the sectors of the fishery, so it's not just the commercial fishery that benefits from the bathymetric closure; it's also recreational and headboat, but there are still left over red snapper in the areas outside of the closure that are then still removed by all the sectors. I just wanted to clarify that.

Then also there are some other assumptions listed here that aren't necessarily assumptions. They're features of the model that you can turn on and off. So, for example, that assumes all recreational trips with one snapper angler are eliminated, that's only if you assume that directed trips are eliminated. You would have to check that box in the model for that become then an assumption.

I think that one of the things that would be very useful probably to the council is if you actually went through the model and looked at the input options in there and made some

recommendations to them, you know, should you check this box or shouldn't you based on the best scientific information available. I'm available for questions if you have any.

DR. WILLIAMS: Well, I think part of this was we're reviewing the alternatives that are in the amendment now and what boxes they chose to check in order to compute the amount of reduction in those alternatives in which case a lot of these assumptions do apply, I think. Specific to the assumption about the bathymetric area, I was pulling this out of your report, which says, "For all scenarios considered in this report, MRFSS and headboat reductions and removals associated with Alternatives 3 and 4 were assumed to be the same as MRFSS and headboat reductions associated with Alternatives 5 and 6, respectively. However, this likely overestimates the actual reductions that would result from 3 and 4." That's what I'm referring to is that you're even stating that you're going to overestimate the reduction.

DR. FARMER: Okay, and as a point of clarification, that report was issued for the June SSC meeting, but we have since made updates to the model, and that was the point of my presentation to the September council meeting. The additional contribution of that was that we had figured out a way to look at the bathymetric closure, because all of our reports from the June meeting assumed that the bathymetric closure was doing the exact same thing as the full grid cell closure for lack of any better way to do it.

Now we've gone through and found by examining the logbook, the headboat and the MRFSS and MARMAP and the Moe paper a way of looking at that bathymetric closure and trying to at least get to some reasonable assumption as to how the red snapper stock is geographically distributed within those bathymetries. That statement that you've read is no longer applicable in the model.

DR. WILLIAMS: So are any of the analyses that have been handed to us in this briefing book applicable, then, or is this analysis changed enough that these reports that we're working off of are not applicable?

DR. FARMER: My suggestion would be and has been since September, use the model – that's the point of the model and that's why I made it interactive is so that you can go in and actually put in your inputs and see your outputs. All the documentation for this process is actually included in the model.

It's there under each input parameter, you have a small explanation of what it does, you have tabs that explain in more detail for all of the things. There is an entire tab devoted to the bathymetric closures. That has all been reviewed by the Science Center and has had comment come out of it. I guess twice now it has been looked at in one way or another.

DR. COOPER: Being able to click things on and off and run them, until we know what staff actually did – quite honestly, though, without addressing the change in effort, we're counting angels on the end of a pin here. All those things could be so grossly overestimating the effectiveness.

It really doesn't matter if we click the bathymetric button number seven, it could be completely swamped; and then without being able to calculate – I mean, all of our rebuilding probabilities are based on F. We never calculated the probability of these actually achieving those Fs. The propagation of the optimism – sure, we can open up the model and start tinkering with it, you know, when we start talking about the regression lines – yes, I personally don't even want to see the model until we figure out this effort shift, which we've been talking about with you for a year now that there are ways to deal with it, and I don't believe of these effectiveness things until we deal with effort.

And to say, well, you can post calculate by looking at Amendment 2, that's not what we're here to do. We're supposed to have a document that says here is the effectiveness; is this based on best available science. We're not supposed to be sitting here and rebuilding your model and saying, well, if we do this, do this, do this and rewrite this code we can do something.

I mean, I appreciate all the work you've put into it, but the document that we're commenting on, it's not your model that we're supposed to be commenting on. We're supposed to be commenting on the values in this document which are supposedly based on your model that somebody ran, clicking some buttons, and then there is a whole suite of assumptions that aren't even addressed.

DR. CIERI: I'm in his camp. This analysis is nowhere even close to being close to primetime, really. Until you address that change in effort, it is looking through the world with rose-colored glasses. You're going to assume that those boats are going to either stay tied to the dock or they're going to go tarpon fishing.

For all intents and purposes, that they're not going to have any chance of targeting red snapper during that timeframe when they can't fish there, that they're just not going to go fishing, and I don't buy it. For some of the closed area models that are used in other places, models that are readily available, they always assume that there is a shift in effort and that there is boundary effect, but that's not prevalent with this model. Getting back to Andy's point, we don't what was clicked in this particular model run. The analysis itself is highly optimistic at best.

DR. FARMER: I guess I would still encourage you to look at the fact that you have a tool that I imagine the council would use where you can actually take the input parameters that you're not comfortable with, remove them and get an answer instantaneously. With regards to the effort shifting, you're going to have some effort shifting but you're also probably going to have some people go out of business, so how do you balance that out?

Time and time again in the reviews that we've gotten from the Science Center and from the SSC, we've gotten basically the feedback of, yes, we think effort shifting will occur and, no, we don't have any suggestions on how to interpret that or analyze that at this time. If you have a clear suggestion on how to deal with the effort shifting, if you know geographically where the percentage effort shifting is going to happen and how it's going to happen, I would love to hear it and I will attempt to incorporate it into the mode.

DR. CIERI: I would really suggest picking up the Northeast Groundfish Closed Area Model. It does specifically that for both rolling temporary closures as well we permanent closures, and it looks at boundary effects, and then it ties in an economic model behind it for analysis of days at sea and some of the area closed effects.

For this particular thing, this is a wonderful, great tool to be used in the future, but right now it's being used to sort of analyze management options like today for approval; and until it has that ability to look at forcing effort into one direction or the other, I just don't think it's ready. I don't think it's appropriate for uses in management.

DR. COOPER: I seem to remember we gave you quite a number of suggestions on how to deal with this the last time when we were talking about I think it was the headboat stuff. The sensitivity analysis, you don't need to know where it's going to go, but what happens if 30 percent of the effort gets distributed by cells, what happens if 50 percent, what happens a hundred percent.

Let's just figure out how sensitive it is to some of these – we know it doesn't go to zero, so therefore to build it so you can only look at zero, which is the one thing we can reject, we can reject that complete loss of effort. We know that's not going to happen. Just like we do with all these other things, do some sensitivity analyses; expert opinion, talk to fishermen. People have an idea of what is going to happen.

So, no, I personally can't tell you, yes, they're going to go from Box 8 to Box 10 with 52.5 percent. Do some more of those scenarios because we need to know how robust are these conclusions. If it turns out a 10 percent effort shift throws this completely out of whack, we don't really need to know where it goes. If it's that sensitive, if it turns out you need to keep 90 percent of the effort to make a different, well, then, we're a little more comfortable with it. Right now we just don't know.

DR. FARMER: To that point, you know, it's not the intention of why it was designed for this, but there is that compliance input parameter in there, and you could look at that basically as a proxy for effort shifting as an ad hoc way of just exploring the sensitivity of the model without really having done it in as specific a way as you're suggesting with movement to the specific boxes.

But if you're looking at that input parameter there, that basically is dealing with the fact if you have a hundred percent compliance – let's assume that a hundred percent of the effort that was happening in the cells that are closed is eliminated completely, right, so if you reduce that by a certain percent, then spatially the model is interpreting that effort is then still happening in those grid cells that are closed, right, but I guess in a sense it's somewhat like it being distributed outside of the cells.

The main lynch pin there that we could never really get to the bottom of is geographically where is going to go because the red snapper stock is distributed in different ways, and there is not

really a good way of getting to that, right, but that would be a way that you can explore the sensitivity of the model to that.

I can tell you that it's extremely sensitive to that compliance rate, right, so in a sense you already know your answers. That's why you're arguing it so strongly is because effort shifting obviously, if it's going to happen it's going to grossly undermine the effects of the closure.

DR. WILLIAMS: And a little more to that point, I agree wholeheartedly with what Andy is saying that just because you don't have a good number it doesn't mean you can assume it's zero, because we know that's the one number that is incorrect. The other thing I would add is if you look at some of the comments that came out of the public hearing here in New Bern over this amendment, one of the concerns that came up many times was they're worried up here that there is going to be this effort shift.

A couple of fishermen noted the Florida net ban that occurred back in '92 or whenever, that caused an effort shift. I don't know if the data is there to actually even look at how much effort might have shifted as a result of that, but clearly we have an indication and we have plenty of data to support the fact that effort shifting like that does occur and to assume it's zero is completely inappropriate.

DR. FARMER: I was just going to say my suggestion would be that collectively we can definitely try to come up with some approaches towards dealing with this. I would love to see some concrete examples on how to deal with it. I would love to have some really concrete guidance as to what sorts of sensitivity runs you would like to see and I can build it in. The model has a lot of bells and whistles already; what are a few more; let's look at it.

I think overall the fundamental kind of outcomes is somewhat obvious in a way. Now getting to a specific targeted number, that is going to be more of an explicit analytical point, but getting to an 80 percent reduction with any kind of effort shifting is just probably not going to happen without a really massive closure of grid cells. So we already kind of know what the management measure is going to be to get there if we incorporate effort shifting in there. At that point it's just what do you want to see and let's go ahead and get it done.

DR. WILLIAMS: To that point, I don't think we can look at it. Again, this goes back to I think Andy's comment, we're looking at Amendment 17A. We're not looking at your area analysis. We're looking at it as part of Amendment 17A, but we have alternatives before us in Amendment 17A that are assuming certain reductions are going to occur from analyses.

I mean, we're looking at this whole amendment and there are other issues besides the area analysis. We're right now focusing on your area analysis, but as staff said earlier this is probably our last chance to look at this amendment, so, no, we can't really get into the details of messing with you model because that's not what we're being asked to look at right now. We're looking at Amendment 17A and the alternatives that are in it right now, and as it stands now it doesn't pass muster as far as being scientifically credible right now.

DR. BARBIERI: Well, I guess this thing is coming to a head in a way. I was asking John here offline is this really the last time that we're going to see this amendment, are we going to have an opportunity for input?

MR. DeVICTOR: As I said in my presentation, the current timeline is to approve to send this to the Secretary of Commerce in March, when the council meets in March. It depends when you guys are going to meet, and the last I heard was April.

DR. BARBIERI: What I was trying to get to is perhaps we could suggest a range of scenarios. If this is the most optimistic scenario, you know, like Andy made that point, well, maybe we should look for something that gives us kind of like a midrange and then the most pessimistic as well, so we have an idea of the ranges that we are talking about, but we may not have time to look at this before – actually, we don't have time, right, to have this done before making a final decision. That changes really our ability to act on this today.

MR. CARMICHAEL: I think if you feel very strongly about a range of values that should be considered for shifting effort or you feel there is an upper bound or something, then you should state it. Then I would expect it will go back to Nick to talk to the team about bringing up this concern and maybe the team come up with some sort of range of how they think it might happen. If you just totally feel like it has been accounted for but you have no idea of what type of range should be included, whether they should presume all of the effort gets redirected or 50 percent of the effort gets redirected, what is the ballpark?

If you're not comfortable even giving the ballpark, then I expect Nick will probably define the ballpark and run it by the team and try to come up with some way to piece something in there to have for the council in March. He's not going to have any choice.

DR. CIERI: Certainly, a range of sensitivities is something that we can certainly give guidance on, everything from all of the effort to none of the effort and 20 percent increments in between, you know, shifted inshore with that sort of discard mortality, that encounter rate and that discard mortality. That would certainly work, but when do you need to make these final decisions by and should council consider putting something into effect and then doing something a little bit more – you know, basically stalling again for a year to get a full analysis.

DR. FARMER: I was going to say I imagine the turnaround time on just building a functionality into the model so it could deal with a scaler effort shift, indiscriminate of location, so that's the tricky part of it is where is it going to distribute, right, and to be able to have input parameters for that would be complicated to build into the model.

But just to take it from where it was and just kind ad hoc and put it somewhere else, that might be a relatively quick thing to do and then you could just put a percentage, and you guys can input it or just give some targets that you want to see in the document in a table rather than an interactive model. The reason that I wanted the model to be interactive also is there is, god knows, how many permutations of parameters that you could throw out there, and I don't know what exactly people are looking for, so that's why it's more interactive now.

DR. CIERI: You certainly could redistribute the effort in areas in which there is known red snapper or in which there is known concentrations of snapper grouper. There are certain fishing grounds and you can simply redistribute the effort into those. At least that's what we did with the groundfish is you take them out of the closed area and you assume that they're going to go to other areas that may be less productive but are still productive, and you could do that through a GIS analysis. But, again, that's a lot of work that is involved to get something like that off the ground for an analysis that needs to be done like yesterday.

DR. FARMER: And an additional comment was that I heard you say something about moving things inshore and then dealing with that release mortality, so that makes me wonder are you comfortable now with overriding SEDAR 15 and looking at a different release mortality for the effort-shifted effort. Some guidance on release mortality would also be useful because I've stressed a few times now if you tweak release mortality, you're management options go way up.

DR. COOPER: Again, I don't know how many different ways I can say this; you know, you go off and tweak the model and then a table gets set in here and gets sent off to the Secretary of Commerce, I wouldn't feel comfortable stamping it ahead of time as best available science. Again, if we're dead set on using this model, I don't know how important they are, but those regression equations you threw up there, I'm sorry, I don't believe them at all.

I don't know if it's a minor part of it or what, but I'm not about to say, sure, just pick the effort and I'm okay with the output. There is a lot of stuff in there that we haven't peer reviewed. Given all the comments you got from your last one that didn't seem to get incorporated when you decided to apply it to the commercial, I wouldn't feel comfortable putting the stamp of best available science on this model until we actually spend significant time digging into it.

But, again, from what I'm understanding, we're not to be seeing this document again; and to apriori give a stamp of approval on outputs that has yet – you know, you can figure out how to do it and just stick the numbers in, I don't know if I'm comfortable doing that. I can't speak for anyone else here.

DR. FARMER: To that point in a few different ways; so, the regression equations are only important in very random cells off to the far east and the model deepwater cells have barely any red snapper in them because there was no red snapper encountered out there so there is a way of trying of figure out where they occur.

Ultimately, it is almost all direct substitution for any grid cells that I think the council would realistically close in this amendment, so you don't need to worry about those. Granted, it's debatable but they were reviewed by the Science Center and deemed to be proper regression equations.

Well, that's what I've got in my paper, but, anyway, I'm not worried about them based – they aren't important to model, anyway, so I don't think the council is going to close any of those grid cells because they're way off in the east. But to that point, this has been under some review but

I agree it probably could merit from further scrutiny prior to rubber stamping some effort shifting, and I'd love to have a lot of input on that.

DR. WILLIAMS: To that point, the Science Center review was simply a review that the equations that you put in there are correct and that when you change a cell you get the number out. The assumptions were not reviewed, so whether the assumptions are appropriate or not have not been reviewed.

DR. FARMER: In response to that I was just referring to the regression equations only. That's the only part of the review I was referring to.

DR. WILLIAMS: Right, and the review did not say whether those regression equations were appropriate or not. It just simply looked at do you put in one plus one and two as a result, and that's it.

DR. CIERI: It seems to me if we're having this sort of discussion, that neither the tool nor the analysis in the document that uses this tool as a backstop are ready for management use. That is really what it comes down to; is what is in front of us useful for management, and for me, no, it's not. It may be and it's certainly very, very promising but not yet.

MR. CROSSON: Given that we usually work by consensus, I don't want to have to put this to a formal vote, but it sounds like the general consensus I'm hearing from the people that are speaking is that the answer to this question or questions is no at least in terms of the numbers that the model is spitting out based on the assumptions that people have brought up and the questions they have about those. Should we pass a measure to that effect?

DR. BELCHER: Thank you, Scott, I was trying to do that. Basically, I asked John how we can best address this because obviously we can get mired down in this for however many hours it's going to take for us to go round and round as to how to best provide Nick with advice. I want to try to bring us back to focusing on 17A and what advice we've got to put forward, but is it worthwhile to ask folks to come up with, in an off-record group, some suggestions to provide to Nick that we can have for the end of the meeting tomorrow that we can go over as a group and then say, yes, we can push these forward for Nick to work off of, but do all of that off mike.

Right now, again, we're just getting mired down in some of the detail of this and we really need to move forward on 17A and what we're giving for advice. I'm not trying to stymie the flow but take this at a later time today and ask for a group of folks – you know, Erik has got suggestions, Andy has got suggestions, Matt possibly suggestions – whoever feels that there is something that they have a strong opinion on that could help Nick with some direction of ranges of values; I'm asking for involvement kind of at the end of day today as an informal group and, again, something to report back to us, but right now focusing on answering these questions for 17A.

DR. WILLIAMS: Not that we do need to get mired in the details, but I would assume that our statement about this is going to get into level of detail, potentially mentioning possible values

and why they should have been used or could have been used, so it's sort of intertwined with our response to this as well, I think.

DR. BELCHER: Yes, but the main thing is that there is an onslaught of things that we're talking about. It's not the assumptions under the area closure. It's other things like we've talked about that need to be addressed as well, so I think we need to take them more as specific items and then if we have the time – again, in a subcommittee type fashion, however you want to look at that. Yes, it would be supplemental to this and we say in our consensus that we've afforded opinions as to what could be produced and that we can tie that in at the end as to what those were, but just not do that detail level now.

DR. BARBIERI: My understanding of what we're trying to accomplish here is basically what was proposed; you know, Nick's presentation perhaps being presented as the base run of this analysis, and we are basically saying, no, we need to see – before we accept this as the base run, we need to see a range of sensitivities so we can evaluate the influence of different parameters and changes in those parameters before we can make a judgment call.

Looking at that table of sensitivities that came out of the SEDAR 15 assessment, there are a number of sensitivities there, 31 in this case from the original assessment document. This doesn't include all the possible combinations or permutations of parameters so somebody actually made some choices, and I think your suggestion is that we would make choices on what will be the most valuable to be looked at in terms of sensitivities so they can come up with a list that would give us those bounds, upper and lower, offline, right?

DR. LARKIN: I suppose one concern I have about recommending anymore scenarios is how far you take it because I can understand effort distribution comes with number of trips, but to me is what are they going to catch on those trips. We all know that it's sort of a portfolio or suite of species that they catch, and some them are under new regulations that are going to go into effect, too, so how does that species mix change?

One thing that I would say is just generally optimistic about the economic analysis that comes out is that it doesn't account for any fixed costs, and I guess in the extreme it would be the potential for some fishermen to go out of business, because right now they still stay in business and cover their operating costs.

I can't remember if the behavioral modeling that went underneath what happened in the northeast accounted for that or not, I'm just not as familiar, but that's certainly one effect. When they move to a different area, we know there are species that isn't going to give them the same net revenue; not even close to the same upper bound value, but are they still going to stay in business?

I just think if we sort of recommend certain scenarios, when does it ever end in terms of when do we say is enough to cover what we need to? I'll just say one last point. One thing, when I try to think of recommending changes that might affect the analysis of some of these to try to week out those things that are common among all the scenarios versus those that will affect the relative

rankings of the scenarios like what is it about these particular amendments where these assumptions are really important and which aren't.

MR. COLLIER: I think one of the assumptions in the model that deals with the projection and discard mortality; and when you read SEDAR 15, it actually states that commercial fishermen are observed holding fish on the deck to later measure them. Well, if you close it you're not holding them on the deck, and for red snapper usually handing time and hooking depth is the most significant factor in their discard mortality.

It's not necessarily barotrauma; they tend to have a smaller barotrauma. It's their readiness to bite a hook that affects their discard mortality. They're very aggressive and a lot of the fishermen know when you're out there the first fish you catch is a red snapper if it's there, and it's the biting style that really affects them.

So putting a depth profile and different things like that might not be the best decision and maybe looking at the actual handling time – and you can't get an exact number and that's why there is not a great explanation in SEDAR 15 on it. There is very little release. I think out of the 100,000 pounds that were caught, there are about 2,000 that were going to be released, 2,000 pounds – very little impact on the assessment but a huge impact on the projections. In SEDAR 15 we were only to describe the past fishing behavior and not future and so that should be a consideration for this overall is how do we deal with projections?

DR. BELCHER: I appreciate the additional comments, but is that how we want to proceed, then, is have this discussion point by point or do we want to supply additional information? I think in some ways given what we've stressed especially relative to the shifting effort, we should kind of give some guidance as to what we think should be of – even if that's the end all be all of what you focus on the most and if nothing else should be at a minimum what we provide information to them on.

And if there are other things that you feel strongly about, then we need to – and again we put it back to the group, we see what we think. I mean, Sherry's point is well taken, too, is that there is an infinite number of possibilities, but those that stand out the most at least gives us a good starting off point, and it may raise more questions, but that's the inherent nature of that, I guess, as it goes along when we go through it with sensitivities in general. So, back to a 17A, let's try to at least see what we can form as a consensus for a statement relative to this one particular and then we'll take a break.

MR. CARMICHAEL: Just for some clarification, remember you've talked a lot here about one analysis that supports some alternatives. This covers a whole range of things. So my understanding, just to be clear, this is a subgroup that's going to consider the area evaluation and try to provide some tangible and helpful feedback in terms of effort shifting scenarios and sensitivities that could be considered, and it may also talk about some other aspects of that model. So that's the primary focus of this group is that area evaluation model component?

DR. BELCHER: Right.

MR. CARMICHAEL: And the discard mortality, you have a discard mortality rate included in this obviously; are you using 90 percent in the commercial? Then you're using the same moving forward as was used in the stock assessment. The reason I asked this is because some of the earlier evaluations that we had done are more simplistic than what this was done. At the staff level it was combining the deepwater closure and considering the throwing back of the fish, and we had argued that there is a possibility that 40 percent could be used across the board, and I think the team supported that in those scenarios.

DR. FARMER: In the model which was in the briefing book, you can put whatever release mortality you want, and what I presented in the PowerPoint presentation as an optimistic scenario, which then I was going to go into model and show you the sensitivity after that, yes, I used the SEDAR 15 parameters, so you can go right into that spreadsheet and do whatever you want with that release mortality and get your feedback, and, yes, it has a big impact. Now recreational has a much larger impact if you tweak that versus the commercial because it's a much larger portion of the removals.

DR. BELCHER: Okay, so, again, getting back to this, the general idea that I thought we could have with this is obviously our answer to this is that it's not, it doesn't pass muster, so the question is as the SSC the consensus is that we're in – you know, again, we don't support it, but I think what we need to do is provide item by item why we don't support that. Obviously, Nick's is one small component but stay away from the detail of it. Erik.

DR. WILLIAMS: Yes, and perhaps this slide kind of sums up for that bullet – you know, these major bullets would be the three top ones I think that sort of sink the ship, so to speak. Those are the ones I think, listening to the discussion around the table, seem to be the critical ones.

DR. COOPER: I would add to that the point you brought up earlier where for the management options we don't have a probability of achieving that F; that right now we have F with a probability of achieving our rebuilding in time and then we have a fixed will these management options achieve our F, which makes it that the probability of success again is another overestimate, so they're not propagating any uncertainty of that management measure actually achieving the F. So the F will have a certain probability of success, but we don't know where the management measures will actually – how that will propagate through.

So, again, when we talk about Amendment 17A has the probability of success, that talks about the whole suite of things, but we're only propagating the uncertainty in the F rate to rebuilding and not to the management measures that leads to the F rates that lead to the rebuilding..

DR. WILLIAMS: All right, so I think we'll have to craft something here for this first action item. The next action item; is the assessment sensitivity considering dome-shaped selectivity conducted appropriately and does the SSC agree with the conclusions of the analysts? This is under Amendment 17A.

I'll add that this dome-shaped selectivity has nothing to do with Amendment 17A, frankly. It has to do with the stock assessment, so my statement that I threw up here, and agree/disagree with it as you feel fit, that I think this is an inappropriate time to be considering this analysis. It should be addressed under the SEDAR Process or in a subsequent red snapper assessment. It's not really relevant to Amendment 17A as it stands now.

DR. BELCHER: Further comments in support for this? Andy.

DR. COOPER: I wholeheartedly with that statement. I think we could go further and answer the question, though. Let's just put this thing to rest while we can, because otherwise we'll have another action item that will have its own number at our next meeting solely about this. I'd say let's go ahead and answer the question as posed to us, but keep in those sentences because we need to throw this home that don't be putting action items on things that aren't related to the topic we're reviewing. We've have been trying to get that point across for a while.

My personal opinion is it seems good enough. I'm sure there is more that could be done, I'm sure that less could be done, but I think it answers the question at hand, how sensitive is the model to dome-shaped selectivity.

DR. CIERI: Basically the same thing; I mean, I was a little confused as to why we were discussing the assessment within the context of an amendment, anyway. I mean as a peer-reviewed assessment it stands, and how that affects the actual management action was just something that I couldn't really understand, but now I kind of get it.

I agree, there is a lot of work that you can do with dome-shaped selectivity, and I would go further and just suggest that during the next benchmark assessment that the term of references reflect that, that an examination of dome-shaped versus flattop selectivity be done, but other than leaving it as a term of reference for the next assessment, it's pretty much a done deal.

DR. WILLIAMS: Yes, and I think when we looked at those terms of reference – yes, we looked at those for the update assessment workshop that Dale had. That was in there.

DR. BELCHER: All right, why don't we go ahead and take a ten-minute break and then we'll continue on with answering the questions.

DR. BELCHER: Let's go ahead and get started again, please. We can continue on with the train of thought that we've been working with, which is addressing these review-and-comment actions on the agenda or do you all have some other way that you think we should proceed? I know Erik and Andy were having conversations off mike that might help some of that. A question to you, John, on the record, because it was brought up, one of the past actions has been endorsing as best available science. Are we not doing that anymore? Erik said he had noted that wasn't one of our actions relative to this specifically, anyway.

MR. CARMICHAEL: Yes, you've been asked more in terms of each of these individual items and not so much as just saying, okay, the whole document is best available science. We did it

that in response to questions from the SSC which has said what does that mean; there are hundreds of pages in here and are we certifying everything?

We tried to focus you in on the technical issues that are appropriate for you to consider and ask for your discussion on those, and I think the words have been used some about whether or not things are adequate for management and ready for management and like that, so that's really what we're looking for.

There was some discussion at the national meeting about the SSC's role in saying this whole document is best available science. When we had our discussion in October, it doesn't really seem that's necessarily a task right before the SSC to make that determination for this whole package.

DR. BELCHER: So, again, I guess the best way to proceed, then, is to just go down the list of these action items.

DR. WILLIAMS: I think we covered this one, but we will add some text to this one. I think with Andy's recommendation we'll beef this up some more, but probably those first two sentences or something very similar to those will stay in place. The next one is are technical values in the amendment accurate and consistent with SSC recommendations? I threw up some initial thoughts on that. They're shown there. I'll open it up to any other concerns or issues with this sort of specific action request.

MR. CARMICHAEL: Does that say the rebuilding schedules don't achieve the 40 percent, because aren't there some that do? Certainly, some you do like the F 65 percent, F 75 percent and F 85 percent –

DR. WILLIAMS: Right.

MR. CARMICHAEL: – are all 70 percent or better.

DR. WILLIAMS: Right.

MR. CARMICHAEL: The Fmsy doesn't. I don't think the Frebuild quite did. Interestingly enough, this you would think would be heavily tied to the recruitment or not use that very high R, but because that washes out over time, as you guys readily noted, there is no change in the probability of success. If you compare the recent projections which use the high R and the very high R with the March projections of the same information, they're just using the stock-recruitment relationship R.

DR. COOPER: Yes, the first year of recruitment doesn't matter, but the assumption of the recruits in the future being the same as the recruits in the past, that steepness completely drives this so that some of these – you know, Alternatives 4, 5 and 6 I think they are – do exceed the 70 percent under the optimistic assumption of no spawner-recruit relationship.

How to adjust for that, I don't know, but I think the council should be made aware that Alternative 4, which is the preferred, has an 84 percent chance of rebuilding. Under a more realistic stock-recruit relationship we don't know if that's going to pass the 70 percent bar or not. It may very well, but the council just should be aware that they are not being as risk averse as they think they are in choosing Alternative 4.

DR. WILLIAMS: I think in many ways this one we kind of addressed in the previous one. It's just the wording of this action is not much different from – I mean, we sort of cover it a little bit under some of the discussion of these other –

MR. CARMICHAEL: So you could change that to say some rebuilding schedules.

DR. WILLIAMS: Yes.

MR. CARMICHAEL: Would you conclude the last one by saying something about which suite of projections you think are appropriate to be used, because someone could say, okay, the very high is not appropriate so let's use the high or let's use the median, and I think it would really help if you said which ones you think are appropriate and if you think some of these are completely inappropriate; if you think several may be worth considering, that kind of detail.

MR. CHESTER: Carolyn, just a detail, you said recently approved ABC control rule. We may have approved it; I don't believe the council has approved it yet, has it? You might want to reword that.

DR. WILLIAMS: Right, I will except this action item is specific about whether it's consistent with SSC recommendations. Again, I'm not intending this to be – I mean, we definitely need to modify text. This is just me sort of dumping some thoughts on a page, essentially.

DR. COOPER: Whereas that last one the assumption of very high comes in as under each of the rebuilding scenarios, they mention a specific ACL value for 2010. I'm assuming, though, it would be sensitive to the assumed recruitment. I don't know for sure; I haven't seen it. It's personal and I'll throw this out there as a strawman and you guys can throw stones at it.

Either the base run or the high scenario which was like recruitment at 280,000 versus 320,000, those two, I don't know if I could choose between them. I don't know; generally the base run that has already been approved kind of gets my default approval. The very high recruitment doesn't seem reasonable to me.

Why, because it's the highest on record and we haven't seen anything like it for 20 years, and in fact for the past 20 years we've seen everything closer to between 200,000 and 400,000, and so choosing a range outside of there just doesn't seem justifiable. Even though we know it appears to be a bumper year class, we've all seen bumper year classes disappear. That's one reason why I say I'm comfortable with the high, saying, okay, it's above the average baseline; do I think it's the best we've ever seen, I'm not willing to go there. But, sure, we could bump it up a little bit

and that 323,837 – whatever that number was – seems to be within the range of what we've been seeing over the past decade or so, and so therefore is at least somewhat defensible.

MR. CARMICHAEL: More evidence that it was above average than it was the biggest ever.

DR. WILLIAMS: Yes, I completely concur with Andy and his conclusions about this. I'd agree that I think the base run and maybe the high recruitment scenario are reasonable, but the very high is just pushing it.

DR. BUCKEL: Erik, the very high, can you remind me the reason why that was done? I was under the impression that was a memo sent to your group to check into given that the anecdotal information comes from the fishery about that year class. So, you checked into it but there is no reason that you would want to move forward with using a projection at that very high level. That language; should we consider providing that here to address the reason why it was examine but why you would not move forward with projections?

DR. WILLIAMS: It was examined purely as just what happens when you increase recruitment to really high levels, and it was literally worded almost in that way. We had no guidance on how high and so we just chose 50 percent of the maximum recruitment, the maximum recruitment and one and a half times the maximum recruitment just as a range, and there was no suggestion whatsoever that any one was preferred over another or even if any one of them was preferred over the base.

DR. BELCHER: Any other points that need to be added to this particular action item? Okay, Erik, the next one.

DR. WILLIAMS: The next action item was are options included that will end overfishing? This is actually a point Andy and I were just talking about in trying to actually answer that question of are there any alternatives in this amendment as they stand right now that seemed like they will end overfishing? I'm not sure what the answer is to that.

MR. CARMICHAEL: We can deal with the recruitment, but is that part of that concern about not having seen evaluations of how effort shifts may pan out?

DR. WILLIAMS: From my perspective, yes, that is a large part is that area analysis is just missing too much to rely on the results from that, and all the alternatives are relying on the results that those calculated reductions will occur and all indications are they won't occur. It will be something less than that and how much less, I don't know, but enough that it's probably not going to end overfishing as they stand now.

DR. COOPER: I guess one technical question; in assessing 2.3 of the management measures, in the biological effect they talk about how these various closures will affect harvest; is that just the 2010 harvest or was there any modeling to see the closures with respect to holding the target F over the rebuilding timeframe? Are people understanding the question?

The section previous says 75 percent at SPR of 40 percent as the preferred alternative. We then talk about a percent reduction in harvest with the management measures. It's not clear in the text that percent reduction is going to work to keep us on that F trajectory or if that is just with respect to getting the 2010 landings at the appropriate F. I also don't know which it is.

DR. WILLIAMS: I can't say; I think it is the one year; it's just trying to reduce landings. It doesn't account for F, really. It's just saying you need X percent reduction in landings, and the area analysis says you will get that much by closing these areas.

DR. COOPER: So then, again, that's another layer of optimism that as the stock rebuilds you're going to have more and more smaller fish everywhere, bycatch is becoming a larger and larger issue, the effectiveness of the closures may change – which way I don't know – probably become less effective, I don't know. So, again, the simple statement of are options included that will end overfishing, the management measures in section 2.3 only about ending overfishing in 2010. We actually don't have any analyses that speak to ending overfishing in 2011, '12 or '13.

One of the advantages at least of whoever did this, choosing all the optimistic assumptions, is that all our critiquing is directional; that we can pretty much say that they won't be as effective as listed here and at least can rule out the ones that are borderline effective. It's the ones that are maybe a little over effective, we don't know in the scheme of things where they'll fall out, but we know the ones that just barely make it, under the most optimistic assumptions aren't going to make it, and those that do possibly too much may or may not, so we at least know that these options are not enough to achieve the target, these, maybe, and we'd have to go through all 11-plus subsections of these alternatives to figure out which ones those actually are, so at least it says, okay, to the council you have to be at least here; that these that say they're going to do it are the least you can possibly do because it's optimistic whether or not those will work.

And when they're thinking about again how risk averse they're being, keeping in mind that all of these published numbers are just for 2010, are overly optimistic, may not get us there, but doing nothing is definitely not going to work, something has to be done..

MR. COLLIER: That might not always be the case, that all of them are overly optimistic. The discard mortality is going to have – it's completely the opposite way. It's extremely conservative so some of the discounts may not all be accounted for.

DR. BELCHER: So are there specific alternatives/options that we can point out; any in particular? Like I said, we've had the discussion that pretty much anything linked to the area closure, we're pretty much discounting so that knocks out a suite, right?

DR. WILLIAMS: Do we want to go as far as to recommend our own options that might end overfishing? I don't know what those would be. Well, I mean, if we think in terms of bracketing assumptions, certainly closing the entire snapper grouper fishery year-round would do it, but that's the opposite extreme.

I'm just wondering – I mean, I know there was a lot of discussion about using closed areas for management. If the SSC – you know, this is where get into whether it's management and policy and whether that's science or not, but whether we want to make some statements about whether area closures is a generally good management tool to be using from a science perspective or not and maybe we should be focusing on other management measures that directly affect effort because it seems like what is going on here is using closed areas in an attempt to reduce actual effort and making a lot of assumptions in hopes that effort will be affected directly, but why not just go straight for the effort and limit entry, limit whatever needs to be done, limit participation, et cetera.

MR. CARMICHAEL: Doing something like that might really help people understand why you're so concerned about the effort shifting part, because I think there are probably a lot of people that say, "My God, you're closing a giant area that's enormous, what more can you do?" And you are say, well, maybe that's not the best approach; and they're going, well, what else is there? So building on that could probably be very helpful.

DR. LARKIN: I think building on what Erik just mentioned about what is it going to look like in the future, that's what I find when I'm reading through all this, and a lot of analysis has been done on the trip level and not a lot of thought done to the fleet. I like to think of rebuilding as having a happy outcome in the future, be it five years, be it ten years.

I don't think if they address this underlying mismatch between effort and capacity, that if we rebuild the stock what is the fleet going to look like? I mean, what is the configuration of vessels and how they operate? I just don't see a lot of thought given to what is going to happen even in five and ten years and twenty years down the road in terms of effort capacity and effort management.

DR. COOPER: Well, again, based on the analyses for Alternative 2, which is banning all possession – I forget how that is actually phrased – that had between a 30 and 60 percent reduction; and without any changes in effort – the closures, you know, some of them had like 90 percent reduction – it certainly sounds like to me it needs to be a combination of no way in heck can you fish red snapper and we should be closing some areas to general snapper grouper; that just doing closures, given this shift in effort, probably won't cut it; and not doing any closures and just shutting down red snapper isn't going to cut it, so therefore, okay, do more than one of those.

MR. CARMICHAEL: Well, they actually do. In Nick's evaluation there is no retention of red snapper anywhere. That's first and foremost, and so what he has shown in the areas is actually now what other things have to be added to still get us where we need to get. So all those options are these are the areas that are closed as well as there are other areas that you can go fishing in and you can't keep a red snapper, so it's the closure to all snapper grouper fishing, but there is no red snapper retention anywhere.

DR. CIERI: I guess I would just caution that when you start talking about closing areas and you start talking about limited entry and you start talking about limiting effort, you're starting to talk

about allocation, which is not something I think we want to go to and something that is strictly the purview of the management council.

Each one of these things has differential impacts on differential parts of fleet. They affect recreational versus commercial. They affect big boats versus little boats. They will even affect different states differently. So while there is a biological component, there is also an allocative component, and that's something I think that the managers need to really understand.

We can come up with options. As a first cut, yes, closing the entire snapper grouper fishery would just about do it, and that would, of course, spread the pain across the entire fleet, but on the flip side, if there are other options that they wish to consider, there are things that are going to impact that fleet and its sectors differently. I think us coming up with something simply to make those need reductions might be a little bit outside of our purview is what I'm suggesting.

DR. COOPER: As Chip said and as other people have mentioned the success of these will also depend on post release mortality estimates, so things that can also reduce that mortality will boost the probability of success. What those are, I don't know, but, again, it's going to be a combination of measures that makes this successful.

I think those that don't include such things – I think we can give directions but whether we're going to solve the problem here and now, I don't think so, but we can at least guide the council and saying, listen, the most restrictive one that is currently an option or the preferred option probably won't cut it unless we also fix the bycatch mortality, and even then we're not sure.

MR. CARMICHAEL: You've talked about things that have been brought to you in the past, things like circle hooks, dehooking tools, and you're said that there is no way to quantify their effects, but if you do feel like those things could be positive towards the issues you just said about reducing discard mortality, then maybe they can give you some confidence in thinking perhaps that, say, effort that shifts inshore is unlikely to result in significant removals of red snapper, and then be essentially a wash in terms of how it might affect the relative optimism of the scenario.

Effort that shifts to offshore areas where red snapper could be encountered still could be a concern. Maybe circle hooks have some benefit toward red snapper survival, the ability to catch red snapper that maybe makes you feel a little more comfortable about the relative optimism of the suite of assumptions. If that were the case, then bringing some of that in would be helpful, too; and what other things there are to reduce that mortality, encouraging fishermen to drop fish right at the water's edge and not bring them on board and handle them and picture them and all that stuff.

DR. BELCHER: Well, I guess bringing us back around to the question again, the answer is, no, there are no options that will end overfishing that the SSC feels? Matt.

DR. CIERI: Is that really the case? It seemed like some of the alternatives, even with some of the closed areas that closed off a large chunk, even though they didn't talk about there would be

some shift of effort, some of them were certainly a whole lot less risk averse then others. I don't want to get in front of the council and say, yes, this one is a do-over, which it seems like the way we're heading. If there are none of the options there that end overfishing, then now what?

MR. CARMICHAEL: Maybe that's the question, then. You've have had the discussions with Nick. You talked about the analogy between effort shifting and the compliance. You've seen that if the compliance is only 85 percent I guess in some cases, it's very difficult to get there even from closing very large areas. I guess it comes down to how strongly you guys feel that.

If you're willing to stand out there and make that statement that you think area closure alone that leaves places open where these can be encountered because of effort shifting and discard mortality and non-compliance is going to be so significant that you're concerned that any of these will actually work, then that's what you should say.

DR. COOPER: Then I'm correct from a legal standpoint the council can't put something forward that wasn't in this document; is that correct, because it's not going back out for scoping or comments, and so perhaps our recommendation should be the most restrictive one may – we don't know if any of them will actually do it, but the most restrictive one is going to get you the closest.

DR. BELCHER: But in doing that, then we also have to make a statement as to what ones we think they should avoid.

DR. CIERI: Yes, apparently every single one that's not even close; you know, each of the ones except for the most onerous. There is like two in there I think that have that ability. Their range of alternatives, most of their options do no lie on either side. Most of their options are at one end, so they kind of shot themselves in the foot in some ways. I'm of the mind of listing the options that we think might get them there with a reasonable probability, understanding that's it going to be some expert advice. For the others, if those aren't acceptable, then do it over.

MR. CHESTER: Again, to this same issue about if there are options, there is an option in here, number ten, I don't know that we've thought about or talked about, which is very complicated and may be almost impossible to monitor and enforce, but it establishes a closure area between 28 degrees and 33 degrees north within which they allocate approximately half of the 79,000 pounds to bycatch, and then outside the closure area they allocate a certain small amount of catch to the different sectors. If that were managed perfectly, we perhaps could get pretty close to ending overfishing. I just want to make sure we're not ignoring that option.

DR. COOPER: I had totally forgotten about that one, and it is the only one that is an output control rather than an input control measure, and it probably would work given the caveat of the 79,000 pounds, but, yes, the whole concept of essentially making the hard TAC that is allocated monitored so long as we could actually monitor everything. I believe in the presentation it talks about electronic monitoring of the recreational sector, which, yes, I don't quite know how that would achieved.

MR. CHESTER: I believe they're talking in terms of a lottery-type allocation.

DR. WILLIAMS: I think one of the major technical hurdles with that one is, well, one, you'd have to put VMS on all the boats, which that might be doable, but then discards are being monitored largely through self-reporting. You don't have observers on board, so I don't see how you get around that. You'd have to have mandatory observers on a hundred percent of the boats, and that's not doable for a lot of those vessels in our fleet.

DR. BUCKEL: Since there was some discussion about the one alternative that closed off a large number of grid cells and that may get us there, I think Nick mentioned that he could run those and hit the different boxes and we could see the result of that and maybe changing that inshore release mortality. If you're in less than 60 feet of water and using circle hooks, then you may get to a release mortality that's less than the 40 percent and certainly less than 90 percent if the commercial are in there, too. I just wanted to see if folks wanted to take the time to look at that since that may be one of the options that we say possibly could end overfishing. How long would it take, Nick, for you to show us that?

DR. FARMER: I guess one concern that I would have about that is that my understanding of the SEDAR 15 release mortality rate is kind of based – the commercial, granted, was based on one observation basically on one boat, but for the recreational I guess that's an aggregate of studies and based also on the average depth of fishing in the fishery.

I guess my concern would be do we leave it at 40 percent in the deeper cells or do we increase it from 40 percent in the deeper cells so that your average is still 40 percent across the fishery or is the assumption that the bulk of the fishery is moving inshore and so the overall average release mortality rate will be lower, and I will treat the inshore cells as 20 percent and the rest as 40. Do you see where I'm coming from on that?

DR. COOPER: Getting back to 17A, I thought what we were doing was putting out suggestions for the council to consider for their options and not actually figuring out what the true answers are as to all of these different options? I think we can talk about the rankings of which ones are likely to be more effective and which ones aren't, but to actually say this one will be effective; again without full review of the models, I don't want to start putting that forth as the SSC recommendation, just like I wouldn't any other without the full review, to start applying it and then throwing those numbers forward as the answer.

I think we're trying to give guidance to the council of what they can do, but I don't think we're going to be able to come up with saying which ones will make it. Well, some of them we can say they may not be feasible to implement but output controls will make it assuming you could implement it. To simply rank that, okay, we know that these are less efficient than these and that won't make it, I think we should rule some out but not all. I think it has to be general guidance.

DR. BELCHER: But that was kind of what I was thinking we were going to do, anyway. I mean, I don't know necessarily – I mean, again, it's walking that fine line of informing them on policy and allocation versus science. I think the best thing that we could do is that, again, we

have the options in front of us that's the final draft of the document as it stands and there are not going to be new ones added in, so us suggesting other options doesn't make any sense at this point.

To me where it would behoove us to give them advice would at least say we don't think that they're going to make the threshold they need to make. However, again, we discounted this one, this one, this one, this one; there are four left in there and if you had to rank them as to what ones have the best chances of having some form of reduction in overfishing; we can't tell you what probability it is, but this one stands a stronger chance than this one and ranking them that way or just giving them an indication of what might I think is something that we could do.

Again, I've put that to the group as to whether or not you think that is – I feel that is something that we should do as opposed to saying none would do it, so then they are kind of stuck on a ledge, well, what are we going to do, then? Matt.

DR. CIERI: Well, one of the things that might be useful is simply to take all the options and put them into two categories; one with a high risk and one with a moderate risk and then put in a statement that none of the options meet the alternatives or the one in the moderate category have a better chance of meeting your objective and that the ones in the high risk do not. That would be just a way of just simply categorizing each of the options. We've done that in New England and it seems to work.

DR. WILLIAMS: I'm kind of leaning towards that kind of approach, but I'm just concerned about the ones that we're characterizing as moderate risk, whether then that's going to be interpreted as, oh, yes, that might work then, because in our relative scale I'm wondering if there might be some edification from taking Nick's model with the most restrictive measure alternative that we have in the amendment now and adding in a few other things to partially address effort shifting and non-compliance and just see where it lands.

If it's nowhere even close, then I don't know if we even want to say that even the most restrictive measure in here is a moderate risk because it may be flat out no, it's not even going to come close either based on just a cursory look at that. I'm still concerned that all of these are still – I mean, yes, some of them have a little bit of a buffer in that they suggest higher reductions than are necessary, but once we start to put in some of these real realistic non-compliance and effort shift numbers, I think it rapidly disappears. I think Nick alluded to that fact earlier; and if that's the case, then I don't know if we can even really classify any of these options at even just moderate risk. I think they're all risk potentially.

DR. COOPER: Is it just terminology; rather than saying moderate risk, we've got extremely high risk and unknown but likely high risk, and so don't even paint as moderate. We don't know, but it may be high, and so we at least break into the don't go there, these might work – I mean, my fear is I don't want to move this forward with the council thinking that the default of doing nothing is the way to go, because we know for sure that's worse off than any of the things here, and so trying at least to give them an option for doing something rather than spending another couple of years trying to figure this out.

DR. CIERI: I like Erik's suggestion. What we can do is simply categorize it as stuff that we know won't work and stuff that we think could work or come up with a little better of a terminology and least give them some guidelines with that and then let them – if they look at the stuff that we list as could work and they don't like any of those options, they're free to develop their own, understanding they're under their own time constraints, they're under that MS Act, and rolling them over isn't going to be exactly a doable thing.

DR. BELCHER: It sounds like a plan, so where do we go from there?

DR. WILLIAMS: I think that answers this question here and we just need to phrase it properly, I think, unless anybody disagrees with that approach. I mean I think the direct answer to this is are options included that will end overfishing; we can't say yes, but we're going to say a gradation of no.

DR. COOPER: But also we do eventually have to get down to brass tacks and say which of these fall into which camp and also reinforce the thing that all of these analyses are just for 2010. All bets are off for 2011 and 2012 and who knows which way they'll go.

DR. BELCHER: So where do you want to start? Is this something that we want to do in a subcommittee thing as well? Again, it's one of these things we've already got one to discuss, which I'm sure there is going to be some degree of overlap with folks who are participating in one and the other. Again, it's the idea of a structured list of recommendations that might help Nick is what we've decided would be a subcommittee activity this evening. Do we want to put the options down now or do we talk about them now? Again, it's one thing to get the consensus statement and say that we'll rank them, but we probably need to rank them. Matt.

DR. CIERI: Then we should probably rank them as a group just to give it more weight. My question to staff is do we need the rationale for putting them in one thing or the other? In other words, if we have an option in front of us and we're looking at it and we go, yes, that's not going to work; we need to state why; correct, for the record?

MR. CARMICHAEL: Because otherwise there is really no way to know about how to go about resolving it. It's sort of like with any of this stuff, if you an analysis doesn't hold water, you need to state why that is so that somebody has some chance of going in there and settling it and resolving it, especially understanding where we are in the process and how things could proceed.

DR. BELCHER: We need a table of options somewhere of alternatives.

MR. DeVICTOR: Yes, if you go to Section 2 – I believe it's Section 2.3 you can see a list of the management measures for red snapper. That's in the second briefing book version. I have a Word Version, but it's around Page 38 is where you see the list of management measures. It's the actual page; I don't have the PDF open.

DR. WILLIAMS: Yes, so this is the public hearing draft here from the second briefing book, which that should be the correct copy, right?

MR. DeVICTOR: Yes, I'm going by the second briefing book version. I'm not sure which version you had in your briefing materials. It's the public hearing one?

DR. WILLIAMS: Yes, public hearing, the second briefing book. It's PDF Page 60. It's listed as 17 public hearing documents.

MR. CARMICHAEL: That's not actually the one that Rick is looking at. That's not the second briefing book version; that's the public hearing version. You have a link to one perhaps through the Snapper Grouper Committee. It's called Snapper Grouper Committee, Attachment 11, underscore second briefing book version, Amendment 17A.

DR. WILLIAMS: All right, I think we can eliminate Alternative 1. Rick, is there a table in there with the percent reductions for each alternative?

MR. DeVICTOR: No, but if you go down to PDF Page 72, there is text there, so that's the text right underneath the list of alternatives, and that text outlines what the percent reduction is to each alternative.

DR. WILLIAMS: It looks like Alternative 2 is just 39 to 61.

MR. CARMICHAEL: Does the SSC feel like they should look at those assumptions and try to narrow that down some? Rick, do you remember what the range of those assumptions is based on? Was it based on the impacts of the prior management options primarily?

MR. DeVICTOR: Right, and I think Nick has that listed in his presentation, but, yes, it changes release mortality and what effect the previous management regulations would be. The effects of what trips would be taken; again, that's based upon previous amendments.

DR. BELCHER: So potential or no potential?

DR. WILLIAMS: Which one, Alternative 2? No.

DR. BELCHER: Why?

DR. WILLIAMS: Even at the most optimistic assumption, without changing the release mortality it still doesn't get you enough percent reduction.

DR. BELCHER: Okay, Alternative 3.

DR. WILLIAMS: I think that's one of those that fits in the category of right at the line, so I think we've decided that wasn't.

DR. BELCHER: What limits its use?

DR. WILLIAMS: It does not account for effort shifting in the area analysis and assumes 100 percent compliance, but correct me if I'm wrong somebody.

DR. BELCHER: Any other comments for that?

DR. BUCKEL: Yes, to Chip's point, you've got the one issue with the effort and the compliance, but then the other issue is the discard mortality rates that were used were based on the SEDAR 15 Date Workshop, which they didn't develop discard mortality rates for projections into the future. Chip made that point earlier, and that would be another – it's not a reason that this wouldn't work, but it should be included.

MR. CARMICHAEL: I guess for four you would be saying if there is effort shifting or compliance is not a hundred percent, this one will probably not end overfishing. This one won't end overfishing if those things occur; that's how we're looking at this.

DR. WILLIAMS: We're still on three; aren't we?

MR. CARMICHAEL: I meant three in that previous statement, let the record show.

DR. COOPER: So if I understand the text, for Alternative 3 under the best case scenario of discard mortality, we will achieve an 88 percent reduction assuming no shift in effort; am I reading that text correctly? Given we're pretty much ruling out no shift in effort, this is one of those that won't work.

DR. BELCHER: So we're rejecting Alternative 3?

DR. CIERI: I wouldn't call it reject; let's just say we'll put this into the less than – yes, as opposed to the less than desirable category.

DR. BELCHER: Change that from rejecting to we're not confident that it will end the overfishing.

MR. COLLIER: I'm confused on when you guys are saying the most optimistic rates of discard mortality; they're only using one. I'm seeing 90 for commercial –

DR. COOPER: No, if I'm reading this right, the estimated reductions range from 79 percent which assumes 90 percent release mortality for the commercial to 88 percent in total removals which assumes a 40 percent, so an 88 percent reduction assumes 40 percent discard mortality. Whether or not that's the intent of what the staff meant when they wrote it, I don't know, but that's my interpretation of the text.

DR. BELCHER: Any other comment relative to Alternative 3? Are you ready to discuss Alternative 4? Okay, what about Alternative 4? Nick.

DR. FARMER: I just wanted to add a point of clarification that the information here for Alternatives 3 and 4 is based on the report prepared in June, which has since been replaced by the model in September and again in December. That was the only thing we submitted for the briefing book in those two months as a new supporting documentation, and so those Alternatives 3 and 4 projected reductions even under the most optimistic scenarios – in the June version of this analysis we assumed that three was the same as five and four was the same as six because we didn't have any information on bathymetry at the time.

I just presented it in the PowerPoint, but it's less for three and four in terms of your overall projected reductions because now we have a way of interpreting the fact that not 100 percent of the red snapper stock occurs within 98 to 240 feet, and we had a way of quantifying that now.

DR. WILLIAMS: So what are we commenting on?

DR. CIERI: If the document doesn't reflect the new changes in the model, what are we doing here?

MR. CARMICHAEL: It's a valid question but he did say that what he means is the options that have a bathymetric component are actually less effective than what you're seeing here so your comments carry even more weight. So, again, it refers to the optimism of the assumptions, so it really doesn't change your conclusions.

DR. REICHERT: But can't we then in our text have at least the new numbers if they are available or shouldn't we even be discussing those?

MR. CARMICHAEL: Nick may be able to because if you do the spreadsheet, you can't actually see these reductions; is that correct? You see the tabular presentation of what achieves it and what doesn't based on the table, but it doesn't actually spit out anywhere the actual true percent; does it?

DR. FARMER: It gives you the actual true percent and the total poundage in removals.

MR. CARMICHAEL: I guess I've had trouble finding where that is.

DR. COOPER: Again, our point is to review this document and comment on this document. We can mention that the numbers presented in this document – it was brought to our attention that some of these numbers are optimistic. We can talk about which ones they are. I know staff has put in a lot of effort, but these things are hard to get through. You haven't made it easy for us. A nice little table with up-to-date numbers would be handy, but I don't we need to be tracking down the exact percentages here because we're not sure we believe them, anyway. I've been accused of being in the weeds a lot, but I don't think I've gone this far before.

DR. REICHERT: Correct me if I'm wrong, but the numbers in the report are based on similar analyses, correct?

DR. CIERI: I've got a real problem when your documentation is from June and the model was updated in September and now you're going to throw it at the council. You need to update your documentation before you bring it to the council with your new results from your model. It's not complete. These guys are going to get this tomorrow or the day afterwards and the numbers in their documentation and in their tables is not going to reflect the new model. Does that strike anybody else as weird?

MR. WAUGH: Let me just a minute and explain to you all how these documents are done now. The council staff no longer drafts these documents. These documents are put together by an IPT. That's a team composed of council, center staff and regional staff. These documents are sent to us. We participate in the meetings that prepare these documents. We write parts of the document.

These documents are provided to us generally a day before our deadline to go in the briefing book or to go out to public hearing. What you are seeing here is the latest product from the team for the public hearing. For the first briefing book you are seeing the product that the team has provided us for the briefing book probably a day or two before the briefing book deadline.

The second briefing book, you're seeing a version that came in I believe for either 17A, B or 18 the day of our second briefing book. These documents are being modified on the fly; and if there is something that is missing in this latest version that hasn't been picked up from two meetings ago or the last meeting, then that's something that we've got to sort out with the whole team. These documents are now prepared by an IPT team and not just council staff. What you all are seeing is basically getting the documents almost at the same time we get them.

DR. COOPER: A document went out for public hearing. Someone asked the public what do they think of these options, here are the effects; and now we're turning around and saying, oh, no, those aren't the effects. How in the hell are we supposed to interpret public comment? Basically we have to throw out – I mean, we can try and pick out some trends, but if someone is choosing between this option versus this option and there those are two options where, oh, no, it was updated in the model, those are completely wrong, those are overly optimistic. I mean, come on, the whole point of public comment is to present them with the information upon which decisions are to be made so we can get their feedback.

For us to be getting numbers that are changing, heck, if we're having this much trouble figuring this out, come on! In the stock assessment we've got very rigorous here is the format, here is the information, here is how you can present it, here is when you can present it, and here is when the door closes, and why we're that rigorous with the stock assessment, with the FMPs, we've got things flying around, no tables presenting summaries, numbers changing everytime pre-meeting, during the scoping, after the scoping – how relevant is the scoping now? I mean, I understand the time pressures, but this is getting a bit nuts.

DR. CIERI: Yes, it doesn't seem like a complete process and a complete document. I agree, it is sort of outside the SSC's purview; do you know what I mean? I mean that's all up. You guys

are welcome to get sued for not having your public document reflect your actual decision documents. I meant the council type of process. But in some respects it makes it extremely difficult to make any type of decisions on; and for us – I mean, I can't imagine what it's like to be an actual fishery manager in the other room trying to split hairs and not have the most updated information and the updated scientific advice on that information.

MR. CARMICHAEL: All good points and probably well taken and the message heard loud and clear, I expect, by most in the room that have to deal with this everyday. But then, again, I think it doesn't mean that you guys have to just stop because the changes based on Nick's revisions to the model, as you said they affect a couple of alternatives that are tied to the bathymetry assumptions.

The percentage changes are very small so there is the technical issue of what went out and all of that stuff, but I think in terms of the advice you guys were giving, which has been helpful, I don't it really affects that to a great extent and you could carry on because I get the sense that you're not squabbling over a percent here or there.

You seem to have an idea of how big the gray box is around the point estimates and how far you're willing to move it; so, you know, if they need an 85 percent reduction, you're saying if your option says you get 88, you're on the bubble there and we think if effort shifts you're not making it or if compliance is not a hundred percent you're not going to make it.

I don't know if people have a sense of if it predicts you'll get 91 and that's going to be enough. I'm sort of anticipating seeing what you come up with when you get to some of these options which are estimated to be more effective, so I hope that we can now carry on through the rest of these options and look at them at least with the information that's available and how it's presented in that table so maybe we can get some idea of what you think would be enough.

DR. CIERI: I think that's actually a good point. I mean, if anything, it does make things a little bit stronger, but just don't do this again.

MR. DeVICTOR: Just to Andy' comment about summary tables, there are summary tables. It took me a moment to find it, but it's PDF Page 230 that shows the percent reduction from the various alternatives. It's the second briefing book version document, so it's Attachment 11 in the Snapper Grouper Committee material, PDF Page 230.

DR. BELCHER: Is everybody looking at the table?

DR. WILLIAMS: Before we just sit there and go through every alternative, my first take is none of them even come close. They're right all at the edge. There are none that are really way over the estimated reductions that are necessary.

MR. CARMICHAEL: To get up to 90 percent.

DR. WILLIAMS: Right, because that's the other factor that we're neglecting is the percent reduction that we're targeting based on our discussion is based on the high recruitment or the base run which requires a 90 to 89 percent reduction, and all of these are right up against that; and we're saying that just the added uncertainty of effort shifting and non-compliance rules them out.

MR. CARMICHAEL: We do have to remember there is a boundary there at a hundred percent; so if they are bumping up against the limit, as we were having our discussion about steepness, we might talk about their proximity to the limit.

DR. WILLIAMS: That's true.

MR. CARMICHAEL: How much more can you get? You're getting 90 percent and there's only 10 more percent to go.

DR. WILLIAMS: Well, we could start an enhancement program and get over a hundred.

MR. CARMICHAEL: Do you have concerns about the effectiveness tied to two extreme unknowns, effort shifting and compliance. We don't know how much effort is going to shift. We don't know how much the regulations that have gone in that have closed vermilion snappers and the seasonal grouper closures and all these other regulations are going to affect behavior as well, so we do have a ton of unknowns to deal with.

DR. WILLIAMS: But they're certainly not zero.

MR. CARMICHAEL: Maybe expressing concerns that overfishing could continue to occur depending on how bad some of these assumptions are violated. Is that as far as the SSC can really go with the information at hand?

DR. BELCHER: So what is our procession on this, then? Do we continue on with what we've been doing and at least say what we think relative to what is workable but not getting the reduction that we need? Again, I'm kind of stalled because we were basically looking at them and saying up front whether or not – and I guess it's tied back to the assumptions. Matt.

DR. CIERI: Obviously, looking at this particular table with the new numbers, because the one in the document doesn't reflect these new numbers as part of the problem is the only one that even has a chance is Alternative 6 if you fudge it and say somewhere between more and less conservative. That's the only thing that's going to even get you into a workable sort of solution of all those alternatives. Every single one of the other ones don't make it, right?

DR. WILLIAMS: Except that what are you considering the percent reduction necessary to prevent overfishing?

DR. CIERI: Eighty-seven?

DR. WILLIAMS: No, that number has changed just from our previous discussions about whether the very high recruitment was appropriate or not.

DR. CIERI: Oh, yes, of course, that's right.

DR. WILLIAMS: Yes, it's between 89 and 90 percent.

DR. CIERI: In that case, then, none of the alternatives specified in this amendment have – I mean, that's the truth if that's what you're going to set your recruitment level at.

DR. COOPER: Well, here again, bringing up Chip's point, in the documents we've got some ranges that include what happens when we look at discard mortality. Here it's assuming just the 90 percent and 40 percent discard mortality; so the more conservative may be if that 40 percent discard mortality for commercial is right, maybe 4B will work. There is so much unknown and we're not given the information to parse this stuff out; that depending on A, B, C, D, and so which assumptions are run with what, who knows.

DR. BELCHER: So what do we do? Again, if we go back to the original premise of what we were answering is are options included that will end overfishing, obviously the answer up front is no.

DR. CIERI: No. My suggestion would be to simply do a consensus statement that none of the options as presented to the SSC achieve your F mortality.

DR. COOPER: In the first year.

DR. CIERI: Yes, your F mortality within the first year, period, the end.

DR. REICHERT: Under the assumptions that were provided to us during the meeting and in these documents.

DR. CIERI: And I don't know whether or not you want to add in something; therefore, the SSC recommends a new suite of options to meet your F mortality targets.

DR. BELCHER: But in saying that does that mean that we're going to provide them with a new suite of options?

DR. CIERI: No, because that's going to end up – again, that ends up being the council's – the council asks to review their options that they have developed.

DR. BELCHER: Well, I'm just thinking in terms of language that's presented; you know, the SSC recommends a new suite.

DR. CIERI: Right.

DR. BELCHER: Recommend that they develop a new suite.

DR. CIERI: Okay, that works.

DR. BELCHER: Do know what I'm saying is if we recommend a new suite, somehow that makes it sound like we are going to be recommending –

DR. CIERI: No, no, basically that the council come up with a new suite of options because none of these work, but the SSC's role is only to provide the advice and not to develop the options.

MR. CARMICHAEL: But any guidance that you have towards an alternative conceptual approach towards solving this problem would maybe speed things along.

DR. CIERI: Something more conservative than what is in front of us.

DR. BARBIERI: Before we discussed perhaps bracketing a suite of options. If these are the most optimistic; you know, we considered these are on the upper bound of optimism, then we want to develop something that is midterm and perhaps the opposite. I mean, there were some of the options that we considered there that gave us, right – so we have a range of scenarios similar to us looking at a sensitivity table that comes out of – I mean, basically what we're doing is not rejecting Nick's model, but rejecting the model as it is configured right now. I mean, we don't accept – this is like the base run, you know, given all the parameters. No?

DR. REICHERT: I know what you mean, but I object to calling this a base run. It's not even a base run.

DR. BARBIERI: What I'm saying is that this was proposed, right, and is the only option as configured with the parameters they have now to run as the option to be put in front of us and in front of the – you know, that's what I'm calling like the base run, quote, unquote.

DR. REICHERT: Okay, but I think we need to –

DR. BARBIERI: And what we want to do is deal with a set of sensitivities looking and revising the parameters to give us a midrange and perhaps the other extremes.

DR. BELCHER: That was what we were proposing relative to that subcommittee.

DR. BARBIERI: Right.

DR. WILLIAMS: Right, and I don't think we're talking about proposing other options. We're talking about just discussing the assumptions and what appropriate values might be for those assumptions. I don't think we want to go down the path of actually talking about management options. We're just concerned about the assumptions that went in and the values used for certain things, and we're going to come back with maybe some suggestions for more appropriate values to use in the future.

DR. BARBIERI: That's exactly it. To me it is the same thing as looking at a set of sensitivity runs. You know, back to the sensitivity table that is presented in the SEDAR 15 Red Snapper Assessment, there were a number of scenarios that were considered there, what-if scenarios, you know, what if natural mortality is now what is assumed in the base run, is it this or that. Right, isn't that what we were talking about?

DR. COOPER: To Luis, I just want to reiterate, though, I don't feel we've done a full peer review of the model. Tweaking the parameters doesn't necessarily mean we peer reviewed the model and now are endorsing the outputs of that model given those parameters. Yes, we should look at a range of parameters, but, again, it's like saying that we've got a stock assessment model that hasn't gone through peer review, let's change the mortality rate. Yes, we could do sensitivities, but it shouldn't be construed as a tacit endorsement of the current model.

DR. BELCHER: As Erik pointed out earlier, even though the Center has reviewed it, they have reviewed the QATC to make sure that the model, as you're feeding things in the changes are occurring, but like you're saying the issues of the regressions and all that has not been opened to debate as of yet or has not been addressed to be as of yet; so that's what Andy is getting at; it's more than just a sensitivity.

DR. BARBIERI: Right, and that's fine, but if that's going to be the case, then we're going to be – just like the assessment, they're going to have to be given the full documentation of how the model was put together, how it was configured, all the parameter choices and everything way ahead of time so they can plow through and reviewed the same way that we review stock assessments.

DR. REICHERT: Well, just to clarify, that's why I was uncomfortable with calling it a base run.

DR. BOREMAN: I don't think that we should be sitting here reviewing models. I think what we should do is recommend that the model is reviewed by an independent panel and give them some terms of reference of what we would like to see in the review, the validity assumptions and how everything works and so on. But to have the SSC sit around and reviewing models, I think is beyond the scope of our task.

DR. COOPER: So getting to the terms of reference and the language for the last question, I think we've pretty well answered it that the answer is given the information presented to us and the assumptions being made in those numbers, we do not think the management measures as proposed will end overfishing in 2010. I don't know what more needs to be – we can then talk about the various assumptions that are worrying us, but I'm not sure how much more text we need to answer the term of reference.

DR. BELCHER: Any further input? Let's definitely think on what we need to add to that. Basically I have as a starter that none of the alternatives presented in the document or in the presentations that we received will meet the goals of ending overfishing in the first year. Again, it's just a matter of making sure that the record is clear as to why we think that. I know a lot of it

is based on the fact that we're being overly optimistic in certain situations, but again we need to make sure that those points are captured.

DR. COOPER: And I think that comes in talking about the various sensitivities, analyses and the assumptions that are being mentioned in the other terms of reference. We could probably cut and paste those.

DR. BELCHER: Do you mean by the terms of reference that we're talking about these specific actions and that list that Erik had up front; is that what you're referring to?

DR. COOPER: Yes, terms of reference, action items.

DR. BELCHER: Well, they're not really TORs; that's why I asked.

DR. COOPER: Okay, action items; and in response to other action items, I think we're hitting all these points and we just rephrase them again and again for each different action item.

DR. BELCHER: Another homework task to make sure that we capture all of that this evening.

DR. WILLIAMS: The next SSC action was will any options affect fishing level recommendations; and if so, are those effects identified and addressed? I was just at a complete loss as to really how to answer that.

DR. COOPER: Well, the assumption of that very high recruitment in the first year will affect – assuming when they say fishing level recommendations, they talking the ACL in the first year. That assumption will affect it, and we've reiterated that the base or the high is probably more appropriate along with the text that's already out there; or, were they talking management options? Could we get some clarity on that?

DR. WILLIAMS: Yes, I wasn't sure what they were addressing with this action item. The only sort of direct affect on fishing level that is in there was I thought this might be addressing the Fmsy proxy thing.

DR. COOPER: Well, listed under 2.3, management options, that's a different topic.

DR. BELCHER: They had a question directed to you specifically about what was intended with this particular question, what options?

MR. CARMICHAEL: This was intended as a way of thinking are there decisions made along the way that could affect other things like could you do something that might affect selectivity which could affect the realization of your ABCs and things like that. We've had situations come up where a council perhaps chose a size limit and without being asked was never really told that, well, if you change the size limits, if you change the magnitude of your MSY because you changed the selectivity of your fishery and it went forward and we had to deal with these kind of things after the fact. It was put in there just to make you think are there any things here that

would change your fishing level recommendations. As you know, according to the Act your fishing level recommendations are MSY, Fmsy, MSST, all of that good stuff.

DR. COOPER: I can answer a definite maybe. I mean closures redistribute effort. If there is spatial segregation in the age structure, then our selectivity will change, which way it will change – if there is no spatial segregation and everything is uniformly distributed, then it depends will people pushed out of one area decide to target a different age structure – yes, probably. How? No clue.

Do we have a good handle on the discard selectivity curve? Is that well estimated, because once we go into essentially a discard fishery, that's what we're going by. If that's not well estimated, well, I think, for one, our current F proxies are not based solely on discard selectivities. Yes, so, probably.

MR. CARMICHAEL: And those are exactly the kind of things that we were hoping this would pull out and have you state so the council is aware of some of those kinds of issues going down the road

DR. WILLIAMS: Actually that latter one that Andy mentioned is probably one worth writing up is that the fact that the projections and the benchmarks are based on a catch component and not all discards when it looks like it's going to be mostly discards from here on out.

DR. COOPER: And we have no clue what the discard selectivity curve is going to be given current discards are size based; and once you get to no retention, it may not follow anything that we've seen before.

MR. CARMICHAEL: And as you mentioned if effort shift occurs, these fish are not heterogeneous over space so it could change things there. We don't know, but it could have consequences and it may affect how MSYs are estimated the next time around.

DR. BOREMAN: So the answer to the second part of that question is no.

DR. BELCHER: Any further comments to add to this or do we feel that has been capture adequately? Okay, moving on.

DR. WILLIAMS: The next action item was stated will any of the options impact future data collection and assessment efforts and are measures in place to address such impacts? I pose the question is this an SSC concern?

DR. BOREMAN: I think it is because it will feed into any research or data recommendations that we would make through the council's process. If we are going to go to the closed areas, we've got observer data we're going to need. The discard mortality data might change, et cetera, et cetera, so the answer is yes to the first part, and the second part I don't know. That probably will take some investigation to determine if measures are currently in place to address that, if the

agency or whomever is out there collecting data are actually collecting the right kinds of data to evaluate these measures or not.

DR. WILLIAMS: I actually attempted to answer it in the last sentence there, and my conclusion is no measures are currently in place to address these impacts.

DR. BUCKEL: Erik said logbook data for discards; are you concerned that – I mean, that's one thing, the MRIP Program is getting discard information, so are you concerned that those aren't adequate now or that those aren't things that we need?

DR. WILLIAMS: Well, the biggest one is we're losing any abundance index that we might have and we're losing essentially any age structures we might have, so we have no mechanism to monitor any expansion of the age distribution over time. We have no measure to collect information on the potential increases in abundance over time. About all we can do is monitor discards, which isn't going to get it as far as determining the impacts of this.

DR. COOPER: There is the Section 2.5, red snapper monitoring program; again, status quo plus fishery independent monitoring and then a, quote-unquote, research fishery which profile – I would love it if we changed that term. That's what the Japanese do with whaling. It's a research fishery. That's not what we're necessarily intending. It is, yes, a cooperative research program I think is the standard terminology. Whether or not those will meet the needs and whether or not those can happen or will happen, I think highlighting the fact that the status quo will not get us what we need, and so I don't know if we want to discuss the adequacy of Alternatives 2 and 3 under 2.5.

DR. BELCHER: Do you feel we need to?

DR. COOPER: I talk too much.

DR. WILLIAMS: Well, it's not what we're being asked specifically in this action item, but there are potentially things in place that are going to try to address this issue. That's part of the reason why I kind of started thinking along the lines of is this even an SSC concern because things are happening outside of our control or our commenting actually that may impact this. But specific to this action which is are measures in place now to address this, the answer is a definitive no.

MR. COLLIER: It might be good note that there was an independent workshop that was trying to address some of these issues and maybe try to give more credence to that workshop and the need to really start those programs up as soon as possible, because right now MARMAP as a single source of data is probably not sufficient. Marcel can probably answer that better.

DR. REICHERT: Well, MARMAP data has not been used because our catches of red snapper were too low. With the increased funding through SEAMAP, we can address some of that, but I think it will probably remain inadequate unless we put a more comprehensive plan in place. I do believe that this is at least somewhat an SSC concern because it affects the quality of science that

goes into decisions that we will ultimately have to make. I think the answer to is this an SSC concern is probably, I would say.

DR. BELCHER: Any further comments? All right, we feel that we can just allude to the fact that we know measures are being put into motion, but currently there isn't anything. Unless those programs are picked up, there is no mechanism. We can roll on to the next one.

DR. WILLIAMS: The next action stated are biological and technical consequences of the alternatives accurate and completely and clearly stated? We sort of hit on a lot of this already with previous action items. We can probably borrow text from the previous action item answers.

MR. CARMICHAEL: This is sort of the more SSC-oriented version of is the document based on best available science generic question. It sort of brings it all together.

DR. COOPER: And this is also, which we haven't talked about, are the whole economic consequences. I mean these technical consequences I assume apply to the economic side, too, which we really haven't mentioned in our comments, and this would probably be the place to say whatever it is we should say.

DR. WHITEHEAD: The economic analysis suffers from some of the same problems that you all have been talking in terms of I'd say the bottom line is that there needs to be a presentation of some sensitivity analyses in there for reasons other than you all have been mentioning, some economic concerns that we can write up.

DR. LARKIN: I would ditto what John said about that. I mean one thing that maybe can be highlighted is the one-year nature of a lot of write-up. Everything is based on a single year and then we're talking about rebuilding horizons that go out 30-plus years. There are some general statements about long-term implications. I'm not sure they're necessarily supported by some of the analysis.

I'm occasionally torn between do we analyze this for this next year, and the model that is used and the methodology, it should be mentioned, are consistent with what has been used before, so that's a strength in one sense. We not recreating the wheel, but it is ideally suited for very short-run changes. I'd like to see statement number four, trying to think about the incentives of fishermen over time and how they're going behave; just fixing the stock isn't going to change the incentives that got them there in the first place, a fairly broad concern.

MR. CARMICHAEL: We could have to do the projections out for the full time series, so all of the consequences could be carried out for that. You have the landing stream, such as they are; as much confidence is they can be given, given that everyone has recommended that really not be done, but there they are.

DR. LARKIN: I'm also torn about making specific assumptions about what else needs to be done; and I guess listening to all of this, which kind of makes my whole brain hurt, is just thinking about how dramatic all of these options are to begin with. And then if I try to look at

the big picture, yes, there are relative strengths between two through twelve or whatever we have, but they're significant.

So on the one hand I'm torn between thinking that it's hard not to believe that there are going to be some positive biological benefits. Are there enough to get us where we want to be in 30 years, I don't know. Are they good enough for where we need to be next year; maybe. So in terms of what are the relative strengths and weaknesses of suggesting specific and additional analysis, it would be hard for me to pinpoint that at this point.

DR. BELCHER: Further comments? John, I know you had asked earlier on if you would have an opportunity to speak to analyses; have you had that opportunity?

DR. WHITEHEAD: I just did, yes.

DR. BELCHER: Okay, I just wanted to make sure that we had given everybody the chance to speak because I know obviously these are less pointed towards – I mean they're more open-ended but they're less pointed towards some of your concerns, and I wanted to make sure that you had your concerns on the record as well. With that, we have hit the end of 17A. Anything anyone else wants to put on the record relative to 17A? Okay, that's it. We will get the presentation from Rick and at least get the ball rolling. We will take a five-minute break?

DR. BELCHER: We're going to go ahead and get started with Rick's presentation.

MR. DeVICTOR: Okay, just as I did with Amendment 17A, I'll go through the actions and alternatives as a summary in 17B. This is Attachment 21 to your SSC briefing material, if you want to open up the document. Again, there was a longer presentation when we went out to public hearings, and this will be a shorter one. I'll go through the 17B objectives and what 17B hopes to achieve.

The alternatives – and, really, there are a lot of actions and a lot of alternatives. I'll center on the preferred alternatives in this PowerPoint presentation. Finally, I'll go through the timeline. The 17B objectives are for nine species undergoing overfishing; where needed, specify ACLs, allocation, accountability measures; and once you have that system into place, ensure the future mortality does not exceed those ACLs.

Again, if you recall, the law says it needed ACLs in place for species undergoing overfishing in 2010. 17A is going to take care of one of those species, which is red snapper that we've talking about. The rest of the species that the council manages that are undergoing overfishing are not nine snapper grouper species, and that's what 17B is going to deal with.

Here they are; speckled hind, warsaw grouper, golden tilefish and snowy grouper. Those are what we largely consider deepwater species on the left-hand column. Then on the right-hand side we have gag, black grouper, red grouper, vermilion snapper and black sea bass. The council has taken action in past amendments for some of the species; for example, Amendment 16 for gag; to put in regulations that are expected to end overfishing.

Vermilion snapper was Amendment 16; black sea bass was Amendment 13C; snowy grouper was Amendment 13C. We're going to fill in the holes in this amendment where we don't have ACLs in place and AM. That's the main objective. What I'll do is go through what the council is looking at for these species starting the deepwater.

Again, the driving need here is to put in ACLs and AMs for these species. All are undergoing overfishing; one overfished, which is snowy grouper; and two are unknown. Speckled hind and warsaw grouper are unknown in terms of overfished, but, again, all are undergoing overfishing. Here is what the council is up against.

Your recommendations from your June '08 meeting was an ABC equals zero, but you clarified that's landings only for speckled hind and warsaw grouper. Also, a challenge for the council is this 523 fish recreational ACL for snowy grouper, so the question becomes for the council of how to put in AMs when you have as low as an ACL of 523 fish.

Of course, another challenge before the council is that when you bring up these fish most likely they are dead, so to me that says that bag limits or size limits aren't going to work so well, so you're really looking at spatial management or a time closure, so that's a challenge. Then uncertainty around particularly the recreational estimates of landings; you'll see with a lot of species there are high PSEs affiliated with them.

They are rarely encountered on the recreational side for some of these, although there has been increasing recreational deep-dropping for some of these. So that sort of sets up some of these alternatives. Again, Alternative 1, no action, and what is currently in place for speckled hind and warsaw grouper is one per vessel per trip with no sale allowed.

Then all of these alternatives that the council is looking at, two through five would set an ACL equals zero landings only. Again, since your recommendation is ABC equals zero, obviously you have to be at or below, so they're looking at ACL equals zero. Alternative 2 is prohibit speckled hind and warsaw grouper completely recreational and commercially.

Alternative 3 is to prohibit deepwater species – and I'll list those in one second – so that is to prohibit the harvest, retention, and possession of the species year around for all sectors. Alternative 4 is the current preferred alternative. It is to prohibit deepwater species beyond a 240-foot depth, approximately. There will be a line drawn with lat/longs on it – so prohibit those species.

Then also a recommendation that came from the advisory panel is to prohibit deepwater species beyond 300 feet. Those are the range of alternatives in the document, and, again, Alternative 4 is the preferred alternative. Here the maps are showing this deepwater closure. Those blue boxes are deepwater MPAs that have been put into place through Amendment 14.

So, again, seaward of that line the possession, retention and fishing for deepwater species would be prohibited if the preferred alternative is put into place. I'll list those deepwater species in a

question. The question that comes before you is are these management measures; will they go in line with your ABC equals zero landings only.

There is a question that the team had that the council may want to consider a combination of Alternative 2, which is to completely eliminate the possession and retention of speckled hind and warsaw grouper; because if this alternative goes into place, you would still be allowed one per boat with no sale.

Okay, here is the deepwater species that would be prohibited seaward of that line; snowy grouper, blueline tilefish, yellowedge grouper, warsaw grouper, speckled hind, misty grouper, queen snapper and silk snapper. So those are the actions pertaining to the deepwater species in Amendment 17B in terms of speckled hind and warsaw.

Now, the other two species were golden tilefish and snowy grouper. Again, I'll just highlight briefly the need for action; golden tilefish undergoing overfishing but not overfished, and this was an assessment and data through 2002. Regulations were put into place for 13C for golden tilefish and expected to end the overfishing. We won't know until we get the next stock assessment.

The commercial ACL currently through those actions in 13C was set at the Fmsy level so the council is looking at lowering that to setting the commercial quota at Foy. We do not have recreational ACLs or AMs in place for golden tilefish, so, again, 17B will put those into place. Of course, just as with the rest of the species, the recreational landings, there is uncertainty around them, and you can see the PSEs are to be kept in between 40 and 50.

So here is the preferred alternative – again, I'm not showing the complete range of alternatives, so they're looking at lowering the commercial quota to the Foy from the Fmsy level. And just as they currently do with snowy grouper, they're looking at specifying an ACL for the recreational sector in numbers of fish. Snowy grouper is 523 fish right now.

The recreational ACL of golden tilefish, they're looking at just under 2,000 numbers of golden tilefish allowed to be killed each year. Moving on to snowy grouper, undergoing overfishing and overfished; again, data through 2002. As I said before, the recreational ACL is 523 fish; and, again, uncertainty. So, again, these are challenges before the council in putting in management regulations.

What they're looking at for snowy grouper is to put in one per vessel per day, so right now it's one per person per day, and they're looking at changing that to one per boat; and, again, it's to get the hooks out of the water and the deepwater closure, too. Moving on to AMs for these species, here is the current preferred alternative that the council is looking at for golden tilefish and snowy grouper.

If the ACL is exceeded reduce the length of the following fishing year by the amount required to ensure landings do not exceed ACL in the following year; and, again, there is uncertainty around those. You can see for golden tilefish recreational landings through the MRFSS or MRIP

Program, there is a huge spike. What this is with this three-year running average – I think you all have talked about it before, but it's to smooth that out by using three-year running average to look at that.

So, again, this is the council's current preferred alternative for an accountability measure for these deepwater species. Now, moving on to the rest of the species in the amendment, there is five them, black grouper, black sea bass, gag, red grouper and vermilion snapper. All are undergoing overfishing. Black sea bass is overfished. Black and red grouper, the overfished status is unknown. That's currently undergoing a SEDAR process at the moment.

The review workshop is going to be held in January. You guys will review it in April and most likely the results of your review will go before the council in June of 2010; okay, that stock status of black and red grouper in the South Atlantic. The challenge; there are no ACLs for black or red grouper. We have them for the rest of the species but not for black or red.

There are no recreational AMs for any of these species, so to get in line with the Magnuson-Stevens Act, the council is looking at putting in AMs for these species. As I mentioned, there currently are not ACLs on the books for black or red grouper, and so the challenge that comes before the council is, well, how do you do that?

The stock assessment is going on right now, but what they have currently as the preferred alternative in the document is to consider this idea of an aggregate commercial ACL and then one for the recreational ACL. This would be gag, black and red. Okay, so you can what is currently in place is a commercial gag ACL of 353,940 pounds, and that was put into place through Amendment 16, and that was expected to end overfishing of gag.

The recreational gag ACL that is in place is 340,060 pounds. On the commercial side, when that gag quota is met, you prohibit the commercial harvest of shallow water grouper species, so it's bunch of them. So what they're looking at here is keeping the gag ACL in place, but also having this gag, black and red, whichever is met first you would shut down the shallow water grouper species.

So this is something that they've put forward. They're going to talk about this week whether to keep going forward with this or wait until you have the stock assessment results. At the time hopefully we'll MSY for black and red grouper, so do they want to move this out of 17B and wait and set up separate black or red grouper ACLs and not going to move forward with this idea.

AMs for these species – and, again, these are just preferred alternatives – if the recreational ACL is projected to be met, close the fishery, and this is what we do on the commercial side of things. These are basically the commercial ACLs that NMFS looks at; and when they think they're going to meet it, then they'll close down the fishery and prohibit the harvest and possession.

So what they're looking at for the recreational side is for the overfished stocks of these which – for these species they would just be black sea bass right now, but on the recreational side of

things, monitor those recreational landings; and when you think you're going to meet it, prohibit the possession of those species.

Then in terms of taking off the following year regardless of stock status; if the recreational ACL is exceed for these species, take off the amount in the following year that you've gone over. But, again, they're looking at a running average of three years; so even if you just go over one year, that doesn't necessarily mean you take off that year. There would be a three-year average. Those are AMs.

That's a brief run through of what is in the document in terms of accountability and ACLs for the rest of the species undergoing overfishing. This one is on a bit faster track than 17A at the moment. This is an environmental assessment so you do not need to file a DEIS, a draft environmental impact statement, so the council is going to consider approving to sending this on to the Secretary of Commerce when they meet this week. So, again, this could be the last time you see the actions in 17B.

DR. BELCHER: Thanks, Rick. Any questions for Rick? Scott.

DR. CROSSON: Rick, just remind me; are there any species right now that the South Atlantic Council manages where we have a recreational closure if we exceed a certain amount during the year? I'm just wondering about the enforceability of that; how well people are aware of the regulations that the council puts out on the recreational side.

MR. DeVICTOR: The question is do we have a fishery right now where we close the recreational fishery once we're projected to meet that ACL?

DR. CROSSON: Yes.

MR. DeVICTOR: No, we do not.

DR. BOREMAN: I hate to ask this, but what data are you going to use to monitor the recreational fishery for in-season closures? You can't use the current MRFSS data because it's a two-month wave, so are you expecting something better to come along?

MR. DeVICTOR: NMFS would have to speak to this, but my understanding is they would be using MRFSS and the MRIP Program.

DR. BOREMAN: That's why I hated to ask it. I wouldn't put too many eggs in that basket because I don't think – unless you're willing to pay through the nose, you're not going to get any finer temporal resolution out of MRIP than you're currently getting out of MRFSS. It's going to cost. Everytime you have the waves, like you go from two months to one month, you basically quadruple your sampling in order to maintain the same level of precision you're asking yourself. It is going to get very costly, but it's going to take another six weeks after the wave ends to get that data out.

MR. WAUGH: The plan is to use the existing MRFSS/MRIP data collection program on the same sampling frequency and to project ahead. That's what I understand was done for black sea bass in the northeast, and that's what was done for greater amberjack in the Gulf, and both of those recreational fisheries were recently closed.

DR. COOPER: And to that point, even if MRIP does increase the frequency of the wave, we were told at the national meeting the timeliness of the data will not change, so it will still be six weeks to two months lag on the data; and so especially with these with such low ACLs it would be two months before you get the data on the first wave. So these would be projected based on very scant data on the very early parts of the wave and that could be what the decisions are based on.

MR. DeVICTOR: Just to clarify, under the current preferred alternatives in the document and in terms of the recreational fishery and closing the fishery, that would just apply right now to black sea bass. It wouldn't apply to speckled hind and warsaw. It's for those species that are overfished of that group.

DR. COOPER: Just in the presentation you've tossed – and I may be getting the species confused – for the golden tilefish the recreational AM, I believe you specified changing the season length the next year; whereas, in the other ones you took it off the ACL and left it open as to how you achieve that, and I'm wondering why is it different or am I just completely confused?

MR. DeVICTOR: So for golden tilefish and snowy grouper, if the ACL is exceeded you reduce the length of the following fishing year; yes, so that would be the AM for these two species, and not taking it off the following year, but it would be shortening the following season.

DR. COOPER: And I guess the question is why the difference, where one you're taking the poundage off the ACL and the other one you're specifying the only AM is changing the season length and not anything else, which I would think seems to be tying the hands of management as an AM measure; whereas for the others it's far more open as to how you then achieve that lower ACL. It may be in the documents, but I would be curious to hear the rationale of why we're treating them differently.

MR. DeVICTOR: In terms of taking it off the following year, which like I said they're going to consider for black sea bass as it overfished, that's on a rebuilding plan and they want to make sure that you keep on the plan, keep on that plan and do not get off of that. For these species they're looking at 523 fish, as I said, for snowy grouper and less than 2,000 for golden tilefish, so that's going to be a hard challenge to monitor that 523 fish versus black sea bass, which the recreational ACL is about 350,000 pounds.

DR. COOPER: I thought the AMs were not just for the overfished, but when you put up the slides for the AMs on that group, I thought the second line was for overfished and not overfished. You're far open as to how you address the overage in these than it is with the ones that it's so much lower and you're only giving yourself one option to fix it.

Given how long these amendments may be stuck in place, I would think the council would want a little more leverage as to how they do it rather than having the whole amendment to change the AM; you know, give them more flexibility so long as they put the push back.

MR. COLLIER: This is just a question for me, but does anybody have an idea of how many fish would have to be observed to get that 523 snowies? Would it be one fish or would it be two or five when you're doing an expansion? Is there any idea on that kind of level?

DR. CIERI: What is the proposed management alternative? Okay, which one of the ones on the next slide meet that criteria? An ABC of zero which is landings only, there is actually something else I wanted to bring up. Normally it's allowable biological catch and not landings; where landings is a management – that's a management uncertainty. But of those, Alternative 1 doesn't make it. Alternative 2 doesn't make it. The only one that gets it is Alternative 3, right?

MR. DeVICTOR: And just to clarify, this deepwater closure, the main reason it's a speckled hind and warsaw recommendation; but as I highlighted, one of the problems that has come from the team is that unless you also put in Alternative 2, which is to prohibit the harvest and retention of speckled hind and warsaw grouper, you'd still allow – inside of the 240-foot depth you'd still allow the speckled hind and warsaw grouper harvest.

DR. CIERI: Right, if that's the case, in Alternative 4 and 5 how many fish do you kill?

MR. DeVICTOR: I don't know and I'm not sure if we do know that, if we do project if you're under 523 fish.

DR. CIERI: Right, but how many fish will you keep; will it be zero or greater than zero for any of the deepwater species under 4 and 5?

MR. DeVICTOR: Under 4 and 5 you would not be able to fish for and retain those deepwater species – I had that one slide – beyond that depth, beyond the 240-foot depth. Inside of the 240-foot depth, yes, but you're asking how many would you be able – and it's under the current regulations and I have that in the no action. For snowy grouper it's one per person.
DR. CIERI: Okay, does that achieve an ACL of zero? Is one per person greater than zero?

MR. DeVICTOR: Well, ACL equals zero is for speckled hind and warsaw grouper. It's not for snowy grouper and golden tilefish. What the team is going to ask the council to consider is choosing a preferred of 2 and 4, because 2 really gets the landings of zero if you totally prohibit speckled hind and warsaw grouper.

DR. WILLIAMS: One issue that comes up when we start talking about deepwater species is of these that we've classified as deepwater, speckled hind is the least likely to be a true deepwater species. We've got plenty of records from samples where they're sampling large adult fish in 120-foot waters, easily. So speckled hind may appear to be a deepwater species now because it has been knocked so severely and pushed into the deepwater, but historically I would not have classified that species as a deepwater species, solely.

DR. BELCHER: We have a member of the audience that would like to talk to that point.

MR. ALLISON: Dave Allison; I'm senior campaign director for Oceana. One of my campaigns is to work on enforcing the bycatch provision of the Magnuson-Stevens Act. What I've noticed during the presentation is that a discussion has been referencing landings rather than catches. In fact, the Magnuson-Stevens Act requires an accounting for all catches.

That would also apply when talking about the non-targeted fisheries, the fisheries that catch, for example, these fish that are being discussed here, the catch in other fisheries. It's just my understanding that the Magnuson-Stevens Act does require for accountability and management measures for all catches and not just landings.

I think to the extent that you only address landings it will – whatever your management proposal is, it will be a violation of the ACL/AM provision of the MSA. I just wanted to raise that because we will be watching very closely all of these proposals in all of the councils to ensure that ACL/AM does address all the – basically counting all the fish that are caught so that all the fish can count. I would be happy to answer any questions on this either here or after the meeting, and thank you very much for giving me a chance to speak as we've moved past the close time for the meeting today.

DR. BELCHER: Any further discussion or questions for Rick's presentation and information?

MR. CHESTER: I would just like some clarification on Preferred Alternative 4. Am I correct you said that does allow possession of warsaw and speckled hind with the 240 feet?

MR. DeVICTOR: Yes, that's correct, within 240 foot, and right now it's one per vessel per trip with no sale. That one per vessel applies to commercial and recreational, so, yes, you would be under those regulations within the 240-foot depth.

DR. BARBIERI: Rick, I guess the rationale then behind Alternative 4 is there will be a very, very small probability of running into those species within that depth boundary there?

MR. DeVICTOR: And that's data I could pull from the document and highlight where that is at, but you have discard information there, quite a bit I think of speckled hind in those shallower than the 240-foot depth, so I think that there would still be mortality of, say, speckled hind within that 240-foot depth, to some degree.

MR. CHESTER: If that's the case and this group has recommended an ACL of zero, I certainly would support some combination of 2 and 4 as you indicated.

DR. COOPER: I don't quite understand how it would work that if you exceed the ACL and you trigger an AM or you're setting the regulations such that you can legally take them which will trigger the AMs immediately, and you'll then shorten – I can't remember if this is shortening the season, but it seems like you're allowing them to – okay, ACL is zero means if you catch any you trigger an AM, but you're allowed to catch them within 240; so as soon as we have any fish

within 240 and to get caught, you trigger an AM; what does the AM do but shorten the season next year? I mean, it's like you're allowing something to be triggering an AM if they do it, which seems kind of like a really bad way to structure something; or am I missing something?

MR. DeVICTOR: Just to clarify, the council is not looking at putting AMs for speckled hind and warsaw grouper as it's an ACL of zero. Those AMs that I went through are for snowy grouper and golden tilefish.

DR. COOPER: Can you legally not set an AM?

MR. DeVICTOR: Well, it's something that we have raised before. It's a unique situation where you're having an ACL of zero pounds, so what is your trigger; any kill at all?

DR. COOPER: You'll land them and tax them, I don't know, but you have an AM of zero but you're allowing them – it's one thing to say the ACL is zero and don't catch them. It's another thing to say the ACL is zero, but you catch them and there is no AM. Then your ACL isn't zero. Your ACL is whatever you happen to catch within 240 and we're not going to specify that number, which I don't know if you're allowed to do. I thought you have to set an ACL and not just the ACL is what happens if we pass this regulation. I think you need a number there, and it's obviously not zero if you're allowing landings within 240.

DR. CIERI: Kind of like on 17A; none of these options get you to where you need to be. Combinations, they would and a combination of 2 and 4 would, but as it stands right now none of those alternatives, as they stand, gets you where they – they do not equal an ACL of zero. If you allow possession of that particular species, that's not an ACL of zero. None of these alternatives meet that ACL of zero; therefore, we're back to where we were with 17A, in my opinion.

DR. BELCHER: Just to kind of throw this out there, too, from our discussions, the reason why this happened as far as why there is a zero there is we had no accounting for bycatch numbers in the assessment process. It has been done external. We have what was post-quota bycatch mortality, PQBM, analysis that was done through Jack McGovern's office through the council process available to us at the SSC. Those numbers are not at the time of the assessment.

More recently we have assessments where that is built into it, but currently it is not. So with the data we had at hand, all we could say is that it needs to be directed catch is zero. The problem is – and we acknowledged this when we were working toward the ABC – is especially in this particular situation where you do have post-quota bycatch mortality, because of the way that the system works, there is a remainder there that we are not privy to. It's not built into our process. If it was built into our process, this would be more reflective of what the PQBM allotment is.

We didn't have that available, so that's kind of where this quandary is coming in; and, again, how do you rectify that? To me the PQBM process needs to be incorporated into what we're reviewing is how you rectify that. But how we are going to do that, I have – you know, again, those discussions have been acknowledged, but we have not –

DR. CIERI: Have we set an ABC for these stocks?

DR. BELCHER: That was what we originally set was an ABC of zero.

DR. CIERI: Right, so if the ABC is zero; therefore, the ACL has to be zero, and therefore there can't be any possession of these species, ever, right? I mean it seems pretty cut and dried in my head. If the ABC is zero and the ACL is zero; therefore, you can't have any possession even if you're within 300 feet or 240 feet.

DR. BELCHER: I'm following your logic a little better now as you talk about the combination thing. Yes, you need a prohibition of those two species regardless of where you're fishing; and in addition to that, you want to do more for the deepwater species and by all means add to that.

DR. WILLIAMS: Doesn't Alternative 3, though, do that because that prohibits deepwater species irrespective of depth?

MR. DeVICTOR: Yes, that is correct.

MR. WAUGH: When we were first putting these alternatives together, the alternative originally was prohibiting all snapper grouper fishing deeper than 240, to get hooks out of the deep water. Because the way the council ended up wording this now, you can fish out there deeper than 240 feet for vermilion.

You just have to throw back all your speckled hind and warsaw and other deepwater species, which to some of us is problematical. When we first were getting at this depth thing, it was to have no hooks in the water deeper than the 240 so that you didn't have any discard mortality. There was a recognition that there is a catch of speckled hind and warsaw in the midshelf fishery.

The feeling was that the survival rate is higher in that midshelf fishery; so if you prohibited all harvest and retention, that's about as close as you could get to zero without totally prohibiting the midshelf fishery. Where we've ended up isn't quite consistent with where we started out, and so that's why you're having some difficulty with the way these alternatives are worded.

MR. CHESTER: I think we need to say in our comments that the only options that accomplish the recommendations of the SSC is Alternative 3 or the combination of Alternatives 2 and 4. I think we need to be affirmative.

DR. COOPER: Basically all of the action items that were 17A we've got for 17B. All the questions that Erik had up, 8.6 on our roadmap, so, yes, we've have been asked to go through all those questions for this document.

DR. BUCKEL: Alex, I think only Alternative 3 will do it, right, because Alternatives 2 and 4, you're still going to have fishing for deepwater species in less than 240 feet and you're going to have the bycatch issue with the speckled hind that are in that 100 to 240 feet that the bulk of those are probably going to die. If you prohibit the deepwater species with Alternative 3, then

you're going to get the hooks out of the water in that range where there is a lot of speckled hind in that shelf break area, the 120 to 240, unless I'm missing something.

MR. CHESTER: Yes, but won't you have all the other fishing going on for the non-deepwater species. I mean invariably you're going to be catching some of the deepwater species.

DR. COOPER: At one point you were doing a group ACL for a suite of species; does that automatically you're doing a complex, and does that, then, have to follow the guidelines of NS 1 on grouping species according to life history and vulnerability when we do a group ACL? And if so, are we grouping them based on life history and vulnerability, et cetera?

That may be a legal question, I don't know. Perhaps we should get some advice on whether or not such a grouping will conform with the NS 1 Guidelines on the structure of a complex and we lump ACLs even through we're not lumping ABCs. There is a gray area there.

MR. DeVICTOR: Yes, and I think that's great question. We were going to get into groupings more in the Comprehensive ACL Amendment, but, yes, I think that is a legal-type question that we should get some feedback from.

DR. BELCHER: Any other comments relative to the presentation and just generalized comments on 17? I'm waiting to hear back from John on how we're going to proceed.

MR. CARMICHAEL: We are looking at six o'clock, and 17A and 17B are two of the most critical items because the council is going to be taking its action to pick its preferred which triggers the DEIS, when then they make their final action in March before you meet again. The other issue that we had on the schedule for today is the Comprehensive ACL.

Well, that totally ties into all of the work you have to do in April, as we've discussed earlier. The other part was the corals, but corals fall into a data-poor species which probably falls into, as did Spanish and cobia, your discussions about ACLs for data-poor species, we expect that you'll probably not be in a position to make recommendations on those until April, either.

What we're thinking is let's continue with 17B, which is a critical topic; and if you don't get to the discussions dedicated to coral, you will bring it up when you do the ACLs. Let's go through 17B as long as you want to go on tonight and pick it up again in the morning and then move into the ACL discussion for tomorrow.

DR. BELCHER: I'm putting that to the group. How much further we go on tonight; again, think about what we discussed for 17A relative to those questions; and as Andy pointed out, the same set of questions coming up.

DR. REICHERT: But didn't we have a subgroup item to accomplish also tonight?

DR. BELCHER: Subgroup items to talk about, at least giving some parameters for Nick to consider.

DR. BARBIERI: But I think we continue the discussion in the morning and the questions of 17B, right?

DR. BELCHER: Yes. Is that what everybody would like to do is basically recess right now, let the subcommittee get together and talk: and then those folks who want to talk about 17B can get together with their respective leads who are John, Luis, Marcel and Alex.

DR. COOPER: Given tomorrow is our last day and I don't know when people are planning on flying out, the chance of doing a late night tomorrow I would assume is slim to none. In my opinion we've got a considerable amount of work to do on 17B and the Comprehensive ACL, and it's my opinion we need a default measure before we leave here for a Comprehensive ACL for a data-poor species when we just have a data stream. Given how long it took for 17A; i.e., all day minus an hour and a half, as much as I would love to call it a night, we've got a heck of a lot of work to do even just to come up with a default fallback, just in case, measures to go into April with for the comprehensive.

DR. BELCHER: I hate to throw this out there, but do we already have a fallback with the 75 percent of the landing stream that has been put forward by other folks? That was the question I never really got the answer to; that it had been indicated it was already in the guidelines. Is it not in the guidelines; is it just the way that business has operated and folks have assumed that 75 percent? Matt says 75 percent is used in the northeast.

We'd have to talk, obviously, the time series length and that kind of deal, but is that something that could easily be a fallback or not? I'm just posing that out as is it really going to take that much for us to – is there a temporary crutch we can fall on at the moment as a placeholder? I'm open to suggestions, and I want to put it to the group. Andy is right in that tonight is the last night that we would have to burn the midnight oil, so to speak, but, again, with other tasks on the table, too, we'll all be operating on one hour of sleep.

MR. WAUGH: I wouldn't worry about dolphin and wahoo. I suspect when you get in that, you're going to say it just folds into the Comprehensive ACL discussion. I think what we'll probably do is just cancel that committee meeting because they were just going to review what you all came up with on guidance there. The most critical item in terms of the council's schedule is 17B because that is the one document they could approve to go forward to the Secretary at this meeting. I just offer that in terms of prioritizing.

DR. COOPER: To that point, if we don't, say, get to the Comprehensive ACL; therefore, in April we come up with some default measures, we probably won't have the data to put the numbers in; is that actually a lower priority than 17B, not being able to put numbers in in April?

MR. WAUGH: Well, in terms of the council's priorities, the Act lays out 2010 for getting in our ACLs and AMs for our overfishing species, and that's what 17A and 17B do, so those two are critical for 2010. In 2011 we have to have them in for all the other species. That's the priority, 17A and B first. 17B, the council's plan is to finish at this meeting; 17A at the March meeting; and then the Comprehensive ACL, our expectation is to get numbers out of you all at your April

meeting, so then we can prepare a document to take out to public hearing and get completed so they can be implemented during the 2011 fishing year. At least that's the timeline that the council is trying to meet in order to comply with Magnuson.

MR. CARMICHAEL: I may very well schedule you a webinar if you don't get through that by five o'clock tomorrow when people start leaving, so that you do have some opportunity to discuss what you need for April. We will do something to make sure that you have that discussion of what you need to have by April. It may be multiple webinars, I don't know, but we need to have that.

DR. BELCHER: So what is the pleasure of the group, then? I've had two different suggestions. John says take another half hour and see where we get, and Luis is thinking come back at it fresh the first thing in the morning.

DR. BARBIERI: And then there is the issue that we can try to do some homework tonight in terms of doing a little bit of research and summarizing some of those things that we're going to want to discuss tomorrow. I just wonder how much within the next 30 minutes we're going to be able to have a real productive discussion.

DR. BELCHER: Okay, recess, we'll do subgroup work tonight, and then we'll start at eight o'clock.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Sheraton Atlantic Beach Hotel, Atlantic Beach, North Carolina, Tuesday morning, December 8, 2009, and called to order at 8:00 o'clock a.m. by Chairman Carolyn Belcher.

DR. BELCHER: Okay, let's get started. Does anyone have any further comments or questions for Rick on his presentation of 17B? All right, Luis, we'll go into the SSC action items for 17B.

DR. BARBIERI: Well, the questions that we have to address, the actions are at the top of Page 12 of the roadmap. We have pretty much the same set of questions that we had yesterday for 17A. I thought it would be nice to have Rick's presentation up there so if we have to review in brief what is being proposed and discuss, we have it right there.

Question Number 1 is do management option analyses, including projections, follow acceptable practices, are they based on appropriate inputs and are assumptions clearly stated and reasonable? Actually, by the way, did we finish going through the entire presentations and the proposed actions for all the species?

Okay, so for the first question, my basic reaction is that we had some is some level of dissatisfaction with the way that some of the proposed actions will be addressing some of the species. Specifically for the deepwater species, we thought that the preferred alternative was not going to completely take care of protecting or preventing any catch.

DR. CROSSON: Is that actually the same as the first bullet points? I'm looking further down, the fourth one says are options included that will end overfishing. I think it's a separate issue from whether there is an acceptable option compared to whether the options that are there clearly follow projections, et cetera.

DR. BARBIERI: Well, my interpretation of do management options analyses – well, if they follow acceptable practices, are they based on appropriate inputs?

DR. BOREMAN: I see what Scott is getting at, but the first bullet I think is more are the methods used in the analysis appropriate and then we talk about the outcomes; because if the methods are inappropriate, then the outcomes are irrelevant.

DR. BARBIERI: So, is your feeling that they are?

DR. BOREMAN: I couldn't see anything to the contrary. I couldn't see any evidence to the contrary to argue against them. They seemed to be appropriate to me.

DR. BELCHER: Any other comments relative to that, then? Everyone feel comfortable, then, with the methodology that went behind the generation of the alternatives? I'm just asking if there is further discussion.

MR. COLLIER: I did want to point out that there really is very little data for the speckled hind and warsaw grouper, so the projections that we have are not there. I would say those aren't real good, but they can't be real good because we really have no data. There has been no harvest on those species, no directed harvest. There is some data being collected, but that's not it.

MR. CARMICHAEL: And those aren't the only species, too, so there is a whole bunch of them that are in here.

DR. BUCKEL: Yes, let's put the table up with the complete list of species and we can go through them one by one to address these.

MR. DeVICTOR: This is the list of species where the prohibition beyond 240 would apply to, but in terms of the species that this amendment is addressing, this is your list.

DR. COOPER: One thing is I just had trouble because we had so many species going back and forth and making sure that all the ACLs that were based on Foy actually produced landings that were less than the ABCs. I assume they do. I'm not entirely sure what the methods are that were used in that. It seems like especially when we start looking at the measures to achieve the ACLs, whether or not those will actually produce landings less than the ACL. Especially when you started looking at bag limits and stuff, I think someone mentioned that how many fish need to caught before something is triggered. I think that was with snowy with 536 individuals. Will these things actually achieve the ACL? As Chip just pointed out, I didn't see a whole lot of analysis showing that these would work. Again, I may have missed it, but again it would be nice if you could point it to me.

DR. CIERI: One of the things that might be extremely would be to simply have a simple table with each one of our species, the OFL, the recommended ABC and then the proposed ACL. That way we can get a good, hard look at things, if you can get it up on the screen.

MR. DeVICTOR: Again, this is Attached 21 to your briefing material. It's Amendment 17B, the public hearing draft. This is on PDF Page 169 or 145 of the hard copy. Here is at least the OFL and the ABC recommendation that you all have brought forward and then there are footnotes below outlining where these have come from. Now, we have an appendix which I can dig up, too, which also shows the current ACLs for these species in place.

DR. BARBIERI: And this one comment I guess that maybe we want to revisit during the Comprehensive ACL discussions Andy brought up and yesterday it came up again as well is this issue of OY, the definitions of OY. We're going to have to perhaps reevaluate how we're going to be dealing with OY given the new procedures for coming up with ABCs and ACLs because in some cases we're going to have ACLs that are not really consistent.

Thinking about Rick Methot's presentation at the National SSC talking about defining how those different quantities need to be done in a coordinated way instead of isolated one by one because we will have ABCs at times depending on how we define them that may not be consistent with the current definitions of OY or compatible, perhaps.

MR. DeVICTOR: Let me also point out – and this is under Snapper Grouper Committee. It's an appendix of 17B. So if you go to Snapper Grouper Committee, 17B is under Attachment 15, and then you go into the appendices, and it's actually Appendix D, and here is a table that is somewhat dated in terms of what the allocations are, the commercial quotas, the recreational allocations, the OFLs and the ABCs.

I say it's dated because it hasn't been updated. For example, you'll see under black grouper an OFL of average landings over the last five years, and that's currently not in place. This should give you an idea in terms of some of the species on what the ABCs and the ACLs.

DR. CIERI: It's difficult to get all this stuff together in a summary form and getting an idea – having an idea before you actually make the recommendation, we need to know stuff and it's really hard trying to get all this stuff together, so maybe we can get like some summary tables. A lot of times it's very difficult because all this stuff is listed under the Snapper Grouper Committee as opposed to stuff that – it should be stuff that we're looking at so maybe it should be in the SSC folder.

Going back through and looking at the management stuff, there is enough stuff to look at for the SSC and whether to know where to find it within the management folder, so getting some of that stuff together can be fairly difficult. It's kind of convoluted. Maybe including some of that stuff in the presentations might help.

MR. DeVICTOR: I'm sorry, I shouldn't have gone to the Snapper Grouper Folder because you actually do have it in your folder. It's Attachment 21 and it's Appendix D. I think this is

something maybe John wants to talk about, but I talked about it. The first place that people should be going is the "Read Me First" to this rather than going into the actual PDF in the folder.

We have 17A in the Snapper Grouper Committee, the Law Enforcement Committee, several places, but we may only have one PDF. It's all about the links so you may not even find certain documents in your folder, so you should really be going to what I have on the screen here and accessing the documents that way.

DR. CIERI: That's a lot of stuff and especially when documents are changing. I know I accessed the FTP folder and just downloaded everything because so many documents change. There just needs to be a little bit better tracking these documents and documentation and when we get them. When you're giving us a second or third briefing book a week before the meeting, that kind of bites.

DR. REICHERT: Yes, I just talked with Rick about it and although we shouldn't go to the documents, the names of the documents are not very easy to decipher. Although we should go to the links, it may help if the names were a little easier understand so we can actually go to the documents themselves rather through the "Read Me First".

DR. CIERI: And I would really suggest at some point that we sit down and that we make some recommendations on what we are going to look at and the timeframes involved. It is completely unprofessional to send documents three or four days before a meeting is supposed to happen and expect them to be reviewed. It's also unprofessional to have significant changes within those documents within a week of when you want us to meet and review them.

MR. CARMICHAEL: I don't know that you necessarily have that. The core stuff for 17B is what you've had for a while.

DR. CIERI: Right, but for 17A where there have been significant changes –

MR. CARMICHAEL: We got the model it looks like a week.

DR. CIERI: Significant changes with the model.

MR. CARMICHAEL: I guess that's where the debate is because you did have the core model that had been available in September, but well in advance of that –

DR. CIERI: But the runs in the document did not reflect what was in the model.

DR. BOREMAN: I think it's not productive to be arguing about that now. I think it's more productive to say that in the future, the next roadmap that we have – when you have the action items' list with these bullets, it would be useful if you could point to which documents are appropriate to be reviewing to answer each of these questions that are raised under the action.
Like the first bullet here, do management option analyses follow acceptable practices; well, if you can point us to which documents have the management analyses and maybe what sections of

those documents have the management analyses that we can review so we're not on a scavenger hunt trying to find this information.

We don't have the ability to sort through everything quite as easily as staff and others who have a better feel for the whole range of documents that are available and what information is tucked where, so just a little more guidance there for us so we know what sections we should be reviewing to answer the action items or what documents at least.

MR. WAUGH: I thought it was the SSC's policy that you all not look at material that you don't get two weeks before the meeting; and perhaps if that's still your desire, make that clear in your report and perhaps what we can do is just send you all a separate CD with just your material and then not inundate you with these multiple additional distributions after that two-week period.

DR. BARBIERI: Well, back to the question for our review and comment action bullets – do you have a comment?

DR. WILLIAMS: Just back to 17B, that table that was put up earlier on Page 145, PDF 169, we don't have an ABC value for golden tilefish yet we do in this other table. I'm curious why that is, why do we not have an ABC value in that table for golden tilefish.

MR. DeVICTOR: Go to Footnote Number 3 and I think it explains the golden tilefish – your recommendation at the June 2009 meeting.

DR. WILLIAMS: So where does the value come from in Table 1 of the limits and – because that has an ABC value in it.

MR. DeVICTOR: Yes, and that's where Table 1 is somewhat dated and it has to be updated. Use the table in the document. I just wanted to show you that we do have a table and in the appendix that needs to be updated that shows everything.

DR. BARBIERI: And, by the way, to that point regarding that table, this might be an appropriate time based on what Matt has proposed -- I mean, we take a look at this table, the limits in place table. It might provide a useful format for us to have. Of course, this one is still reflecting what we discussed back in June of last year, but in terms of the format, the actual inputs to the table, it's just to consolidate it and easy to see and compare; that might be something that we request be provided whenever we have similar types like this.

DR. REICHERT: Are you talking about Table 1 in Appendix D or Table 1-4 that's up on the screen?

DR. BARBIERI: No, the Table 1 that had the gray boxes, yes, limits in place, that John I think had put together right after the June meeting, and I think it's very useful.

DR. COOPER: Okay, on this Appendix D, limits in place, golden tilefish, ABC yield at 75 percent Fmsy; is that like a June 2008 decision? I mean I don't think we've been setting ABCs as a function of F and Fmsy and picking random percentages of OFLs, have we?

MR. CARMICHAEL: That needs to be updated. That's why it's directed towards the tables in the public hearing summary or in the document itself that show ABC as being unknown for golden tilefish, and then intended to update a table like that to try and show the whole progression of OFL, ABC, ACL, ACT, the whole thing in one comprehensive place. Are there any questions about the analyses?

DR. COOPER: With respect to that table right there?

MR. CARMICHAEL: With respect to Amendment 17B.

DR. COOPER: Okay, should I repeat what I said a minute ago on how do these various regulations propose to not overshoot the ACL and how those ACLs compare to the ABCs? I asked if I just didn't find where that was and can you point me to that section that does that?

MR. DeVICTOR: That is not in the document right now especially in terms of speckled hind and warsaw. That analysis has not been completed.

DR. CIERI: I think we need that table of OFL, ABC and then the proposed ACL before we can even really do – I mean, without being able to look at that stuff we're not sure whether or not the ACL that is attempting to be set is appropriate with the ABC and the OFL.

DR. WILLIAMS: The ABCs for black sea bass and snowy grouper are based on a rebuilding plan. We're now calling them ABCs. Those rebuilding plans were based on a 50 percent probability of success because they're dated pre-authorized Magnuson Act. Now that we're in the new authorized Magnuson Act, now that we're actually labeling them ABC, should we not be taking a precautionary chunk of that rebuilding plan, so, in other words, allow for a higher probability of success instead of sticking with the 50 percent probability of success?

DR. COOPER: I guess that begs the question when we have an approved rebuilding plan that I believe has a specific F schedule; does the ABC control rule, since it essentially changed what the target is, does that trump an existing rebuilding plan trajectory? I would hope someone in the room could answer that.

DR. BOREMAN: Yes, I can. We just had this issue arise with black sea bass in the Mid-Atlantic. The answer is, no, ABCs cannot trump a rebuilding plan. You cannot set the OFL above the rebuilding target, so the F for the appropriate fishing mortality rate cannot exceed the Frebuild. So, basically, your OFL, which is not as you normally would be set equal to MSY or a proxy; it would be something less than that, whatever the target is.

DR. COOPER: But in this case our Frebuild is only for a 50 percent of rebuilding; our current control rule Frebuild should be set at 70 percent chance, so if the Frebuild in the current

rebuilding plan is higher than we would be doing for new rebuilding plans based on our ABC control rule, so we wouldn't be violating that, but the question can we change an Frebuild – do we need to change an Frebuild when it's below what the previously approved Frebuild is? Are we forced to do that or is that just an option that we recommend to council given the current control rule and how Frebuild should be set?

DR. BOREMAN: I think I understand what you're getting at. The Frebuild would be the equivalent of Fmsy in a fully rebuilt stock. It's analogous to that; so when you set an F according to an ABC level that's below the Frebuild because Frebuild is a 50 percent probability, then that's the same thing as putting a buffer in between the Frebuild and what F you're recommending to hit an ABC.

So if the Frebuild is based on a 50 percent probability of achieving the rebuilding target and you say but we want to back off from that and have a 70 percent probability, then it's appropriate to recommend an ABC below the catch that would occur at that rebuild. I think that's what you're trying to get at.

MR. CARMICHAEL: You've passed motions about the council's rebuilding plan. You'd be reconsidering if you want to go back and question the rebuilding plan that's in place for black sea bass. You don't have an evaluation of the information for black sea bass. The council chose the rebuilding strategy based on a fixed landings' level that is a more conservative approach than the projections that were done when they put the black sea bass plan for rebuilding initially into place several years ago

If you look at it from that perspective, it's probably a much higher probability of success than the 50 percent that the 800,000 pounds was based three years ago, but you don't have the analysis to show just exactly what the proportion was. When you talked about these ABCs for these species, the SSC didn't say anything about let's bring these up to our new ABC control rule and request a new projection; so we really had no reason to go and do those so we're not prepared to even do any of that at this point.

I think part of it is the fact that, yes, all these things are happening at once, and maybe you just want to rely on the motions you made so along ago about the stocks that were under rebuilding and just let those existing rebuilding plans stand until such time as the whole control rule is approved by the SSC and then maybe they come around again.

DR. BARBIERI: And to that point, I guess in this case it has something to do with the SEDAR schedule, the benchmark and the update schedule for some of these species because if they're going to have benchmarks or updates coming up within the next few years, then, yes, eventually we're going to catch up with the new procedures and kind of correct some of those things that have already been in place that we have approved predetermination of the ABC control rule and kind of catch up.

DR. WILLIAMS: To that point, I completely disagree. I don't think you get to just switch flip a switch and take what was being done before and then suddenly call it an ABC, because calling it

an ABC has connotations with it. It suggests that we applied our ABC control rule. It suggests that we're following the new Magnuson Guidelines, which in this case we are not.

We need to at least address it. Maybe we do end up coming to the conclusion that what we're doing is okay, but we need to at least address it as an SSC and say, yes, we endorse that the old does apply as a new ABC, but we have not been asked that question specifically. That is my concern is literally the switch has just been flipped and now we're being presented with this. We need to address this; is this what we think is an appropriate ABC for these species?

DR. BUCKEL: Yes, I agree with Erik. If we decide to move forward with the ABC includes rebuilding plan, then that ABC should have an asterisk or some footnote that would identify that it did not go through the ABC control rule.

DR. BELCHER: John pulled up our motions from last December, and one of our motions says that we move that the SSC recommend that the ABC levels for snowy grouper, black sea bass and red snapper be set consistent with the rebuilding plan for those species until they can be further amended on better scientific information.

DR. BOREMAN: I think if we just add the caveat to that what the implications, and the implications are that the P-star value is equal to 50 percent when we're doing that. To me that would align it with an ABC recommendation.

DR. CIERI: And then we get SEDARs and when we get the first chance, we'll just simply update everything. I mean, just everyone knows that when you go from a 50 percent probability to a 70 probability, even with everything staying the same in an update, you're going to talk about reductions. Most of these species are going to be going through reductions as we go from a 50 percent TAL to a 70 percent; and then, of course, we've been fishing on them at 50 percent for a couple of years.

MR. CARMICHAEL: And you're in position to do this based on the terms of reference that you passed for the black sea bass update, to do a probability analysis and to reconsider changes in the fixed landings' level for rebuilding. You can generate that based on the probabilities that come out of your ABC control rule and that can be used then to determine what the appropriate rebuilding plan is for the remainder of the rebuilding period. The fixed landings, it will incorporate that probability.

DR. CIERI: Right, once we're done with 17A and 17B, it's time to go on to some of these other species. Even for the ones in which you don't have a lot of current information for, you can go through and make their rebuilding plans. I mean if there is no stock assessment that's imminent, for example, you might want to go back through and make sure that it complies with the ABC control rule for Magnuson-Stevens.

MR. CARMICHAEL: Rick, can they update that rebuilding level for black sea bass through framework as well? Since you're getting the assessment, I think that's true.

MR. DeVICTOR: Yes, the framework allows you to change that, and you can certainly change the ACLs, too.

DR. BOREMAN: Just following up, I'm just trying to absorb what Matt just said. It may not be the case that we automatically – if a stock is rebuilding and it looks like it's still on the trajectory and no blips on the screen in terms of it's steering way off in one direction or the other, I think when we do finalize our control rule we should have some caveat in there to say if the stock is on a rebuilding trajectory, maybe we want to keep the P-star at 50 percent and not jump up to 70 percent.

Because, this thing all of a sudden when you insert a control rule and landings drop by 50 percent or 20 percent just because of – you know, we're checking a different box on our chart and we have to take into account that if the stock is already under a rebuilding plan and is rebuilding successfully, why change; but if it's not rebuilding successfully and there are indications that it's not moving along the trajectory the way it should be, then we would consider going to a higher probability of not overfishing.

DR. CIERI: How about we have that debate later?

DR. BOREMAN: Yes, I'm not saying we talk about that now, but I said think about that when we finalize our control rule.

DR. BARBIERI: Back to the first question, then, do we need additional information or analysis to be able to proceed?

DR. COOPER: Given we have analyses missing, what do you mean by proceed? I mean, yes, we can continue our discussion, but if you're saying if we answered the question, analyses are missing. Do we need additional analyses? Well, those analyses that are missing should be included at some point, so I don't know what you mean by do we need more analyses.

DR. BARBIERI: I just asked for you to answer that question and you just did.

DR. BELCHER: That's the question at hand, though, is are the analyses sufficient? That's the question that we're trying to answer. We trying to get folks to say yes they are or no they're not and then where they're not.

MS. JENSEN: What about in the case of red grouper and black grouper that hasn't completely gone through the SEDAR yet? It has gone through the assessment workshop but quite the review workshop. Are we allowed to use any of that information? Theoretically that information may be better than just landings' information, which is all we have to go on now.

MR. CARMICHAEL: New information for red and black grouper, if it changes things, can it just go in the Comprehensive Amendment? We have what is in there now; is that correct? We have red and black grouper coming soon, but this is going ahead, but the comprehensive is

addressing a lot of things. Remember that is the timing, the council is trying to get this in time to meet the deadline to end overfishing on all these species.

MR. DeVICTOR: Yes, and that's a question that I plan on raising with the Snapper Grouper Committee is what they want to do with red and black grouper. Do they want to proceed with those two species in this amendment or do they want to wait until they get the results of the stock assessment?

DR. BARBIERI: Yes, I think before we had actually made as part of our motion something to the effect of waiting until the results of stock assessment. I think that's explicitly presented in one of our – right.

DR. BELCHER: So what do we need to do, then, to bring the table up to par? That's basically the question. If this is insufficient, then what do we do to make it sufficient?

DR. CIERI: I don't know; can we take like a ten-minute break and get this table for OFL, ABC and then another line saying "proposed ACL"?

DR. BELCHER: Rick is nodding his head that would be possible.

DR. CIERI: That can at least give us some idea. For example, for black grouper, showing the values; for example, for black sea bass ABC equals the rebuilding plan; you know, more of a number. If we can get that updated, at least we'd have something that we can look at and then say, look, the ACL for this species is higher than the ABC. And for those species in which we don't have ABCs, we have to specify an ABC, correct?

MR. CARMICHAEL: ACLs can't be higher than ABCs. They can't approve anything higher than your ABCs. I guess this means that's where I'm confused, because we're talking a lot about ACLs on 17B, and the SSC's concern is really the ABC, and the council then can't have an ACL higher than the ABC

DR. CIERI: Right, but I don't even know whether or not what the managers are proposing as far as whether those meet our ABC recommendations. That's one of the questions.

MR. CARMICHAEL: But we don't need to worry about that until we get the ABCs straight. They may have things in there that do exceed your ABC if you haven't made an ABC, so shouldn't we really have the SSC focus on ABC first?

DR. COOPER: Well, what is the policy when the ACL can't exceed the ABC? If there is no ABC, that is a problem. The point I was raising is, for instance, Alternative 4 under golden tilefish, establish a recreational accountability measure that would implement a one golden tilefish per vessel per day when a single ACL and recreational allowable harvest at the OY level is projected to met.

What is the effect of that? They're asking is that based – I forget the actual term – what is the analysis behind that telling us that will actually reduce catch? Never mind I can't sit here and parse through the 85 different definitions of ACLs that they're throwing around and how they compare to whatever OYs is done.

But then they start talking about these accountability measures with no analysis on how the accountability measures relate to the landings under the ACL; you know, will one tilefish per vessel trip per day, what percentage will that reduce landings? Is that even an AM? They're asking do we need more analyses. Regardless of what the ABCs are, there are things in here which I have no clue if they will actually achieve the goal that they're stating to achieve.

MR. CARMICHAEL: And then there are others that say the accountability measure is you close the fishery when the share is met, so that's, clearly, will do what it is intended to do, but I think your question about ABC is germane; have you judged any of this without an ABC. We started off on Sunday saying the SSC has the responsibility to give an ABC, so I think it's impossible to judge any of these ACLs relative to an ABC as long as you haven't given an ABC. We have nothing to judge it against, so I don't know where we turn from here.

DR. CIERI: But, certainly, we judge – I mean if we look at the ACL and we notice it's a little bit over the OFL, for example, or at least that there is some sort of management action that doesn't have an analysis associated with it. There is no projection of whether or not that reduces landings or what that will mean in terms of landings.

MR. CARMICHAEL: So then you're saying ABC could equal OFL. If you're concerned that an ACL for 2012 exceeds an OFL based on data from five, six or seven years ago, then you're saying that the ABC for 2012 equals the OFL from five years ago? Because that's where the SSC got before, that they didn't know what has happened to the stock in that time, so they weren't comfortable making the ABC.

DR. COOPER: In prior meetings whenever we had questions like this, there is usually someone here that could answer in the absence of an SSC ABC what do we judge the ACL against? It might be nice if someone who knows the answer to that can give us some guidance as to are all these ACLs invalid until there's an ABC? If that's the case, then we can move on. Or, do we assume that in the absence of an ABC, the council does whatever it wants? I'm sure NMFS has a legal brief on what to do. It would be nice if we knew that as well.

MR. CARMICHAEL: Anyone have any insights or should we go ask the lawyer to come and talk to us?

DR. WILLIAMS: I have a little insight. I was told that if we do not specify an ABC, the council can do whatever they want.

MR. CARMICHAEL: That's what we have been told before; so in the absence not specifying an ABC, you can't then begin to infer that the ACL is inadequate.

DR. COOPER: I think we've also been told before that in the absence of an ABC it is assumed zero; or in the absence of an ABC, it's assumed to be whatever the closest thing we had in previous existence. I think we have gotten multiple answers here.

MR. CARMICHAEL: Make some statement about the lack of information and lack of clarity when you don't have an ABC and leave it at that. I don't know that the SSC can say much more.

DR. WILLIAMS: We're jumping a little bit ahead. The one question we're asked is do the measures end overfishing; and if we have an ABC in place, then we can't answer that question in a sense, so our answer to that is – I don't know if it's no; maybe we don't know. Then the council needs to weigh that in, I would assume, because us saying we don't know if it's going to end overfishing should carry some weight because they presumably want these measures to end overfishing, but we're going to be in the position of saying, well, we don't know. I don't know how that's going to work out.

DR. BELCHER: So do we still want the ten minutes for the table or not? Okay, Rick, if you could do that, we'll go ahead and take a ten-minute break.

DR. BELCHER: Okay, let's get started again. Thank you, Monica.

MS. SMIT-BRUNELLO: Could you ask me the question so I'm sure what you're talking about? I think what you're about is – well, go ahead.

DR. BELCHER: I'll put it more to the people who are actually making the cross-table discussions on it. Erik.

DR. WILLIAMS: The question is if the SSC does not specify any ABC, what is the council able to do with the ACL at that point? The presumption was that they can set it anywhere they want.

MS. SMIT-BRUNELLO: Well, you're right in the sense that the Magnuson Act requires the council to set an ACL for all managed species; so if you cannot come up with an ABC, then the council is going to have to set an ACL regardless of whether you can come up with an ABC or not. When I read the Magnuson Act, it says, "Each Scientific and Statistical Committee shall provide its council ongoing scientific advice for fishery management decisions", and it talks about ABC, preventing overfishing, all those sorts of things.

I would think that if you, for whatever reason, could not come up with an ABC, then you ought to explain why you couldn't and put that – and try to give the council as much advice as you could as to why you couldn't come up with it, what your rationale was and your thoughts and those sorts of things, because you'll have a record and they can look and the council can decide, well, all right, what are we going to do based on the uncertainty or whatever reasons that you can't come up with it.

So try to give them some idea as to why you couldn't come up with it and then they will have to work off of that to decide what they should do in terms of an ABC. I will tell the council, when

they ask me, that, yes, they're required under the Magnuson Act to set an ABC. So as much advice as you could give them even as to why you couldn't would be helpful for them.

DR. COOPER: A slightly different topic is this question came up yesterday, one of the proposed measures is an aggregate ACL across species for which we've set separate ABCs. When they start grouping species for ACL; do they have to be grouping as the NS 1 Guidelines talk about grouping species or since the ABCs are separate, it doesn't matter?

MS. SMIT-BRUNELLO: Why don't you paint me a little bit more of a picture and give me some specifics?

DR. COOPER: Actually going up to the top of that table that was just up there, one of the proposed ACLs is a combined ACL for black, red and gag grouper. We have separate ABCs for each; so by grouping species for the ACL; the NS 1 Guidelines, when they talk about grouping species, they talk about vulnerability and managing for the most vulnerable, et cetera. The ABCs are set separately. We have separate ABCs for each. They're proposing a group ACL. Do we have to worry about that grouping conforming to NS 1 Guidelines?

MS. SMIT-BRUNELLO: Well, what you're saying is you've already set separate – let me just parrot it back while I'm thinking. So you've set separate ABCs for black, for red and for gag? That will be interesting to see how the council deals with it, but I'm going to have to think about that one a little bit further. They shouldn't exceed the ABC for black or for red or for gag, and so if they set an aggregate ACL; let me think about that a little bit more. I'll probably need a little more thought on that, but I'm glad you brought it up because that gives me a little bit of a head start when we get over there and they're thinking about that. Yes, it a little bit of a mismatch. It's not a little bit; it is a mismatch.

Yes, I'm going to think about that further as to how we put that together. Let me give it some thought; and if I come up with an idea, I'll be right back in. If you guys have other questions, I just can't be in two places at once, so feel free to give me a message. Let me get back with you on that.

DR. BOREMAN: Before you go, Monica, this question about does the SSC have to provide an ABC recommendation to the council came up at our National SSC Meeting, and I couldn't get a yes or no answer out of the agencies there. I got a lot of dancing. The way I'm interpreting it is, yes, we do. I'm looking at the Act again and it says, as you said, the SSC shall advise the council on fishing level recommendations.

But further on the section says, "The council will develop annual catch limits for each of its managed species that may not exceed the fishing level recommendation of the Scientific and Statistical Committee." So if we don't give them a fishing level recommendation, then they don't know if they're exceeding or not.

To me taken together those two paragraphs imply that we have to give them a fishing level recommendation, because otherwise they can't set an ACL because they're exceeding or not

exceeding some non-existent entity. The way we're interpreting in the Mid-Atlantic is, yes, for every ACL it has to have an accompanying ABC along with it.

MS. SMIT-BRUNELLO: Well, I can't disagree with you. I think taking what the Magnuson Act says and trying to apply it to a real-world situation like you're looking at right now as you can know can be a very dynamic experience. I guess that's a nice way to put it. But if there are reasons that you just cannot come up with one and you want to use landings, you want to use something else to give the council some idea of what you're looking at – I mean the more information you can give the council, the better. I guess perhaps you could even be a little creative in how you're expressing what the overfishing level and that sort of thing; you know, maybe think of it a little bit differently.

DR. BOREMAN: Yes, I'm talking about that, too, like we say use average landings for this time period as an OFL, as an overfishing limit, and an ABC based on that; but the fishing level recommendation, the bottom line is they cannot set an ACL without having a fishing level recommendation from the SSC. That's how I'm interpreting it – some kind of recommendation. It may not be an ABC but –

MS. SMIT-BRUNELLO: And I would agree with that. I guess what it really comes to is how you express the overfishing – that recommendation. There are many species for which we would love to have more data; and if you feel like you don't have enough data to give you something in one fishery that you're able to give a lot more concretely because you have more data in another fishery, then fine, you just have to figure out how you're going to explain that to the council and what you would use. I don't envy you; I think it's a difficult process; and it's a difficult task for you to come up with. I would say do the best you can.

But, again, we're going to be looking to the record, as we should, whether there would be litigation or not litigation. The decisions can't be arbitrary and capricious – you've heard that before – but they have to be supported by good rationale in the record and how you reasoned your way into the advice you ultimately came up with for the council.

DR. BELCHER: Further questions for Monica? Okay, thanks again, Monica. Okay, Rick has the table that folks asked for. Luis.

DR. BARBIERI: Well, a few people during the break came by and made comments regarding the difficulty in evaluating this in an aggregate species type of format. Perhaps it might be easier for us to just go and have the discussion on a species-by-species basis within those groups.

MR. DeVICTOR: I think that's a good idea. Here is a summary table of the nine species in Amendment 17B; so starting with black grouper you can see what the OFL and ABCs are. I won't go through those, so there are no ACLs in place for black grouper right now. As we talked about what Amendment 17B is proposing at the moment with the current preferred alternative.

Again, there is a range of alternatives, but the current preferred is to seek the gag quota down here, and you can see what those are at. Again, when that gag commercial is met you close

down the shallow water grouper fishery. But, addition to that, they're looking at specifying a commercial aggregate ACL for black, red and gag of this poundage and a recreational aggregate ACL of this poundage right here.

Whichever one is met first would close the fishery for the commercial sector, the gag or the three-species ACL. That is the plan right now. Now the question is what did they use to fill in the numbers for red and black grouper and what they used for that, but in the amendment these values are equivalent to expected catch resulting from the implementation of management regulations for red grouper and black grouper in Amendment 16 and the gag ACL specified in Amendment 16.

They looked at what the expected landings would be for red and black grouper and that's how they came up with the aggregate. I'll stop there, and that's the same for red, too, in terms of what is the current preferred alternative. For red and black, again, is to use the three species. Again, this is to specify a red and black ACL as they must do. Now the question is going to come up the stock assessment is underway; do you move this out of 17B or not, and that's something the Snapper Grouper Committee will discuss. I'll see if there are any questions at this point for those two species.

DR. COOPER: Just to refresh my feeble memory, the expected landings under 16; when did that go into place and do we have any idea how those compare or were to expected to compare to landings recently?

DR. McGOVERN: Well, my memory is feeble, too, but Amendment 16 went into place in July of this year, and the expected landings were determined by just looking at the average landings over – I can't remember which years – and then applying the January through April seasonal closure to red grouper and black grouper and then also looking at the effect of the reduced bag limit.

DR. COOPER: As a suggestion to the Chair, do we want to go through each of the questions on the roadmap as we're going through these species and actually answer them one at a time before we move on to the next species to keep our ourselves focused to make sure we hit everything?

DR. BARBIERI: That was the idea because it will be easier to tease apart all the different components if we go through the questions on a species-by-species basis. I guess we already have an evaluation of number one. Let's make sure for question number one that we have appropriate notes and comments that we can add to our statement; specifying the things that we think are missing or the analysis that we actually need to have.

DR. CIERI: Do we have an OFL? We don't really know whether or not the proposed management measures are going to result in overfishing?

DR. BARBIERI: And to that point, Matt, both black and red grouper are being assessed now. The assessment is scheduled to be reviewed in January. I guess when we made that decision back then not to establish an ABC for these species we were thinking, well, we might as well –

actually we recommended putting them on the SEDAR schedule – we might as well wait and to get the most up-to-date and realistic estimates. I guess the critical question is when would we have the opportunity to revise whatever is going into Amendment 17B to make sure that we have the most up-to-date values here?

DR. CIERI: My guess is if this is the last stop we're going to take a look at this document and we don't have an overfishing limit and we don't know whether or not – therefore, we don't know whether or not the proposed ACL values listed in this document are going to result in overfishing. If you don't have an OFL definition and you're waiting on more information, then you don't know whether or not it's going to cause overfishing

DR. COOPER: Regarding the combined aggregate ACLs, the justification for that number is the projected landings under 16, so I'm assuming you didn't want to set that as the actual ACL for the individual species. I'm not sure why that's the case that in aggregate that's a good ACL but the separate numbers as ACLs aren't good.

Maybe it's fish ID, but the problem is what can happen is let's say they're well below their gag catch. That means they could still catch a lot more of the black and red before you hit the combined ACL, and so therefore you're catching more black and red than projected under Amendment 16, which was your justification for choosing the combined ACL, and so there seems to be some crisscrossing and logic if you use those predicted catches to get the combined number, but you don't care if they actually catch more than those predicted numbers.

I'm not sure how that will work once we've got ABCs in there, and I think we just need to kind of raise the flag that this combined ACL there are all kinds of ways you can not hit the combined ACL but catch a heck of a lot more black or red than you're really expecting or maybe really want to, and so the triggering mechanisms may not coincide with the ABCs and may not – again, the logic may be in there on how these numbers were chosen and why aggregate, but again as far as the analysis and the assumptions I'd want it spelled out pretty clearly as to why the combined – you know, why throw gag in there at all into the combined? If black and red identification is a problem, just combine those, but yet the logic is this triggering mechanism, if you're using projected landings, why they can be combined but not separate when it could lead to blowing one of those completely out of the water and not the other before you trigger something.

DR. BELCHER: Okay, do you want to go to the next species? We'll proceed by species by species.

DR. BARBIERI: Yes, that's what we thought might be easier just to stay consistent. We are now down to are options included that will end overfishing and will any options affect fishing level recommendations; and if so, are those effects identified and addressed?

DR. COOPER: Well, again, this is the one where essentially will this change the selectivity patterns such that future OFLs may change relative – and so if the ACLs promote targeting the different ways than the data currently suggests in the assessment, then the assessment's OFL and

OFLs created in the future may differ because these may change selectivity patterns? I don't know if it will or not.

Once we start doing deepwater closures, which I think are possibly part of this, we will get a selectivity pattern which will get a different estimate of Fmsy or its proxy, whatever comes out of the assessment, and so the goalpost may change at the next assessment relative to this assessment because of this ACL if it changes fisherman behavior.

DR. BARBIERI: Will any of the options impact future data collection and assessment efforts and are measures in place to address such impacts? Well, in this case not specifically, right? So moving on; are biological and technical consequences of the alternatives accurate and completely and clearly stated?

DR. WILLIAMS: Well, I think Andy just pointed out this whole aggregate thing is a mess, and the biological consequences of that are then not stated.

MR. CARMICHAEL: Make a consensus-style statement to that effect; do people agree with that?

DR. COOPER: We just note that most of our discussion is simply in reference to the preferred alternative. We haven't really talked about the other alternatives, which I think we're talking about the preferred one may be good enough; I don't know.

DR. BELCHER: Any thoughts on that? Erik.

DR. WILLIAMS: We should address all the alternatives, but probably the time constraints are limiting us to just focus on the preferred at this point.

MR. CARMICHAEL: I think that and then the global-type things Erik just mentioned; that's the real meat of this thing.

DR. BARBIERI: We're ready to move on, then, to black sea bass, which we have to some extent already discussed, so this shouldn't be too difficult to go through. Do management option analyses, including projections, follow acceptable practices, are they based on appropriate inputs and are assumptions clearly stated and reasonable?

Okay, no disagreement with that; then are technical values in the amendment accurate and consistent with SSC recommendations? Well, my feeling is yes consistent with that motion that we made, I guess, last December that was read verbatim by John. Erik.

DR. WILLIAMS: I think we should add some note along the lines of what Matt was discussing and just mention that this is still based on a 50 percent probability of rebuilding and that future assessments will probably be adjusted to something higher than that for a probability of success.

MR. DeVICTOR: Just a comment, stepping back a second about the preferred alternative, I just wanted to highlight that there are additional alternatives, non-preferred – going back to red and black – specifying unique ACLs for red and black grouper. I just wanted to bring that to your attention.

MR. CHESTER: So that begs the question about whether the SSC would like to make a statement about whether they prefer the individually specified ABCs rather than the aggregate.

DR. BELCHER: I would think from us it would be more of a recommendation that they consider it rather our giving a preferred, but that's just semantics of language. Does everybody agree with that, that should be part of the statement to suggest? Okay.

DR. BUCKEL: Two things; that should be pretty strong language – that statement should have strong language from us given Andy's point about the possibility of overfishing one of those three, you would exceed their ACL treating them as an aggregate. Then the second thing on this ABC in the table, instead of just a statement from us about the black sea bass ABC, this caveat on it, I think in the table in the 17B document there should be a footnote put on that ABC is not an ABC that went through the control rule.

DR. BARBIERI: Okay, moving on to the next question; are options included that will end overfishing? Yes.

DR. CIERI: What is the OFL? Is there an OFL?

DR. BARBIERI: For black sea bass, yes.

DR. CIERI: Okay, so there is an OFL, but what is that number?

DR. WILLIAMS: It's a pretty high number; it's right out of the assessment.

DR. CIIERI: I just wanted to make sure if there is an OFL, then the ABC should be whatever the Frebuild times the stock at that particular time. Then basically how that figures in; I'm guessing you basically set your Frebuild on your biomass at this particular time point, and then that is what you derived your ACL at. I mean, ideally, later on that should be the ABC and then the management uncertainty should come into play.

DR. BOREMAN: Here we go again. If you have an Frebuild times your current biomass, that would be analogous to your OFL under a rebuilding plan. Your ABC could be set below that or equal to that.

DR. WILLIAMS: I guess the thing to be clear or actually thinking more about what Matt and John are just saying is I think the OFL we're specifying here is actually an equilibrium MSY value, and then the ABC is the rebuilding schedule. I think what John just was suggesting is if your rebuilding schedule is at 50 percent, then that becomes your OFL and then you adjust from

that under the new plan. But the way it exists now actually, this is where I had this issue with if this were under the new guidance, actually OFL would equal ABC.

MR. CARMICHAEL: And the equilibrium yield from the last update was 2.7 million pounds. That would have been the equilibrium MFMT as we're talking about.

DR. COOPER: Another minor hand grenade; the FMP also talks about AM. Do we need to be talking about or answering these questions with regard to the AMs? Erik says no.

DR. WILLIAMS: AMs are not really our concern.

DR. BARBIERI: Okay, moving on to the next question, then; will any options affect fishing level recommendations; and if so, are those effects identified and addressed? Will in this case, given the rebuilding plan, I would have to say yes. Any comments or additional input? Okay, moving on to the next question; will any of the options impact future data collection and assessment efforts and are measures in place to address such impacts? Not in this case.

If there are no further comments or input, we'll move on to the next; are biological and technical consequences of the alternatives accurate and completely and clearly stated? Yes, we accepted the rebuilding plan. Shall we move on to gag?

DR. BELCHER: Shouldn't gag be easy because it basically encompasses the same issues of black?

DR. BARBIERI: Right, and we discussed the measures that were implemented as part of Amendment 16; so instead of going through the questions one by one, in the interest of time would anybody have any additional comments or input that are relevant to gag?

DR. WILLIAMS: With respect to the question of are options included that will end overfishing; for black I think the answer to that was we don't know, but for gag I think we can say that it would because we have an ABC analysis.

DR. BARBIERI: Okay, if we don't have any other comments on gag, we'll move on to golden tilefish starting with Question Number One; do management option analyses, including projections, follow acceptable practices; are they based on appropriate inputs; and are assumptions clearly stated and reasonable? I think this one we had already discussed and accepted this one as yes. Are technical values in the amendment accurate and consistent with SSC recommendations?

DR. COOPER: Are we talking golden tilefish? Wasn't this the one where we were trying to figure out how the ACL for the recreational – is that the ACL is often specified based on the trip limit or something like that, or is that an AM measure? That's an AM, okay.

MR. DeVICTOR: And if I can just explain about golden tilefish, as it was set in Amendment 13C the commercial quota is 331,000 pounds gutted weight, and that's at the Fmsy level, and

that was intended to end overfishing of golden tilefish. So, again, the council is looking at, through 17B, to lower that to the Foy for the commercial quota. And then there are currently no recreational AMs in place for golden tilefish. That has never been set, so they're looking at setting a recreational ACL of 1,578 fish.

DR. WILLIAMS: I think the answer to a lot of the questions have to be no because, one, we don't have an ABC, and the reason we don't have an ABC was – I'm trying to think back to our SSC meeting about this, but I think it's because the assessment was too old, we didn't think the information was appropriate, so that actually goes to this question one do management option analyses, including projections, follow acceptable practices, and are they based on appropriate inputs? I would say it's not appropriate inputs because we have a very dated assessment.

And the other questions, are options included that will end overfishing; no, because we don't even have an ABC so we don't know. I don't think it's no, but I think what we can say is we don't know.

DR. COOPER: And this I think is where I would differ with Erik. I guess there are no recreational AMs, but there are recreational measures that purport to achieve that ACL. Without any full analysis or at least spelled out clearly is why those recreational measures are expected to achieve the ACL.

I think that is a scientific concern when they're saying these measures will achieve the ACL. Who else is supposed to review than but the SSC? Again, just with regard with to our roadmap, I can't find the analyses so I suppose there might be a sentence here and there that talks about the effect of closures and the effect of this and why the one bag limit would keep catch below that ACL.

My big concern is we don't want to be setting measures that are triggering AMs – well, there are no AMs – that exceed the ACLs, because then we're doing this ratchet effect of increasingly restrictive restrictions that nobody likes. It makes management more difficult and it hurts the fishermen, and so let's make sure that we're getting it right the first time. And, again, for number one I don't see the analysis clearly spelling out that is what is happening here.

DR. BARBIERI: I was just trying to remember here. We did not set an ABC for golden tile, but we did put it through – we made that decision way back before we finalized our control rule. We did put it through the control rule and we came up with a value of P-critical. Our control rule does take into account outdated assessments in terms of the assessment, the quality of the assessment information dimension and characterization of uncertainty, so we increase the buffer, then, given the scientific uncertainty.

I'm wondering whether it wouldn't be then applicable in this case because it fits – I mean, if we read the text of our control rule it does mention increasing that buffer on assessments that are really kind of outdated – if we have higher scientific uncertainty.

DR. WILLIAMS: So are you suggesting we establish an ABC at this meeting for golden tilefish?

DR. BARBIERI: Well, I'm not sure if we have all the information here available but we do have a P-critical. I'm just saying in terms of writing our consensus statement and justifying why we don't have an ABC, I think that decision that the assessment was outdated conflicts somewhat, and we might want to rephrase that just to not be conflicting with our ABC control rule.

DR. COOPER: I'm looking at Page 208 on the PDF. The table up there says no recreational AMs, but under the preferred Alternative 2 it says that if the ACL is exceeded the Regional Administrator shall publish a notice to reduce the length of the following fishing year. That is an AM. Personally I think changing fishing season length is an incredibly ineffective AM. As I've seen before changing that, you'd increase effort and again the effectiveness might not work.

I don't quite know why the preferred alternative only gives the Regional Administrator one option. I would have thought the council would want more flexibility to address overages by changing the bag limit or whatever. Again, I don't know. And, third, I'm not clear on how this three-year running average will work; that if you blow the ACL in one year by a lot, you're going to be triggering AMs for three years.

So if you quintuple your landings in one year, well, you'll trigger an AM that year, the next year you're doing a three-year running average, unless you're way lower, so a single year's – yes, it makes more robust for little overages, but the penalties for massive overages are going to last a long time.

Again, whether or not the council chooses to do that, that's a management decision and not science, and I just hope that is brought into mind given that occasional overages are incredibly huge and that penalty will last for at least three years based on how they're describing their AMs to work.

So a one-year overage, you have to put it all back the next year and the year after because you're running average is still too high and the year after that your running average is still too high, because there is a risk of a single year's overage will trigger AMs for the next three years. I don't know if that was the intent; but it's kind of the other blade of that sword where, yes, little overages get washed out but big overages, you'll feel that pain for a long time. Just so this isn't a surprise, it might be good to point that out.

DR. BARBIERI: Continuing on, then, for golden tile, will any options affect fishing level recommendations; and if so, are those effects identified and addressed?

DR. CIERI: Okay, can you flip back to where you were just working? Okay, we've got something in pounds and then something in fish. How many pounds are those fish?

MR. DeVICTOR: The commercial is in pounds of 282,000, roughly; and then the recreational ACL is 1,578 fish. I believe the average weight was figured to be 6.21.

DR. CIERI: Is everyone comfortable with having parts of that be in one versus the other?

DR. WILLIAMS: There is a logical reason for that because the data is collected in that fashion.

DR. CIERI: In that fashion; I'm just trying to make it so that everyone is comfortable with it being in different units.

DR. BARBIERI: Okay, if no other comments, then we move on to will any of the options impact – That was clarified, right?

MR. DeVICTOR: I'm sorry I just wanted to point out – are you still talking about golden tilefish? Okay, I can point out where in the document you can see the pounds through MRFSS; and, again the recreational ACL is going to be 1,500 and you can see that recent landings of golden tilefish recreationally has been well above that.

The preferred alternative is to go from one per person per day to one per boat per day. But, again, the document doesn't quantitatively look at what the cut would be expected from that action. I just want to point out in the document you can see what the MRFSS landings are of golden tilefish.

DR. BARBIERI: Okay, moving on to the next question that has been clarified; will any of the options impact future data collection and assessment efforts and are measures in place to address such impacts? In this case, no, no impacts on data collection.

DR. WILLIAMS: Refresh my memory in the options for the deepwater prohibitions, is tilefish in it or not?

MR. DeVICTOR: No.

DR. BARBIERI: And, finally, are biological and technical consequences of the alternatives accurate and completely and clearly stated? Any comments or points of disagreement with that question being answered as yes.

DR. COOPER: Given those changes in bag limits and stuff, we don't have the analyses showing it, and so the consequences are assumed so whether the council is being clearly stated, I would say no. I actually didn't pay attention to the economic consequences of the changes in the limits and the bags and the trips, so I don't even know if those are talked about or not, let alone whether they're clearly stated.

DR. WILLIAMS: Rick just mentioned to us that recreational measure, there is no percent reduction estimated from that.

MR. DeVICTOR: Yes, and I just caught that going to one per vessel is a non-preferred alternative, and I apologize for that. Just looking through the actions, that's not in the preferred alternative going to one per vessel. I believe with snowy grouper it was, but golden tilefish it's

not. Again, Erik brought up about the golden tilefish would not be included in that, and the thought behind that is because tilefish are caught in mud bottom; so, not a lot of bycatch of speckled hind and warsaw grouper in the current data collection.

DR. COOPER: So, let me get this straight; the preferred alternative is simply relying on what went into – that if average catches are well above the current ACL, the AM is to reduce season length when we exceed it. We haven't done anything to change the recreational fishery and so we're going to most likely exceed the ACL and then change the season structure; is that what – or am I missing something completely?

MR. DeVICTOR: No, you're right. How you outlined it I think is correct in what you just outlined for golden tilefish.

DR. COOPER: Okay, so then it's definitely the case that the current ACL will not prevent overfishing because there is no restriction to change the average landings, and so it's guaranteed the ACL is going to be blown and –

DR. BARBIERI: I'm just trying to make sure that we state this very clearly so Alex can capture it since he is our rapporteur. This is exactly what we need I think in terms of having clear statements about what we feel are the main issues and problems that we have with this.

DR. COOPER: Okay, that the current ACL is 1,500ish fish; average landings have been well above that, supposedly; and the AMs, when you blow the ACL is to restrict the season; and basically we're on course with the preferred alternative to blow that ACL out of the water.

MR. DeVICTOR: And if you look to the screen here, let's look at MRFSS landings. Again, there is not a high degree of golden tilefish headboat, if at all –

MR. CARMICHAEL: There are none.

MR. DeVICTOR: None, okay, so there is no headboat landings of golden tilefish, so here is where you see in MRFSS landings of golden tilefish '05, '06 and 07. In '06 13C went into place that put in the golden tilefish one per person per day, so you can that certainly had an affect on the '07 landings where it went down to just over 2,000 fish. The preferred alternative, again, is to set a recreational ACL of just over 1,500 fish. There is no fish in the MRFSS in 2008.

MR. CARMICHAEL: Presumably in response to the regulations, people just aren't going after this recreationally for that one fish one person.

DR. COOPER: Okay, I apologize; I was misinformed. During the break I thought I saw a table that showed that they landed like 2,000 most recently and then 3,000-some-odd, but I must have been looking at the wrong table.

DR. WILLIAMS: I guess I won't throw a hand grenade but maybe a rocket launcher into the mix. I'm concerned about golden tilefish not being part of the deepwater complex, but then

we're trying to afford a whole bunch of conservative measures and prohibitions for the rest of the deepwater species, and we're relying – I mean, I haven't looked at the exact language – we're allowing a quota for tilefish. Is there a gear restriction and area restriction that goes with that or can somebody literally go out and claim they're golden tilefish fishing but go to the snowy grouper habitat?

MR. DeVICTOR: Yes, they can. At one point we had an alternative that would require them to fish between I think a hundred meter depth to 300 meter depth, but that was removed to the rejected alternative appendix, but at one time we were allowing a specific place where they mostly golden tilefish when you have the mud bottom, and that's not in the document anymore.

DR. WILLIAMS: So there is a concern there and the other concern with the recreational is they're not going to – I mean, recreational anglers I don't think know enough to target golden tilefish specifically on certain habitat. They're just going to do what they do in deep water, which is what they call deep-dropping, and just drop a hook down and see what they get, and they just as likely will probably get some of these other deepwater species.

My concern here is that this is not consistent with the other deepwater species; having golden tilefish separated and not having other restrictions in place to ensure that quota is being focused on golden tilefish and won't bleed into these other deepwater species.

DR. BARBIERI: And, Rick, just to expand a little bit on what Erik just brought up, what was the rationale actually for not including tilefish in with the deepwater species, because I'm not sure that I caught it?

MR. DeVICTOR: Yes, in the thought process, there was, again, golden tilefish occurring over mud bottom; whereas, speckled hind and warsaw and snowy grouper were over rocky habitat, so it would be fishing in a separate location. That's more probably prone to the commercial sector, but the recreational sector, that's right, that there is deep-dropping going on and it's probably harder.

DR. BARBIERI: Well, did we just finish golden tile? I think we just went through all the questions for golden tile. I guess most of these comments came up with biological and technical consequences of these alternatives; is that correct? Erik.

DR. WILLIAMS: Depending on how we write this up, certainly my comments could bleed into some of these other actions as well. The issue I raised has the potential to affect our answers to some of those other action items as well, but maybe after looking at that we can figure that out.

DR. BARBIERI: Right, it might be better, first, to use this set of questions as all the informational content that we want to have in our consensus statement, you're right, we just write it as a solid paragraph, if it has all the components there, we don't have to be answering all the questions each individually one by one.

The discussion here is going through the questions to make sure that nothing falls through the cracks in terms of all the informational content we want to have in our consensus. That puts us into the next species, which is red grouper, which, again, it just falls back on the black and gag, and we already have a number of comments and statements there that will capture our concerns and recommendations.

DR. BELCHER: Are there further comments that you want for red; anybody have anything additional for red that sticks out that can be added? Okay.

DR. BARBIERI: Okay, the next one, then, is snowy grouper. It might be best for us to skip that first question for all the following species. If there are any issues that anybody might have in terms of the appropriate inputs, I think they get captured by the questions that come after that. So, are technical values in the amendment accurate and consistent with SSC recommendations? Okay, snowy grouper, in a way, is similar to black sea bass because we just had defaulted last December to the rebuilding plan.

Again, in the interest of time if there are any specific concerns that anybody might have that might be different to the comments we have already captured for black sea bass.

DR. WILLIAMS: Maybe we should just add a phrase that this assessment is old, and therefore there is probably some more uncertainty as to whether we're still following the rebuilding plan or not.

MR. DeVICTOR: Just to highlight for snowy grouper, currently your recreational ACL is 523 fish. The council is looking at retaining that in 17B but also going from one per person per day to one per boat. That is the current preferred alternative. You can look at landings -- if you want, I can show it on the screen – of snowy grouper recreationally and for hire. That's on the screen if you want to look at that, but, again, 523 fish.

DR. COOPER: This was the table I was thinking of in the previous one. The ACL is about a third of the 2008 landings and like a seventh of the 2007 landings. I guess just pointing that the analysis on that one per boat versus one per person and the closures assume to get it down that far, so that's the only change between the 2007 and 2008, and so the analyses aren't fully spelled out into whether or not that will work.

And then just pointing out I believe it was Chip's comment from yesterday to get it on the record of the ACL of 500 and some odd fish – you know, if we're going to be monitoring that on MRFSS and projecting for closures and AMs, it may be one fish gets landed and then it gets closed based on projections; and so long as that's out there, that's where this seems to be headed. I don't remember what the AMs are for snowy. And, yes, changing the season structure, if all it takes is one reported landed fish to trigger through MRFSS, season structure seems to be notoriously bad for keeping us below an ACL of 500 fish.

MR. DeVICTOR: Just in response, the AMs are the same as golden tilefish, and again 13C went in place October '06, so, again, that's why you see that drop. That's when the one per person went into place.

DR. BABRIERI: About the issue of the snowy assessment being out there, just informational that I checked with John here, and they are due for an update in 2010.

DR. CIERI: When was the last time this stock was assessed?

DR. WILLIAMS: That was part of the SEDAR 4 which would have been 2002-3.

DR. CIERI: And it's scheduled for an update in 2010; an update of what?

MR. CARMICHAEL: Why are we doing an update; because it's getting kind of old. As to why we're not doing a benchmark?

DR. CIERI: Yes, I'm curious.

MR. CARMICHAEL: Because there are 68 species in the snapper grouper complex alone, and we've only assessed a handful of them, so we're trying to put our benchmark efforts into many of the things that we know nothing about. We need about probably 50 stock assessment scientists, I guess, to keep all of these up to date on a two to three year cycle. It's a beast.

DR. BABBIERI: Okay, are we ready to move on, then, to the next species or do we want to make some specific comment about the biological and technical consequences of the alternatives?

DR. COOPER: I just want to put out there that, again, dealing with this recreational and the ACLs, there is no directly accounting for management uncertainty. Right now it's basically – you know, if we can account for management uncertainty, if there was a target, you would want it well below 573 fish.

Again, they're not required to set a target or formally incorporate management uncertainty, but not doing so is setting it up for triggering AMs again and again in the stock, which is not fun for anybody. I much prefer to keep far away from the limits so you're not triggering these AMs and changing regulations all over the place. Again, the management option analyses, there is no talk about frequency of triggering AMs and that how that is going to play out down the road.

DR. WILLIAMS: Rick, another clarification; is snowy grouper considered in the deep water for the closure prohibitions?

MR. DeVICTOR: Yes.

DR. BARBIERI: Okay, if we have captured all the comments for snowy, I think we can move on, and I guess we are left with vermilion snapper, if we go back to the tables – oh, yes, speckled hind.

DR. WILLIAMS: I would say for efficiency let's talk about speckled hind and warsaw together since they're pretty much bundled together in a lot of ways.

DR. COOPER: Do we have as a general comment that the deepwater closure will affect data collection? Have we said that somewhere?

DR. WILLIAMS: I don't think we have and I thought it would come up with these two species in particular.

MR. COLLIER: I don't think the data collection can get any worse.

DR. BARBIERI: Okay, again, just for the sake of making sure that we are thorough, let's go through the questions and bullets through to the end. Are technical values in the amendment accurate and consistent with SSC recommendations? In this case yes because we had provided guidance at the last December meeting on the ABC values. Are options included that will end overfishing?

DR. WILLIAMS: I think the answer to that one is unknown.

DR. BARBIERI: Will any options affect fishing level recommendations; and if so, are those effects identified and addressed? I think here we might discuss those alternatives that we thought about combining.

MR. COLLIER: Just because I don't know how these got here, but how did speckled hind and warsaw not get in the data-poor species? We don't have a landing stream. We don't have a collection effort. I'm kind of confused on that.

DR. WILLIAMS: This gets back to the reason where they are now I think is because they were selected to be as part of the FSSI Index. The selection process for that alludes me. I don't know how the species were chosen for that, but speckled hind and warsaw are both on the FSSI list. For those who don't know, that's the sort of measure that NMFS uses to gauge whether we're being effective overall, and there is a select list of species for which we monitor yearly whether the stock is overfished or overfishing. They ended up on that list so now they have been brought up to this level of higher importance essentially.

DR. BARBIERI: Right and during that June '08 meeting they were part of the list that we had to address. At that point, because we did have really the ABC control rule really started, we were not splitting into data rich and data poor at that point.

MR. CHESTER: Let me go back to whether any of the options will end overfishing and Erik's answer of unknown. I would like to explore that a little bit more of what he had in mind and

then also against the backdrop of the conversation we had yesterday afternoon about the confusion of the different options and the deepwater closure and all that. Let me start just by asking Erik what he had in mind with his answer of unknown.

DR. WILLIAMS: That's a good point; I should clarify that. I think when we look at all of these deepwater species, there seems to be some concerns with there is potential for increases and decreases of discards essentially of speckled hind and warsaw, which is what this fishery has been relegated to is a discard fishery.

The concern is, as I mentioned earlier, tilefish, depending on how that's executed, could or could not incur higher or lower snowy grouper, speckled hind and warsaw discards. Also, then depending on which of the deepwater options are chosen as far as closing 240 feet out or not, that, of course, is then going to affect potential discards rates as well. It's very stochastic as this point, and it seems like an unpredictable as to what those discard levels are going to be, much less we don't have a gauge to know whether a certain discard level is going to incur overfishing or not for these species. We just don't know.

MR. DeVICTOR: To Erik's point, there is a table in the document, Table 4.6, and members of the team – I didn't work on this but qualitatively I guess guessed is the word or assessed what would happen to discards with the various alternatives, so you just may want to look at that and comment on that, but, again, it's just qualitative.

DR. BUCKEL: Erik, I think the one question you were talking about in particular was the recreational fishing for golden tilefish and what they might catch, and that's Table 4-9B on PDF Page 187.

MR. DeVICTOR: And here is the table I was talking about; it's Table 4-4, PDF Page 173 or hard copy 149.

DR. BARBIERI: Perhaps at the core of this issue is the comment that Chip made regarding the fact that these are both very data-poor species and we have a tremendous lack of information to be able to really evaluate where we are and where we need to go. We might, Alex, capture that comment in our consensus statement that reemphasizes the fact that these are really very data-poor species.

Rick, perhaps if you have your PowerPoint there, we can go to Slide 6, which would give us an idea of the different alternatives and the preferred one, and I will read the questions or bullets that have to do with the alternatives while you have this up there. Are options included that will end overfishing? I guess it's questionable at this point. Will any options affect fishing level recommendations; and if so, are those effects identified and addressed?

DR. COOPER: Could we go back to the table of various species; the table that you build a half hour ago. So, speckled hind, because our ABCs and ACLs are landings only and the fact the status quo is 3,000 discarded fish doesn't trigger anything; is that correct?

MR. DeVICTOR: Yes.

DR. COOPER: So under this FMP, discards can basically can do whatever they want, and there is no trigger to do anything, and we don't necessarily know if that amount of discards is constituting overfishing or not. Okay, so we're flying blind and we have no rudders to correct anything. Okay, just checking.

DR. CIERI: We had established in somebody's comment yesterday basically that when you set your ABC based around landings instead of an actual, I don't know, catch, you really don't know whether or not your discards are creating overfishing.

DR. WILLIAMS: And that's where we should probably just have some statement that the options that minimize discards of speckled hind and warsaw are going to be the ones that are most likely to succeed if there is going to be success, but we can't judge whether there is going to be success at all.

DR. BARBIERI: That brings us back into the discussion we had for Slide 6 on what combination of those alternatives there could get us closer to what we intend by this ABC recommendation, as imperfect as it was at the time. May we go back, Rick, to Slide 6? If I remember correctly, the discussion yesterday revolved around perhaps a combination – I mean, number one, I think the committee disagreed that the preferred alternative would accomplish the goal intended by setting the ABC equal to zero and then ACL equal to zero. Then there was some discussion about perhaps combining Alternatives 2 and 4 or perhaps just using Alternative 3, right, as a potential option, recognizing that in this case the focus is really to try and minimize that discard mortality.

DR. BUCKEL: Yes, I think Alternative 3 is going to be more precautionary than adding up 2 and 4 because you may have folks that just focus on deepwater species wouldn't be heading out there at all, so you'd lose that group. Alex and I were having this conversation yesterday that you still may have folks that are targeting other than deepwater species that are still discarding speckled hind and warsaw out there, but I think in total Alternative 3 would probably lead to less discarding of speckled hind and warsaw, but we can have a discussion on that.

I'm also worried about the 240 feet. I'm not sure off other areas of the South Atlantic, but off North Carolina if you're at the shelf break you just move tens of meters and you're going to be in deeper water than that; so trying to enforce fishing deepwater species and that stuff, I think that would be a pretty tough thing to do.

MR. CHESTER: Yes, I agree. I think the major thing is that the committee agrees that the preferred – I think we should make some comments as the preferred alternative had some problems with respect to the precautions, and that's the major thing, and then we'll point out the various advantages of the other options and combinations.

DR. BARBIERI: That sounds good to me, and would anybody have anything else to add or would disagree with the approach if we follow the approach proposed by Alex? Well, if not, I

think we are ready to move on to the next species. Okay, now we are down to vermilion snapper. The SSC has proposed an OFL based on a very recent benchmark assessment, so we have OFL and ABC recommendations. Rick, can we go back to looking at the PowerPoint for vermilion, reviewing, then, what are the proposed measures.

MR. DeVICTOR: The council is not proposing to change the vermilion snapper ACLs. They were put in place through Amendment 16. They are considering putting in place AMs.

DR. BARBIERI: I see. Well, this, again, is perhaps consistent with our consideration of Amendment 16's impact on managing gag, right, and we have a new set of AMs. I guess we decided we're not going to be discussing the specific AM other than make sure that they are not over-triggered as Andy had pointed out.

DR. COOPER: Just a quick question; I couldn't add the numbers in my head, but some of those seasonal ACLs, it looks like it's getting pretty darned close to the ABC. Do we know what that actual total is?

MR. DeVICTOR: In terms of the commercial ACL, the total is 315,523 plus 302,523 in terms of the commercial. The first number in this is your recreational. I can total that up real quick.

DR. COOPER: I'm just concerned about the distance between the ACL and the ABC given that the current ABC is based on the rebuilding – no, what is the current ABC based on?

DR. BARBIERI: The current ABC is based on our – no, it's not our control rule because that preceded our control rule.

MR. DeVICTOR: Yes, that was based on in Amendment 16 the percent reduction in fishing mortality required to end overfishing. Vermilion snapper was not overfished, so it was not based on a rebuilding plan.

DR. COOPER: But that has not gone through our control rule so there is no buffering. That's really the OFL, then, right, and not the ABC? I assume the overfishing level was Fmsy is usually what our limit is, and so those numbers are actually the OFLs and we haven't buffered for an ABC. Right now we're about – was it 100,000 pounds below the – the ACL is 100,000 pounds below the OFL and we haven't figured out the ABC. Do we have the data to actually send it through our control rule?

DR. WILLIAMS: We could but then, again, I thought the discussion – this is why I brought this up earlier is we've flipped a switch here and we're now calling things ABCs when they really are actually OFLs, and I thought the discussion was, no, we're just moving forward and at the next update assessment we will make that change.

DR. COOPER: Well, the difference there is we were talking rebuilding schedule where we had passed, supposedly, a motion that says those things already on rebuilding schedules, we'll treat

those as ABCs. Here this is not on a rebuilding schedule. This was just an F to prevent overfishing, which is the OFL.

I think there are two different topics, and I think this one is just simply miscategorized as an ABC when in fact if it is Fmsy times abundance, that is an OFL. Nowhere have we said it's actually treated as an ABC for those unassessed stocks or those with an old assessment or whatever. I think the translation of those numbers to an ABC is wrong; whereas, before we did pass a motion, whether we still agree with that or not, that those things on rebuilding plans, those were the ABCs.

DR. WILLIAMS: Was vermilion part of that motion in December, because it was converting a lot of Amendment 16 species and turning them into ABCs so it may have actually been part of that December motion.

DR. BELCHER: I'll have to see if I can find it. John had it pulled up a few minutes ago.

DR. BARBIERI: It might be useful to revisit that motion just so we know where we stand with vermilion. If we did not include vermilion in that motion, I think this one would be easy enough to update the ABC recommendation because we have a recent assessment that actually includes tables for P-star at different levels.

That's already included in the output of the assessment, and we, of course, have run vermilion through the control rule so we have the P-star critical and everything. But, if we made a motion last December to default to Amendment 16, given the implementation of that amendment, then I think that perhaps we want to stay consistent with that.

DR. BELCHER: The motion that we made in December for vermilion was the SSC withdrew the ABC and OFL levels for vermilion established at the June 2008 meeting. We withdrew the value. That's the motion, but I don't see a motion that –

DR. BARBIERI: This was a more generalized motion.

DR. BELCHER: That's the last motion that's on there. There is nothing else prior to that. We had made a motion earlier on that we were accepting the vermilion snapper assessment as best available science and supports comments made by the review panel with a large degree of uncertainty, but it doesn't say anything about recommending those numbers to be used.

I would assume that somewhere that was in the discussion, but I have to look through the report for that, but we do not have any specific motions that say – we just pulled the values back that we used in June 2008, but we didn't have a motion that recommended what went in. I guess the question would be when we did the March – well, no, because we wouldn't have applied the control rule in March so we wouldn't have put recommendations in the March meeting.

Anything that would have been done numerically or recommendations for vermilion would have had to have come at the June meeting under the determination of whether we applied our use of the control rule or not.

DR. BARBIERI: Yes, of course, we did put it through our control rule. We have a P-star critical. If I remember correctly in terms of the outputs of the assessment, we do have tables that provide different ABC ranges for P-star levels.

DR. BELCHER: So, Rick, the numbers that are currently in the table for vermilion; are they residual from back in June because that would be the assumption that those are the numbers –

MR. DeVICTOR: You're talking about vermilion snapper? Yes, they came when we were working on Amendment 16 and the need to end overfishing –

DR. BELCHER: So we just carried them forward.

MR. DeVICTOR: – of vermilion snapper.

DR. BELCHER: I'm just saying relative to our June meeting – our December last year meeting, we pulled those numbers back, so that's why I don't know if they should be blank or there were numbers that came up. I can't find anything in the report that said we suggested alternatives after receiving the assessment.

MS. DREVERAK: My name is Sera Dreverak. There was a table at one point that Jack McGovern had that compared the output from the runs you did on the ABC control in June to these ACL numbers. My recollection is that all of these ACLs are at or below your ABC recommendations for those species that you did run through the ABC control rule. I don't have that table, but I know that it exists.

DR. BELCHER: I think our question is more germane to the fact that if we pulled numbers back, at what point did we substitute numbers back in, because in December technically we erased them. I'm looking to see if I can find anything relative to the December meeting that we gave it a different number. Even in our discussions, what was captured in the report back in December, there is nothing that indicates that we gave alternative values for vermilion. Erik.

DR. WILLIAMS: I think we're all right because if I'm looking at these P-star tables correctly, the P-star of 0.3, which is close to the 0.275, the landings in 2011 are 1,079,000, and we're at 1,078,000. I think that's actually probably where that number came from.

DR. BELCHER: Yes, my only point is our record doesn't indicate that. All it says is that we pulled numbers back but never indicated where we put them back in, and that's what I'm saying is I don't know if we did that in June or not.

DR. WILLIAMS: Does it matter at this point if we're satisfied that the –

DR. BELCHER: Well, considering our motion to remove them basically says that those blocks should be empty. We pulled them in December.

DR. WILLIAMS: Well, unless we endorse this amendment, which the ABC value is in it.

DR. BARBIERI: Yes, and this may explain why it does look like there is a buffer there between what seems to be the OFL, but maybe an actual ABC – I mean, it does seem consistent.

DR. COOPER: In bringing up the same question that came up with king mackerel, though, if the council is wishing us to set a fixed ABC that is then constant over time, that's not what that P-star table does; so we're at the same situation where if the intent of council is to have an ABC that lasts over a certain number of years, we'd have to request the same analysis to be done for vermilion that we're asking for king mackerel because under that P-star analysis that ABC is going to bounce around from year to year as stock abundance changes, unless I'm mistaken.

MR. COLLIER: Looking at Erik's table here, that P-star value that's given in 2011 is the lowest in the five-year period, so that would be a conservative way. Instead of bouncing around every year, you just do it based on the lowest value.

DR. COOPER: That would be a conservative way. I just want to make sure – I'm more interested in making sure we get the right number in there because this will then stick for a while. If the control rule had been approved and the five-year horizon or three-year horizon – you know, we don't want to be setting an ABC that's too low. That's not our prerogative.

We could put the number in there as a placeholder and label it as 2011 if we want to a number in here, but I wouldn't feel comfortable in saying that our control rule says, yes, hold this for some period of time because that isn't what – you know, unless they're wanting it and letting it bounce around, as so I think we can just be clear and just label that 2011, subject to change depending on whether the council wants a three-year ABC to achieve a certain P-star or whatever.

DR. BARBIERI: Andy, I see this a little bit different than the situation with king mackerel basically because I don't think – I mean for vermilion we had a solid assessment, right, that we felt was really providing us with a good picture of stock status, which is kind of like a different situation from the king mackerel. With king mackerel we didn't have the P-star analysis done. We had those decision tables that I thought were confusing and didn't really give us an idea of building the buffer.

DR. COOPER: But the problem is at least as far as we can tell right now we have no record saying that number should be the ABC, right, because we withdrew the information. That number appears to be taken from our previous conversation; however, that means we have to, as a group, approve that as the ABC level.

All I'm saying is that to be consistent with our decisions on how we're setting ABCs with king mackerel, which where it does depend on whether or not you want it to bounce around or hold it

fixed, that whether or not you wanted, based on the three-year probability, five-year probability or whatever, that number will change.

Before we rubber stamp a number that got stuck in there, that if we are going through and saying this is our ABC, we're doing it in different ways for king mackerel than we are for vermilion snapper. With king mackerel we have said quite clearly ABC depends on your time horizon. The fact that we have the number available for vermilion and someone stuck it in there, we have not approved an ABC.

In the same discussion with king mackerel, we've gotten approved assessments, we have got tables that we could use on a year-by-year basis. I would say that if we're going to talk about what is the ABC, we need to have a discussion of if it's going to bounce around versus hold it fixed before we just slap an ABC in here.

DR. BARBIERI: And I thought we had made the decision at some point. I have to read through the text of our control rule, but I thought that the text, as it stands right now, is that we had decided to actually apply that probability of overfishing, that P-star value over the entire period; whatever period that we are actually applying towards management. At the time we had not envisioned – we didn't have any ability to do this on a time-varying type of action.

DR. COOPER: You just said that the P-star is based on a time period. We don't know what the time period is for this amendment, so what is the P-star we're going to use? I don't know how the P-star is calculated in the table that Erik read off. Until we find a motion that countermands the motion that Carolyn found that withdrew the number, we have no SSC-approved ABC level, and we need to decide on one that is.

We have a motion that erased it; we haven't found the motion that puts the number back in. Therefore, we have to approve an ABC. Previously we have said the P-star analysis, it depends on your planning horizon. Until we get guidance on the planning horizon with respect to 17B and what they want their ABC in there, I don't think we can just plug that number in and say that's the fixed number over the planning horizon because that doesn't necessarily agree with the P-star value that is being targeted. I could be totally wrong because I don't know how that P-star was calculated and maybe it's in there.

MR. CARMICHAEL: You should give it for how long you think it's valid for. In the absence of being told give it to me for three years, five years or one year, give a value and say this is valid based on this P-star for however many years.

DR. COOPER: Well, that was my suggestion is we could put in 2011. The difference is then do we need – it's in the amendment so how does that work?

DR. WILLIAMS: With the analysis that was done, we could go at least one more year further because the analysis was carried out through 2012, and then the landings in 2012 would be 1.1 million. We could at least specify 2011 and 2012, but then beyond that then we'd have to redo the analysis.

DR. REICHERT: And then in 2012 there is a vermilion update, so we'll have new data then, theoretically.

DR. BARBIERI: I guess John is looking for the statement?

MR. CARMICHAEL: For?

DR. BARBIERI: For this ABC recommendation from the SSC for vermilion snapper. Rick did find the ABC recommendation there which integrates the P-star. Just finding the actual motion or recommendation that we made, the documentation that seems to reflect that –

DR. COOPER: Well, no offense to staff I don't trust that number coming with that P-star is meant to apply for the next 20 years; and as it's written right now that is not clear. Again, I trust that number is associated with that P-star in some document somewhere whether or not it – there we go.

MR. CARMICHAEL: For vermilion snapper the ABC level for 2010 is 1,109,000 pounds inclusive of landings and discards. This value was interpolated from Tables 3.19 and 3.20 of Vermilion Snapper Assessment Workshop Report to obtain the P-star value of 0.275. This is Agenda 7, ABC Control Rule, as written in your committee report for June 2009. That's what you said.

DR. BELCHER: I didn't look under that part.

DR. COOPER: Okay, so then we just need to amend the document to specify that ABC is only held to that year because otherwise five years from now if it's published in the FMP that is the ABC we're going to have problems.

MR. CARMICHAEL: I think most of these FMP things are going to be written that is the value until it is changed. Remember to be able to chew what you're biting off in terms of recommending that this is good for a year and that everything that is just good for a year means you're going to have to deal with it again next year; which means if this is good for a year or for 2010 or you give one for 2011 and you want a different one in 2012, I'm going to ask you for a different one in April, just so everybody is aware. I know the reality is there is a probability associated with this and there is a time factor and all of that, but be cognizant of what you're biting off in terms of having to do this on a year-to-year basis.

DR. COOPER: Well, I guess for changing values that are in an FMP, though, my understanding is you need to amend the FMP unless it's specified in the FMP that these only hold until – because it's like changing, as we've been shown, our proxy is apparently you need to do an FMP, so I just want to make darned sure the language is in there that we don't have to go through an amendment process to change whatever the value is.

MR. CARMICHAEL: It is going to be set up as frameworks where you can make these changes on an annual basis as we get into this.

DR. BARBIERI: Right, and that is a critical question because I think way back when we had discussed this. How much flexibility does the system have to allow us to update this as these assessments are produced and we have additional analyses to update the value?

MR. CARMICHAEL: You're not going to get assessment updates every year, every third year, and in some cases you may have a P-star analysis which these guys have done at the last assessment which goes out three or four or five years, and that may be the only information that you get over that five-year period.

DR. WILLIAMS: On the other hand we do at this stage of the process, entering into this new realm of operating under the new Magnuson Guidelines, I think we would want to take a look at what we're doing every year initially, especially also given the fact that we've got some major regulations about to go into place for many species. I mean, we're going to want to take a look at this probably on an annual basis for the first few years.

DR. COOPER: How long does it take to get a framework through?

MR. DeVICTOR: Well, we're not sure at this point because it has been a while since we've done framework. There is an action in 17B, which I haven't gone through, but it's to modify the current framework to include new ACL and AM language hopefully so it doesn't take more than a year.

DR. COOPER: So the whole thing of this FMP, to change the number of the ABC requires a framework and it takes a year –

MR. DeVICTOR: Less than a year.

DR. COOPER: Well, less than a year – well, assuming we're only meeting twice a year, it will probably take us that long to get the framework up. If we are wanting to change these every other year or every year, that's going to be tough to do unless we – I would assume unless we specify in the FMP that a framework isn't necessary to change the ABC values. I mean, I have no clue.

MR. CARMICHAEL: The assessment gave values through – and I'm looking at the summary that pulled the table out – it gave values through 2012 for your yield and your Fs that is your probabilities of overfishing.

DR. CIERI: Those are from the projections, correct – and that is one the things is working with some of these older assessments in this case. Your projections are only good as long as you've been able to keep under your F; you know, those projections of landings at certain F levels. If you've exceeded that, then they're already done.

MR. CARMICHAEL: That's right, and this is a relatively recent one that the projections' period begins in 2008. I guess I'm saying you could use these tables and get an annual ABC between now and 2012 based on the information that you have, which is likely to be all the information that are going to have in terms of the projections. You will have more information in terms of does the fishery exceed these landings, in which case, then, you're talking about accountability measures and all of that, which you should be looking at every year as well would be our intent.

DR. BARBIERI: Okay, at this point I think the recommendation that Alex will capture for our consensus statement for 17B is that for vermilion snapper we will recommend ABC levels for 2011 and 2012, right, based on the assessment document.

DR. COOPER: It sounds like John already found a motion where we've already set the ABCs, right, so the SSC already has an approved for ABC for vermilion snapper.

MR. CARMICHAEL: You specified just the 2010 value and you didn't clarify throughout, and I think Luis is clarifying that go ahead and use that some approach for the other years that are provided in the table, but not going any further than that at point in time because you don't have the projections beyond that.

DR. BARBIERI: You know, so that get captured in the consensus statement and sent informally as a recommendation from the committee.

DR. COOPER: And as a stopgap, just in case, do we want to include the language that the 2012 ABC will be fixed until we readjust it as opposed to it disappearing magically, and then we're in the situation where we have no ABC.

MR. CARMICHAEL: Yes, I could say that because I imagine the council would specify that its ACL is fixed until such time something changes, so it wouldn't hurt to say that for the ABC; or, you could wait and see what has happened in terms of whether you might have – in 2012 you might want to change it in another direction.

That's where the choice is, just to leave it knowing that you will have to talk about it before 2012, and that may be enough and give you more of a chance to bring in what Erik said about needing to look at this stuff and see how the fishery performs and see how the accountability measures perform and make sure something unexpected doesn't happen.

DR. BARBIERI: Okay, if the last statement was captured, I think we are pretty much done for our discussion of 17B. Have we covered all the species that we had to, Rick?

MR. DeVICTOR: Yes.

DR. BELCHER: Does anybody have any overarching comments relative to 17B as a whole? Obviously, we'd be pretty much focused on the smaller components of it, but is there anything overall that anyone has to say?

DR. BARBIERI: I was just going to make a comment – Matt had to step out of the room, but he had some comment at the very beginning, some recommendations on what types of tables and materials he thought should be presented with these amendments, something to that effect, if I remember correctly.

DR. BELCHER: Overarching comments, you had some comments on 17B. We're getting ready to wrap it up, but additional comments. We were told you had some.

DR. BARBIERI: Right, and I did mention that you had made some comments at the very beginning about the structure of the tables and the format.

DR. BELCHER: I'm trying to keep it more germane just to – you know, we've done this specifically to the species. Is there anything overarching that anybody wants to throw through that process relative to 17B as a whole?

DR. CIERI: No, I'm good. It's just that the structure could be a little better; that's all.

DR. BUCKEL: I don't have anything overarching, but I have a minor comment on research needs, if I can provide that to Alex or we can talk about it now. Actually, Erik will be able to answer this. This is under vermilion snapper and the last research need is strongly suggests that a new model type be investigated; is that left over from when the length model was used and they wanted to see an age based; or is this after your age based and there was still a concern about the model used in the assessment?

DR. WILLIAMS: I don't recall.

DR. REICHERT: I think that was a leftover from the length-based model, yes.

DR. BUCKEL: This is on Page 245 or PDF Page 269 of 17B and it's the last research need under vermilion snapper, and that should be taken out.

DR. BELCHER: Any other suggestions or comments in that vein? Matt, relative to your formatting thing, I think it can be done informally, but just a few that you can point out, either put them in an e-mail and send them to Rick so Rick has an idea of what you're looking for, and then that way it's documented but we don't have to spend a lot of time on it.

DR. CIERI: Right, it's just some minor tables and summary stuff.

DR. BELCHER: All right, it's quarter after eleven. We're supposed to be starting on the Comprehensive ACL next. I'm going to recommend we do an early lunch and be back here for 12:30 and we'll pick up with the Comprehensive ACL.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened in the Sheraton Atlantic Beach Hotel, Atlantic Beach, North Carolina, Tuesday

afternoon, December 8, 2009, and called to order at 12:30 o'clock p.m. by Chairman Carolyn Belcher.

DR. BELCHER: Okay, we're going to go back on the record now that we've got the consensus draft formulated. We're starting with Amendment 17A, so if folks would look at the language that's there.

DR. BARBIERI: I think it would be helpful if one of the leads would actually read it to the group.

DR. WILLIAMS: All right, let explain the structure of the report is we have it in two major sections. One is where we took each roadmap item one by one with a response; and then at the end is the general response to the economic analysis. We'll go through each action. Here is the first action item and we can almost fit it in there. There is the action item and the statement below.

DR. CROSSON: The sentence about the 2006 recruitment being optimistic guesswork; is that a little overly harsh. There was a study done this past summer. I know it wasn't peer reviewed.

MR. CARMICHAEL: With regard to the second sentence about assumptions, do you really want to say – do you intend to say that in whole they do not appear to be realistic or that there are several ones that appear to be unrealistic? It seems a little more inclusive of all the assumptions other than just a couple of critical ones that are very easily and likely to be violated.

MR. COLLIER: I read that as when you put them all together they become unrealistic, but there is nothing about the discard mortality that is in the opposite direction of everything and maybe try to include something about when we're doing projections, that some of those values are viewed by something like a SEDAR process but it could just be a webinar.

DR. BOREMAN: Perhaps you should say but in whole do not appear to paint a realistic picture as opposed to the jacks and pollock we've got to deal with.

MR. CARMICHAEL: Along that line it might be good to say something, before you get into the area analysis, that says – which was part of the discussion is that the combination of the high steepness and using the high recruitment is that these assumptions kind of build upon each other. I think adding something like that would help bring in this story that it is – I think the word that was used early on about sort of the accumulation of optimism as these assumptions are applied that was really kind of the overriding concern about violating the assumptions.

DR. WILLIAMS: So maybe if we replace "whole" in that second sentence with "combination".

DR. BARBIERI: Well, on the end of that same sentence, we could stick with the "paint a realistic picture" or have something to the affect of do not appear to represent the full range of possible scenarios or the full range of possibilities. My understanding from our discussion yesterday was that we felt that analysis was leaning towards the optimistic outcome and did not

include the full range of possible outcomes. I really think we should think a little more about the optimistic guesswork.

DR. WILLIAMS: Well, that phrase is actually pulled right from the projection analyses.

DR. BARBIERI: The projection analyses actually says that it represents optimistic guesswork?

DR. WILLIAMS: It says it represents guesswork, scientific guesswork. It uses the word "guesswork".

DR. BARBIERI: And what I'm saying here is basically the message – I mean, this is going to be presented or given to the council. I think we have to communicate our concerns to the council and to the analytical team that prepared these analyses but avoid making statements that, in my opinion, just puts us in the situation of coming across as overcritical. I don't know how I would react if I had – and if I got some statement like this from the council or the Science Center, I just don't think it is appropriate. This is my own personal opinion.

DR. CIERI: In other words we don't want to use language that is going to bite us in the ass later? To that, let's be direct with them; let's leave them absolutely no doubt in their minds that these are overly optimistic and all those things. I think if we want to make – yes, overly optimistic and the key words "not scientifically based" is a good one. There is the potential that if they go with this analysis and choose options based on that analysis, that they're going to be wrong and they're going to get skewered, for lack of a better word. I think that they could be in some serious trouble.

DR. BELCHER: Any other comments or wordsmithing to this particular section? Scott.

DR. CROSSON: I don't know if this is nitpicking or not, but instead of "overly", I was going to say "unjustifiably optimistic" is what it seemed to me.

DR. BELCHER: Anyone else? John.

DR. BOREMAN: Let's just move on. I mean, we could be here all afternoon working on one sentence if we really wanted to. It's not perfect, but the bottom line is read it and does it get the message across that we want to get across. If there is anything in there that is confusing or excessive hyperbole, overly hyperbolic or whatever, take it out, but other that, if you can live with it, let's just move on. Otherwise, we've got some things to do today.

DR. WILLIAMS: The next one, I won't read it but everybody else can read it.

MR. CARMICHAEL: I think there was another statement, though, that should be added to that because the SSC agreed with this, but then they also said while we're here let's dispense with this, and you said something about it being addressed and it was fine.

DR. BOREMAN: We had talked about that in the group and the bottom line is we'd rather not put that in because that may set a precedent for even though we don't think we should address it we're going to give you an answer and not do the SEDAR process, so it leaves the door open for them doing it again. Erik can present the analysis to the SEDAR process and then they can judge whether it's appropriate or not, but it shouldn't be a role of the SSC. We have an opinion but let's leave it to ourselves.

MR. CARMICHAEL: Fair enough.

DR. BELCHER: So my question to is, is that adequately reflected? I know that we're working on statements right now. If this is going to stand as part of the report, it should be reflected in the report, so all I ask is that it's addressed somewhere. Again, we're going to have to put together the report, which is different than a consensus statement. Does that make sense?

DR. BOREMAN: Can't the report just reference the memo from Bonnie to the SSC, to you, that describes the analysis? Wasn't that part of one of the attachments? It was signed by Theo Brainerd. You just reference that.

DR. BELCHER: However you think it is best – like I said, the main thing is that with the report, the report captures everything besides just a consensus statement. I guess my point is as I collate together to be our over-standing report, those informational bullets of germane points that we spent time discussing, they kind of need to be captured as well. I understand why you've taken it out at this point, but for the overarching report we probably should have it in there.

DR. WILLIAMS: So where would you propose sticking that?

DR. BELCHER: I'm just thinking relative to – what I think about a consensus statement it's kind of similar to how we used to present a motions' list, so like consensus on certain things – like to me we should have a consensus statement relative to 17A that says whatever we feel relative to the full document, but we have specific items that we want to point out which be part of the report.

What we've put together for the mackerel ones, basically two or three sentences covering basically the overall of what you said, and then the report has more detail. I'll leave it up to everybody to figure out how we best draft these, but I just would hate to lose that detail of what we just discussed because you think it might muddy the waters a little bit at one point, but I think it's germane to the discussion points that we had.

DR. COOPER: What if we added a line, "The SSC received the presentation by Dr. Erik Williams and found no significant flaws and provided no additional comment?"

MR. CARMICHAEL: Placement-wise it might just be you'd have a section that you have these consensus statements, but either before or after there, there is sort of another section that captures what was discussed and why and what led to these consensus statements and some additional detail.

DR. WILLIAMS: Isn't that what the minutes are for?

MR. CARMICHAEL: Could be.

DR. COOPER: That should probably read "recently SSC-approved ABC control rule", the first line.

DR. BELCHER: Comments; anything missing to be added in? Matt.

DR. CIERI: Somewhere in there; you know, "inappropriate" means "consistent" and also it's more liberal. It's the exact reason why we have the Magnuson-Stevens Act in the first place, right? I'm just tossing that out there that we might wish to say that it's more liberal than what has come out of the stock assessment. I'm not good at wordsmithing.

MR. CARMICHAEL: What part are you referring to being more liberal, the steepness, the very high recruitment?

DR. CIERI: The alternative to choose an MSY proxy, the second sentence.

MR. CARMICHAEL: Well, it's only more liberal if they should happen to choose a different Fmsy proxy.

DR. CIERI: Right, okay.

DR. COOPER: Do we need to state that all the concerns about the assumptions based on the previous action items apply to all the output and technical value? Do we need to be that blunt or do you think that is logical to term that together?

MR. CARMICHAEL: I'd be careful of using language that refers to all the output and technical values. Let's focus in on those with issues, because otherwise you're painting a picture of the entire document as being subject to these overly optimistic assumptions and messing with assumptions when the focus is really on one particular analysis.

DR. COOPER: Our concerns about optimistic assumptions result in potentially inaccurate technical values in the applicable instances; how is that? For instance, in here we don't mention the technical values associated with the reductions with the area closures. Do we have to state that or is it obvious from our concerns about the assumptions or do we have to state how they affect the technical values as well?

MR. CARMICHAEL: Well, it's not so much the technical value associated with the area evaluations. That's an evaluation of impacts. It gets more to things like your Fmsy and your Foy and your ABC and your MFMT and all that. Your recruitment does fit into all of that. The technical value – the estimate of available yield at Frebuild is a technical value that is affected by

the estimate of recruitment of the steepness and that. The Fmsy proxy and what it is; that's a technical value.

DR. COOPER: Okay, sorry, technical value is a new term to me, and I'm not familiar with to which value that specifically applies.

DR. BELCHER: Further suggestions; does it capture everything? If everything is represented we'll go to the next one. Anything missing to the will end overfishing statement? Is that fine with everyone? Okay, then options affecting fishing level recommendations and are the effects identified? Does that cover everything? Okay, moving down to the next one; any missing pieces there? Okay, the next point; okay, comments relative to the last one on biological and technical consequences; everybody happy with that one?

DR. WILLIAMS: So the next section is comments on the economic analysis and that is broken into a commercial sector and recreationals sector.

DR. BELCHER: Anybody have any comments to add with that bullet? No, okay, next.

DR. REICHERT: It reads "one of which should be pursued"; did we mention which one we recommend?

MR. CARMICHAEL: Is that like an open – like resources are there for one or is it like one is preferred.

DR. WHITEHEAD: We've recommended number three informally in discussions with the authors of that document.

MR. CARMICHAEL: It would be better to just say there are three in the beginning and then conclude it with something that says we recommend pursuing number three, four, and whatever the reasons would be.

DR. BELCHER: So what do we provide to the council for guidance based on all the information that's there?

DR. WILLIAMS: What isn't the guidance in here? What do you mean by guidance; how to proceed?

DR. BELCHER: Well, to me it's just kind of – again, we've pointed out all of the issues with it, but what does that mean to them in general?

DR. WILLIAMS: Were we asked that? Are we being solicited for guidance? I mean, are we being asked for management options?

DR. BELCHER: I'm not saying for management guidance, but we've just basically shot a whole ton of holes in the document.

MR. CARMICHAEL: I think you're asking in the same sense that the review of the language began. When you shoot it down, it's helpful to have something that is a way to solve the problem. I think that would be helpful overall; is there some sort of general comments to be made about where to proceed, how some of these issues could be addressed.

Some them are; I mean, you do make a recommendation like with the recruitment issue, about doing the recruitment, bring up the assumptions in the area model and talk about looking at how the effort does change, which work has been going on with that. So, a number of them, there are things that are addressed. It might be good to look at them overall to make sure that there is something that says how it could be fixed.

DR. BARBIERI: Well, I guess it's kind of like what showed up in the economic portion of the statement. You know, you say, well, there is only this situation here is considered for this kind of evaluation, and how about considering these other levels as well. We need to see a full range because right now we've seen just one end of a wider spectrum.

DR. BOREMAN: Yes, but the end that we're seeing is the most optimistic end. And from what I gather is the recommendations that we're making is to make the analysis more realistic, is going to push them further away from obtaining their fishing target that they need to get to. Other than coming up with another option that's not on their list, which is beyond the scope of the SSC, I don't know what – maybe say use all these options collectively and maybe you'll get somewhere.

This term "overly optimistic" is overly used, but there is a reason for that because they are at one end of the spectrum, and what we're asking them to do is going to have them back further way from where they need to be. Maybe that's the general statement that we need to put in there.
DR. BELCHER: That's kind of what I was targeting is drawing it all together as to so what does this mean.

MR. COLLIER: So the alternatives presented in 17A do not meet what is required in the Magnuson-Stevens Act.

DR. BELCHER: Well, I don't know how John's memory works, but if he could recap what he started to say with the SSC – that general statement that he started to say, when you started to say that, that's exactly the type of statement I was looking for, thinking that would help with an overarching consensus, and I'm sorry that I didn't think to write it down.

DR. BOREMAN: Let me see if I can roll my tapes back. If we proceed and incorporate more realistic assumptions into the analysis than the optimistic ones that are currently used, it will back the council further away from being able to achieve their fishing target; something to that effect. Luis, you mentioned spectrum.

DR. WILLIAMS: Does adding this phrase at the end of our first paragraph help a little?

MR. CARMICHAEL: How far do we wish to go along this path? You've been pretty forthright in discussing issues deficiencies. How far do you want to go in saying larger closed areas may be required? It was tossed out perhaps the entire snapper grouper area needs to be closed. Does the committee want to put words to that effect that it could be that severe in this or not? How far do you want to put this or just leave it at larger?

DR. CIERI: It does make me uncomfortable, frankly. I mean we've sort of given them the idea that you need to reduce catch. This isn't directed catch; you need to reduce catch and not landings. However, they want to figure out how to do it, but the stuff in the document doesn't give you the warm and fuzzy feeling like they can do it.

So what you're sort of left with is – you know, they need to come to their conclusion. If they can magically figure out how to keep fish off of the hook, then they need to figure that out, bottom line is you need to reduce your mortality by whatever way they can; and how they reduce that mortality, where, when and so on and so forth is more for them to figure out, and in many ways is an allocation scheme.

DR. COOPER: I think simply to phrase more restrictive measures may be required.

DR. CIERI;: Yes.

DR. COOPER: Whether that's a closed area; or who knows, you can only fish with your left hand on Thursdays, you know, that's the management – but simply saying the combination of overly optimistic assumptions – when applying more realistic assumptions, it does not appear the options listed will achieve the management goals and therefore more restrictive options may be required in order to reduce fishing to the proper level.

MR. CARMICHAEL: I'm thinking what happens next and some effort into saying what assumptions are overly optimistic and what is a more realistic range might help to avoid being in a situation where you could come back and say, well, you know, we've put some effort shift in the area and a difference compliance and we used the high R instead of the very high R, so there you go; does that remove all your objections? We've been in that boat before.

I think there are a couple of things mentioned in there done, removed all the objections, and the SSC said, well, that was just some that we highlighted, but there were other issues. I think the more explicit we are given what a big issue this whole thing is about the things that are – I think it's okay here to say some, but at some point in this there should be more than some examples or there should be more than just some assumptions seem to be violated.

Otherwise, they could address a couple of these and say, okay, all of the SSC's concerns have been addressed. Maybe that is enough to address all the concerns, but maybe not; or maybe it still would have to come back for further a look by all of you.

DR. WILLIAMS: The subgroup that worked with Nick, presumably, what were the more realistic assumptions that were applied?

MR. CARMICHAEL: One discussion was like a 10 percent shifting in effort.

DR. COOPER: Well, except that effort shifts could not be directly incorporated so simply saying that there was no effect of the previous management measures – was that correct – of 13 and 15 and whatever it was, 85 percent compliance, which was a proxy for 10 percent shift in effort and 90 percent loss in effort and 90 percent compliance, we said, okay, 85 percent compliance, and bycatch mortality of 40 percent across the board; so putting out even more optimistic and fixing the bycatch still only got us down to like 80 percent or 70 some odd percent, I think. That's trading off some optimistic in terms of bycatch, realistic in terms of effort shift according to those who were on the subgroup who have thought about effort shift; i.e., John

DR. WILLIAMS: So what if we put a couple of these things like in parentheses after this last sentence, "An SSC subgroup worked with SERO staff and determined that when more realistic assumptions" and then we put some examples. Does that help?

DR. COOPER: And 40 percent discard mortality across the board, which was is that more realistic or just more optimistic, I don't know, but we were trying to see what happens.

DR. BARBIERI: A question here, Andy, and that would be because there will be some shift towards potentially shallower areas?

DR. COOPER: In part but also because since there is no retention and not being brought up on deck as much and left out and supposedly handling time was a major contributor toward bycatch mortality. In spite of removing that for the commercial sector, we get knocked down from 90, but the commercial sector is so small that it didn't have a lot of effect.

DR. FARMER: I think that it would also be important if you're going to go down this route of basing it kind of on this ad hoc last-minute stuff that I've been doing, to also mention the no effects of previous amendments in your statement there, because when those are incorporated it paints a more optimistic picture that gets you there, but we should discuss that within a subgroup rather than now.

DR. WILLIAMS: I'm wondering if we should leave the 10 percent effort and 90 percent compliance in this example because the 40 percent release mortality, I don't know if I would agree that's a more realistic assumption. It is an optimistic assumption, but I don't know if it's more realistic.

DR. COOPER: You can just put when different assumptions, parentheses, and that way we're not necessarily saying which ones are realistic, which are optimistic, which ones are pessimistic; I don't know – or, given this is a consensus statement and not our final report, it needs to be a broad overview statement. We could leave this to the report considering Carolyn has to present 17B in 20 minutes, too.

DR. BELCHER: My feeling is a lot of what we have is more of the report information than consensus. I'm not saying it isn't a good start for it, but I've passed something to Erik as a potential overarching consensus statement relative to the information that we received in 17A just to see how you feel.

I mean, I'm just thinking again how do I best boilerplate the four pages of information that's there? That is where I feel a lot of that is a report, and that's what I was trying to say before was that bullet that you had in and then took back out again is that is an important issue to stay in the report because that was in discussion to led to that conclusion.

The idea is that if you want to get away from minutes, you know, this verbal transcription of minutes, then we need to have a more conclusive report so we can't turn around and just caveat it with refer to the minutes because then that constantly keeps us crutched on having transcribed minutes. We have to show a good reason to divorce between the two.

If we can show our reports are very thorough, then maybe we can finally sell it to not have the audio version of the minutes. Feel free to wordsmith it as you see it; I mean, this is just kind of an on-the-fly thing that I wrote, and that is where I kind of gave it to everybody to tweak it to make better.

DR. BOREMAN: I would avoid using the word "precautionary approach to management," that term. We shouldn't be telling them what to do. Otherwise, they'll be starting to tell us how to interpret science. Just say that given some of these shortfalls – what we talked before in the language, something like more restrictive measures than those presented in the options are needed to meet the fishing targets.

DR. REICHERT: Then add here that it doesn't seem that although they're all very optimistic we wouldn't reach the reduction needed.

DR. COOPER: How about indicate possible outcomes are too optimistic and would not achieve management goals or management targets? In the first sentence, indicate possible outcomes that are too optimistic and will not achieve management goals. Then the other main issue I would throw in there is the assumptions underlying the effect of the various closure alternatives of the effort model, or whatever we're calling it – "and see the assumptions underlying the model used to predict the effects of closures". Again, I don't know how specific you want to get.

DR. BUCKEL: That last sentence, instead of "more restrictive measures to management may be needed"; I think we all feel strongly that they're overly optimistic, so "may" should be changed to "will", I think.

DR. BOREMAN: I think it needs to be further strengthened by starting off by saying, "None of the options will achieve management goals" and then talk about the SSC expresses concern that the analyses and alternatives are based on assumptions that indicate possible outcomes that are too optimistic and the main issues and on, but take those two thoughts in the first sentence and take the last one and put that right up front; just hit them with it right between the eyes to start

with – nothing you gave us is going to get you where you need to go – the first sentence of the paragraph.

DR. COOPER: But to be clear, it's none of the management options and alternatives in Amendment 17A because the rebuilding schedule doesn't have to deal with that stuff.

DR. BELCHER: Further comments or changes to the language? Okay, that makes me feel better because I was trying to figure out how I could distill the four pages into something to present to them. That overarching consensus really helps me out. If they want the details, I can go through the bulleted details. With that, is everybody comfortable with the 17A section of the report is how I'm going to couch that as well as that overarching consensus? Seeing everyone nodding, then we'll go on to 17B.

MR. CHESTER: Okay, I'm starting on 17B. We approached this a little bit differently and didn't go through the exact action items but chose to capture the discussion on a species-by-species basis. We dealt with it in two parts; one, the biological comments, and then we added the economic comments at the end. We started off with our overarching statement, which is a little simpler than what we had to deal with in 17A. Read that and see what you think of that then we can move on to species' analyses. Are you ready to go on to black grouper and red grouper?

DR. COOPER: Just for wordsmithing, we're talking about ACLs and not quotas. I know I caught it "specific concerns raised about the aggregate quota": it should be ACLs, the combined quota, two lines down.

MR. CHESTER: You want to call it aggregate ACL?

DR. BARBIERI: Under a combined ACL.

MR. CHESTER: Okay, anything else that people want to include?

DR. COOPER: Just for generality, "without triggering AMs" rather than "triggering a closure".

MR. CHESTER: Without triggering AMs, okay. Okay, any comments on black sea bass? There wasn't much to say about gag. That one kind of went by the committee pretty quick. All right, let's move to golden tilefish, then.

DR. COOPER: Again, I would suggest "may trigger AMs" rather than call it closures because in some of the species that you list in the examples, the AM isn't for closure. Just for PR purposes, that last sentences, "some fishers claiming to be deep-dropping when implying unethical behavior on the part of fishermen"; do we want to either refer to that "keeping golden tilefish open may result in enforcement issues" do we want say that "people deep-dropping for tilefish may" as opposed to the "claiming"?

MR. CHESTER: See if that does it.

DR. COOPER: Well, is it actually deep-dropping for tilefish is the problem or is it an enforcement issue of people being able to use tilefish as a loophole? Those are two different issues. Then I'd add in there "and may present enforcement issues for the other deepwater species".

DR. BARBIERI: Okay, Alex, moving on to the next one. Any comments here for snowy grouper? It seems to capture what we discussed pretty well. The next one.

MR. CARMICHAEL: Should you also mention that you can't determine what will end overfishing because you don't know what the overfishing level is? I guess where it says "because the number resulting in dead discards in determining", you say "because the overfishing level is unknown and the number of dead discards will be" -- "as is the number of dead discards that will occur".

Up there where it says, "determine whether any proposed measure will end overfishing," then put "overfishing, because the overfishing level is unknown." The current mortality is unknown and estimation of discards is poorly known – the current mortality is known, and the estimation of dead discards is poor – the level of discarding is poorly known, poorly estimated – "discards are poorly estimated"; maybe that's the word. I think that covers all three.

DR. COOPER: I'd almost suggest that the second half which is talking about the overall ACL with closures and deepwater closures, I think that should be elevated and not just left and carried as the second part in the speckled hind and warsaw grouper comment. I think that applies pretty much across the board. Yes, that statement "the SSC believes this current Preferred Option 4 is not the best option" or something like that, because it's a pretty overarching statement and I think it applies across species.

MR. CHESTER: I'm not sure exactly what you mean, Andy, it to the top of the speckled hind discussion?

DR. COOPER: I'd say make it a – because the comments about whether those different deepwater closures, the 240 closure, the 300 closure, those concerns cross all the species, I thought, and so should be highlighted as a separate topic rather than as part of the speckled hind and warsaw grouper discussion.

MR. CARMICHAEL: Do you think there is great concern for black sea bass or vermilion; or do you just mean all the deepwater species?

DR. COOPER: All the deepwater species, which is more than just speckled hind and warsaw grouper, I think.

MR. CARMICHAEL: Well, the focal species are speckled hind and warsaw grouper, the ones at issue. Snowy grouper is somewhat as a deepwater species.

DR. WILLIAMS: Except that set of options about the 240 closure; was that under speckled hind and warsaw in the amendment or is that a separate deepwater –

MR. CARMICHAEL: That's where I thought it was; I thought it was under speckled hind and warsaw grouper.

MR. CHESTER: I think the purpose was to reduce discards of speckled hind and warsaw.

DR. COOPER: Okay, because I was just remembering from the presentation, that was like Slide Number 2, and so therefore I was thinking if it's that important, it should be that important in our comments, but if it's in the amendment part of speckled hind and warsaw, then, sure.

MR. DeVICTOR: Yes, it was under speckled hind and warsaw grouper.

DR. REICHERT: Do we need to address somewhere in here the issue of the ABC of zero that refers to landings and not total catch, the remark made by Dave Allison?

DR. WILLIAMS: So, vermilion, the number that was in the amendment was really just for 2011 and then we had a separate number from the assessment for 2012, but that's not in the amendment, I don't think, the 2012 value.

DR. REICHERT: No, my remark was not specific to vermilion. It's just specific to the first section.

DR. WILLIAMS: Right, I'm reading vermilion. Did you not get your question answered?

DR. BARBIERI: No, his question is about snowy, right?

DR. REICHERT: Yes, snowy and speckled hind.

MR. COLLIER: But wasn't that addressed for discards because we do state that the discards are unknown and what kind of affect that will have even though the ACLs are just based on landings? Is that what you're talking about, Marcel?

DR. REICHERT: Yes, I was more referring to Dave's question in terms of setting an ABC as landings; does that conform with the Magnuson-Stevens Act, and I think Erik or someone spoke to that point.

DR. WILLIAMS: Yes, my understanding is you can set an ABC in terms of landings as long as the discards are accounted for in that ABC determination based on landings. In other words, in the analysis you have accounted for discards somehow so that somehow discards and the landings are linked, essence, so the ABC can be specified in landings but discards are sort of accounted for behind the scenes. I do agree in this situation the discards and the landings are not linked. Just because you set catch to zero, it doesn't mean you can't expect a certain amount of discards.

MR. CHESTER: Erik, on your question with vermilion, would it be improved if we said based on the current assessment the ABC is appropriate for 2011 and 2012?

DR. BARBIERI: Marcel, was your comment do you feel properly addressed by the –

DR. REICHERT: Yes, I think we have addressed it by addressing the discards in the speckled hind and warsaw grouper. I just wanted to get some clarification on that.

MR. CHESTER: Okay, are we ready to go on to the economic part? That's the end. Yes, we're finished. Okay, that being concluded, I turn the floor over to our vice-chair.

DR. BARBIERI: Okay, any additional comments anybody might have regarding the consensus statement. If not, I think we are done discussing 17B and producing the consensus statement. I think we're going to resume our regular agenda.

DR. BELCHER: Obviously, assuming the regular agenda is not going to occur at this time given the ACL is the next item. What I'm going to propose – and this is where John needs to be involved in the conversation as well – is we need to schedule some form of intermediate meetings to discuss this ACL Rule, because right now the critical nature of getting numbers for the council is going to pretty much be on us.

David Cupka asked me, as I gave the report for the consensus statements on the mackerel, is it clear to the Science Center what we're asking for, are we really going to get what we need to be able to do this so that we can meet in April. The way that I looked at it is we need to decide how we can do this meeting, whether it's webinar or person to person or how we best approach this, but we need to have the ability to sit down and come up with this methodology that we're going to apply to a landing stream, so by the time we get into April we're able to come up with these numbers that we need.

Also, back to king mackerel we need to formulize a request to the council for specific items so that we can give them a number for the king mackerel. Obviously, that's the first one. Because we have asked for projections and such, the first question I had asked was is Bonnie aware of what we are asking and was it doable, and it kind of defaulted with Erik is aware.

It was like, well, Erik was aware because we were talking about it; so if it's not doable, we're going to have a problem with it and a quandary with how we're going to get those numbers. The main thing is we have to get a drafted outline of the requested data at hand that we need to address the king mackerel and what we need in hand to be able to look at applying the ABC control rule when all we can look at is a landing stream. That's what we're being faced with in all these species that we're going to have to look at, including Spanish and cobia and the other suite of species that we need to look at in April. Erik.

DR. WILLIAMS: Do we even have an indication that we're going to have landing streams to even work with by April?

DR. BELCHER: Well, that's the point is we have to figure out what all we're going to ask for and then we have to find out how that's going to work. I don't know if we need to bring Bonnie in or how that works.

DR. WILLIAMS: I can tell you that a response that the Center put out to a request earlier about providing OFLs and estimates for uncertainty for all the remaining stocks, which was a rather large request, our response from the Center was no, but what we did put together is what would it take to start to undertake such a big task.

One of the things, in doing that exercise, that we came up with we realized that even just trying to compile the landings for some of these other species, especially when you get down to the list of minor species, it's going to take months. I don't think we could have even landing streams for all these species by April.

DR. BELCHER: Well, then, the question is going to be – and I don't know where you put this to or how we go about getting this – again, I know we talked about it needing a more formal process. We talked about some modified form of a SEDAR was our ideal for going through these things.

Is there some way – and I hate to even use the phrase of an interim can to put ecosystem components in? Is there any way that we can – you know, for those of us who have looked kind of crudely at the distribution of snapper grouper and the landings; for those that are less than, you know, a percent or whatever the cutoff is – I mean, what is it, 10 species that make up 80-some or 90-some percent of the catch; you just focus on those that don't have assessments, if there are any, and let those be the ones that run through the ABC and everything else goes into an ecosystem component for now. I mean, I don't know how best to approach it either, but they are expecting numbers from us for these other species. Luis.

DR. BARBIERI: Well, and one other thing to add to this is the species groupings and whether we're going to have to apply at least for this first cut some kind of indicator species type of approach or at least have that option on the table or is that not an option that we decided that – have we made that formal decision not to consider?

DR. WILLIAMS: I think in one form or another over at least two meetings back in '06-'07 we pretty much put the nail in the coffin on the whole idea of using indicator species.

DR. BARBIERI: And I can understand that for the really exploited species that have directed fisheries towards them, but the idea is looking at some of the lesser species for which we may not really have anything reliable to do anything meaningful.

DR. WILLIAMS: I don't understand why the exploitation level would have anything to do with whether indicator species would work or not, which is what you've just sort of suggested. Well, do you think some of the species that we exploit that we have data on, we determine that indicator species is certainly not appropriate for those; the remaining species that aren't exploited

very heavily for which we have poor amounts of data, somehow indicator species might be more appropriate for those?

DR. BARBIERI: Well, it will be more appropriate for those because for those we cannot conduct a full assessment. I mean, if we have really reliable estimates of the parameters we're trying to estimate and if we don't have any reliable records – I mean, I don't want to start this discussion right now, you know. I'm just saying there are things that are associated – I mean, this was all stuff that was considered within NS 1, you know, in the guidelines.

MR. CARMICHAEL: Landings we have. We have landings through 2007. We'd have to update it, I guess, if you wanted more recent data, if you thought that would make a difference in your estimation of an ABC, but we do have it for ALS, headboat and the MRFSS available right now for – I believe it does cover all managed species – at least those snapper grouper species.

We might have to look and see if we have all the mackerels and stuff, but MRFSS is easy enough is get. ALS shouldn't take too much to fill in any holes that are there, I would think. We have the headboat data sets at the office. We may have the ability to have all of this stuff together easily enough by April.

DR. WILLIAMS: You might want to talk to Steve Turner about the ALS. I think there are some issues there.

MR. CARMICHAEL: What we have now is from him.

DR. WILLIAMS: If it's just a simple query of what is in there or is it an actual analysis of what would be the appropriate landing stream for that species, because, yes, there are species coded in there, but then there is also a lot of just groupers, snappers and other subsets of species that need to be parsed out, and in fact many of the minor species are almost entirely lumped into those categories except on rare occasions.

MR. CARMICHAEL: They're in there with those groupings that exist, and in some cases if it has been assessed through SEDAR, then there are some rules to apply; but if it hasn't been assessed, then there aren't rules to apply. Somebody would have to go in and figure out those rules, but I don't think they're going to do that by April. So if there are minor species that are primarily landed as groupers, I think that's a pretty clear indication as to what you're going to be able to do with that species.

DR. BELCHER: My first germane point or question to the group is the meeting. Obviously, we have to have the meeting to discuss the mechanism by which we're going to even begin to assess the landing stream. What are folk's ability? A lot of this is going to fall, obviously, to what we can get in that timeframe, but do we shoot for something that's the midpoint between now and the April meeting?

MR. CARMICHAEL: It depends on how you want to do it, too.

DR. BELCHER: Right, but that's what I'm asking. I would shoot for something in the middle because then you kind of at least get the maximum – well, it's not really the maximum, but the idea is you get an ideal of, what, about eight weeks.

MR. COLLIER: Wouldn't it be for us – it would have to be as early as possible. That way they would know or does the Science Center know what values to get us at the ACL meeting? We're trying to maximize their time to get their research done.

DR. BELCHER: But the thing is what do we need in hand to have the meeting? In the past we recommended we recommended things. I don't know that we were really looking numerically when we were first drafting the ABC. Do we need to have data in hand that would require a request from the Science Center to have that meeting to start with or is it something that is strictly methodology? John.

DR. BOREMAN: If this meeting went another day, we would be covering ACLs at this meeting or at least starting the process, so what is the difference? I agree with Chip that we probably should have this call or whatever soon to give the maximum amount of time that we can to the Center or whomever to pull the numbers together or see if they pull numbers.

DR. BELCHER: Well, I guess my question is, is there a data need before this meeting that we would have to request something up front? That's what I'm asking.

MR. CARMICHAEL: You have to figure out what you're going to do with your ABC control rule before you know what your data need is going to be. We need to know like you have a control rule that gives you a buffer and it's zero to forty, and right now it applies to a probability of overfishing starting at 50, so you're going to have some landings' average, so where do you start with this?

Do you flip this around and rescale it. You've flipped it around on your probabilities for your rebuilding and it's setting it up with like a 30 percent chance of overfishing occurring, and you flipped around so you have a 70 percent of rebuilding occurring; is that the common thing that needs to go?

Maybe this won't take more than a half hour if somebody has an idea as to how they think you should go from this buffer and apply it to landings. Do you start with the average landings and depending on what the buffer is you take as much as 40 percent off of it? Are people comfortable just using it that straightforward or do you start with a proportion of the average landings and buffer further? Remember, we just have landings. We don't have a lot of data so it probably can't be too complicated.

DR. COOPER: It probably can't be too complicated but it would be nice – and I think we've already got some stuff through 2007 sitting somewhere. As we started when we were doing the other control rules, it's handy to be able to run a couple of things through it just to see what is going to happen. And to do it completely theoretically, then we run the risk of all a sudden we have the data going, oh, crap, that was a bad idea.

MR. CARMICHAEL: Why don't we do Spanish mackerel through it; you have the data in front of you.

DR. COOPER: Yes, I'm saying I think we've got the data on hand in some of these documents that we can run some things through it, but I think the discussion in the absence of data completely runs the risk of coming April and we actually throw data at it going this doesn't make sense.

MR. COLLIER: And I think cobia is a great example of something where we have no data. We have Spanish where we feel pretty good and then the extreme with cobia. Do we have landings?

MR. CARMICHAEL: If you just have an average landings, I don't understand how – I mean, the real question is how are you going to turn that buffer into – how are you going to apply that buffer to landings, straight up as it's calculated?

DR. COOPER: As we talked about, when we first started this discussion like a year and a half ago, it would be good apply it to situations where we actually know what is going on or have an idea; so when we say, okay, we just have a landing stream, let's cut it by 10 percent, well, if we knew what was going on, does that jive with what we think we should do?

Otherwise, we're just going to be debating 67 percent, 28 percent – sure, pick a number, but if we're actually going to do this and think we're doing something that mimics what we want, it's very helpful to apply it to a situation where we know what is going on, pretend we don't have that information, cut the stream and say, okay, are we anywhere close? That's all I'm saying is that – otherwise, yes, I bet in half an hour we can come up with a number out of the air and we'll have no clue if it's doing anything at all with what we want.

DR. BOREMAN: This is a strategy evaluation. The Mid-Atlantic is doing this now or we're trying to if we can find a post doc, but we got money from the council to hire a post doc to do exactly that, take a species, summer flounder, that has lots of data and apply the different rules that we've come up with to see how close we have when we know everything and use it – what happens if we use it for just a landing stream?

Should we set the average landings equal to a proxy for MSY or a proxy for – or ABC, for example, or some buffer in there when we have a good estimate of MSY to start with and discards and everything else. I think it's a good approach. I don't know if it can all be done before April, but it might be worth a shot.

DR. COOPER: I'm just thinking even ad hoc; you know, this is what we did – and we were trying to do this with the ABC control rule, I think, December of 2008 to June 2008 where we were saying, okay, if we did this, but this doesn't make sense. I mean, rather than just picking a number, throw in the Alec McCall approach and trying to get a proxy and seeing how well that works, and, yes, it's arbitrary – I'm sorry, subjective based on expert opinion. There are a lot of ways to do it, but, yes, I think we need to at least approximate some kind of strategy evaluation

to see even just on gut level how is this thing going to perform. That's my opinion; and if you guys want to just pick a number, sure.

MR. CARMICHAEL: Where do we go? What does the group want to do? What kind of meeting do you want to have and what sort of information –

DR. WILLIAMS: I vote a webinar because that's the most likely we are going to be able to do in very short order and do it as soon as maybe next week.

MR. CARMICHAEL: I'll have to check on the federal register noticing of this type of thing and do it as quickly as we can.

DR. WILLIAMS: Is there a chance that we could get somebody, since it is a webinar, invite somebody from maybe Jim Berkson's working group – I don't know if they've even started on anything – or even Alec McCall himself to talk about his depletion estimator, somebody that we could also drag in on this call that might be helpful?

MR. CARMICHAEL: Yes, we can bring in anybody; that's easy enough.

DR. BOREMAN: Just a question about legal notice; originally this ACL discussion was going to be held here at this meeting. It's on the agenda for this week. The fact that we're delaying it; does that mean that we have to give 24 days' notice or 23 days' notice to NMFS to publish it in the Federal Register or have we fulfilled the public notification requirement and we're just extending the meeting here another day?

MR. CARMICHAEL: My gut reaction is that we can schedule things as close as two weeks, which puts us into what? In general, when we have to do something in a hurry and schedule it up, we normally have a two-week minimum. It's better than the 20-some days, but still at this time of year it's a bit of a problem.

DR. CIERI: This is going to be a very important discussion that is going to impact a whole lot of species and a whole lot of people's livelihood. I wondering, you know, somewhere between a webinar and face-to-face meeting. This is serious stuff. We're going to take this stuff and then we're going to simply apply it to everything we've got in April. I guess the last thing we want is for the public to say, hey, you did most of this stuff over a webinar – do you see where I'm gong? I don't want to travel anymore than anybody else, but –

MR. CARMICHAEL: You wouldn't be doing most of it through a webinar, though. I don't think you'd really be doing most of it through a webinar. You've done most of the development of the rule through opening meetings, but you're having a webinar to sort of talk about what are ways that we might want to consider and how do we make sure we're prepared for that April meeting. That's the way I see our Federal Register Notice.

DR. CIERI: Okay, if that's the case rather than trying to actually sit down and develop the rule –

MR. CARMICHAEL: No, we'd be talking about sort of some approaches that you want to consider and what you need to be prepared to go through and actually apply it to develop your ABCs. You'd be applying it in developing your ABCs in April. You may have a couple of approaches that you want to consider and explore prepared for you in April, so that would be the purpose of that meeting.

DR. CIERI: So we're going to create it and then apply it all in the same meeting?

MR. CARMICHAEL: It's create it. It's a matter of just how you interpret it with regards to just a landing stream.

DR. REICHERT: Correct me if I'm wrong, but aren't we supposed to provide those ABCs in the April meeting, so that means that we are finalizing and developing this and applying them at the same meeting unless I'm confused.

MR. CARMICHAEL: That's why I wanted people to talk here at this meeting about what it is they would like to do so you can be prepared to do it in April, but there are more ideas that can be pursued at this meeting apparently, so we need some sort of ending of the rolling of the ball and the walking around of the bush and come up with something fairly tangible that we can act on and that we can make a request to the Science Center that will get the information that you think you need to judge this control rule.

DR. WILLIAMS: Well, I think we can go far enough to say that we need the time series of landings for all those species as far back as we can go in time, because I think whatever method we choose is going to involve choosing a subset of that time series probably over which we compute some average and then do some crazy adjustment to and then buffer it and then massage it some more and let it come out the back end.

DR. BELCHER: Well, obviously, one of them it is kind of inherent that it is some discount percentage applied. Are there other ideas? I mean, obviously, Andy has mentioned the McCall approach with the depletion corrected. Are there other mechanisms out there? Generally when we've been at the national meeting, there is some scaler discount, 40 percent, 75 percent that is applied.

And you look at like the northwest tier system, it's 75 percent of a landing stream and it's a time series amount, but it's determining why they picked the time series they did and how we're going to pick the time series we use. To me, I kind of have the feeling that the time series is going to be species' dependent.

It's not going to be something as simple as saying from the beginning of solid data collection as we know it, say '76 or whatever the ALS first came into play with, '86 to now, because every species is going to be different relative to when a fishery started, our interpretations of stable landing streams and what that means. But are there ways that we can look at it? Matt.

DR. CIERI: There was something I saw in the e-mail on that tiered approach that was actually a response from Beaufort. It was in an e-mail like two days ago, and that listed sort of that tiered approach with the landings as well. Am I completely off base or am I thinking of something else?

DR. WILLIAMS: That sounds like the response that the Center gave to that last request. Was that distributed or not?

DR. CIERI: Well, that had something in it where it's similar to the tiered approach that you guys have been using for OFLs, but if you had landings you discounted it by another percentage, and so the total ended up being 40 percent or something like that. Have you guys seen that in your e-mail?

DR. BELCHER: I think everybody should have it. It's something that we could easily pull up and look at it.

DR. CIERI: Have you guys done anything else? It looked like you guys had already gone through this exercise. It looked like it was done.

DR. BELCHER: Back in March when we first started drafting the ABC, we had a recommendation of what Erik coined the triage, when you do species' triage to figure out can we get MSY estimates for some of these species? If yes, we made them; for those that we can't, we end up with landings. It was a request that we put forward to do through a SEDAR type so that we got a lot of people in. It wasn't just restricted to us looking it.

We were coming up with the best approach through an open scientific process in the sense of, you know, you kind of get a data workshop and the assessment type thing. You didn't really need a review, per se, but we were looking at it relative to developing the method, and that's where I think that memo was in response to what would it take to get that done.

DR. CIERI: So what is the matter with that approach?

DR. BELCHER: I don't think everybody has looked at as of yet. I mean, we all got it the other day, but I don't know how many of us have actually – I haven't even pulled up my e-mails to really look at my e-mail for the past couple of days. Does everybody have internet access; can we go ahead and just pull it up now so we all can look at it, and at least we can discuss it a little bit more than just saying, you know, like in my situation I haven't read it. Marcel.

DR. REICHERT: What is the date that was sent and by whom?

DR. CIERI: The 7th.

DR. BELCHER: It came from Julie; yes, it was from Julie O'Dell and it's in big letters, response to council request. I have it; December 7th, 8:45 a.m. The good news is Doug

Vaughan, who was the one who prepared the response, is in the audience so we can actually ask him questions.

DR. WILLIAMS: You're not referring to the bottom of Page 3 in there; the bottom of Page 3 in that attachment?

DR. CIERI: No, that's not it. This actually listed specific – I'll look for it. Here it is; it is the ABC Control Rule, Final Proposed, 09/09.

MR. CARMICHAEL: Yes, that's the control rule.

DR. CIERI: Okay, it sort of lists out how to do this with landings. It is on that document, Page 12, and it gives you assessment information, quantitative assessments provided estimates, and then it goes all the way through relative exploitations of biomass, reliable catch history or scarce and unreliable catch records. You need an OFL in pounds, but some of this is – I mean, getting an OFL would be simply using a landing stream as a proxy.

DR. WILLIAMS: Right, but what part of the landing stream are you going to decrement the average –

DR. CIERI: Right, that's going to be species' specific; you know, whether it's at a stable point or whether it's some average, recent average, or am I completely missing the point?

MR. COLLER: That's what we have been talking about at the –

DR. WILLIAMS: That sounds easy but it's not.

DR. BELCHER: That's why we have no numbers yet.

DR. CIERI: But I guess that's not something that you can actually make a rule for. I mean, that's going to be on a stock-by-stock basis, right?

DR. WILLIAMS: Well, no, because you can determine what kind of percentage reduction are you going to take because – I mean, let's say you could come up with some average parts of some time series that thought the stock was at MSY. What do you do then; do you just say that's your OFL or do you make some adjustments to that before you call it your OFL?

What kind of level of uncertainty do you apply to it once you've declared that is your OFL? What our ABC control rule gives us is the P-star. It doesn't give us a percent reduction. It gives a P-star which tells us if you have a distribution, what part of that distribution should you go to? That's a little different from telling us what percent reduction would you do in, say, an average time series of landings or average landings from a time series. The way I see it is what we're after is given a time series of landings, how do you get OFL from it and how do you get some measure of uncertainty from it?

DR. BOREMAN: Yes, we're wrestling with the same thing in the Mid-Atlantic, but we're going be finalizing our control rule in February. What we're going to do, I think, with cases where we only have catch data and nothing else is say that the control rule is ABC will be some percentage of an average catch over a period of time and then leave it flexible so we can go species by species, but also acknowledge that with this ABC we cannot give you any estimate of a level of uncertainty, period. It is what it is. And until we get more data and we see how the fishery responds to this level of catch, the level of uncertainty is intricate.

DR. COOPER: And along those lines, another alternative is since we are using expert judgment to determine what percentage of the landings to apply to an OFL, we can use expert judgment to figure out what is the appropriate CV on those landings; you know, a CV of two; pretty wide; run it through the control rule.

DR. BUCKEL: With the Spanish mackerel, I think you had talked about running that one through first. That's one where we know that overfishing – I'm trying to remember that now – the one that we talked about overfishing is not occurring so then the recent landings, you could assume that you'd be safe, so the uncertainty there, we may be able to come up with something there versus where you're just looking at the trends in landings and you have no idea about if overfishing is occurring or not.

DR. BELCHER: We need to figure out are we committing to a webinar in early January. For folks that have information on methodologies that are already in use or have been used, like in your case the McCall paper, if we could get it forwarded out ahead of time for people to look at it probably would be helpful.

I don't know what else is out there; if there are ideas that other people have already kind of dabbled in or have a paper on; default to 75 percent and then it's a matter of talking about time series; I don't know. Again, is that an urban legend, does that exist, is that actually like the default; is that the fallback, 75 percent of some landing stream? John.

DR. BOREMAN: I think that's based on some work that Restrepo did or one of those Alpha geeks somewhere around the country, but I'll try to dig out where that came from. There is some basis for the 75 percent that I can recall. If I can find it, I'll share it with everyone.

DR. BELCHER: So that gives us two at least as a consideration in addition to what we can come up with. Andy.

DR. COOPER: And then there is the North Pacific who if all they have is a catch stream and OFL is the average from '78 to whatever, then the ABC is 75 percent of that.

DR. BELCHER: That's what I mean, it would be nice to – I never asked Terry Quinn that question. I asked about the 75 percent rate. I didn't ask about why that stream was defined from '78 forward. That would the one question as to how they determine the catch stream. I wonder if it's a function of the data collection program, but that wasn't a question I asked so I can't speculate to that.

MR. CARMICHAEL: We probably have fisheries that have been exploited longer than some of theirs have and maybe that's part of it, too.

DR. BELCHER: Okay, so relative to that, are there any requests for things that we're going to need for that meeting or not?

DR. REICHERT: Landing streams.

DR. BELCHER: What about CPUE indices?

MR. CARMICHAEL: I don't see much need to go into CPUE indices. We had given them to the committee a year and a half ago, and all you can really do in this time is a nominal CPUE, which is fraught with all kinds of errors and everything else, that it got soundly stomped. I'm kind of thinking that there is really no sense in going there again unless somebody feels like they might view CPUE indices differently.

It's pretty clear we just need landings so probably the sooner we ask for that the better. Is there anything else that's possible to get? One question is length frequencies; do you think looking at frequencies would help you in any way?

MR. COLLIER: I don't see them hurting if it's possible to get, because some of these species we don't know what is going on. The only thing we might be able to get is looking at what change in the average size occurs over time.

MR. CARMICHAEL: I wonder how difficult that is through the TIP Program to get length frequencies for a large number of species. I don't know if it's a pretty set program they can turn it on and walk away from it overnight or if it takes a lot more effort.

DR. WILLIAMS: I think it would take more effort. I think you actually would have a better shot possibly of getting CPUEs for species, not all of them but for a few.

DR. BELCHER: So basically we just need landing streams.

DR. REICHERT: We talked about looking at some of the other issues, so would it be useful to have a brief life history overview for the species we're talking about?

MR. COLLIER: Actually, with that fishery-independent workshop we put together a table of some of life history attributes; and while we were working today, I also put together some of the maximum ages and then age at maturity, and I was going to have you and Jennifer Potts review it before I sent to the group, and that could be used for the vulnerability and also maybe throwing some stuff in the ecosystem component because we don't even have age estimates or maturity estimates for them.

MS. JENSEN: Wasn't that MRAG Report; didn't that have everything done for vulnerability on all these species?

DR. BELCHER: It was a suite of them. I'm trying to remember how many were in there. I don't know that it was all of the snapper grouper. I don't remember. It's got other species in there as well; that's why I don't remember what the maximum number was.

DR. REICHERT: I can look at the species list. MARMAP may have some additional data on some of these species in terms of our catches and length frequencies.

DR. BELCHER: So landings, and you're going to compile stuff from MARMAP for January is what you're thinking?

DR. REICHERT: Yes, once I've looked at the species, I can probably provide what we have.

DR. BELCHER: Any other discussion or questions or concerns that people have about us having this meeting? I don't know how else we're going to meet the deadline if we don't do this, and that's the big thing. I don't think that they're going to cordon off the April meeting for us to develop this, apply it and nothing else. I don't see that happening.

DR. WILLIAMS: Well, we already know that the SEDAR assessments will be reviewed there.

DR. BELCHER: Why don't we take about a ten-minute break so I can talk with John and come back and see if there's anything we can hash out between now and five or have further discussion on some stuff.

DR. BELCHER: The big thing is we'll start out discussing those two approaches; and then if anybody along the way comes up with some other alternatives either through other papers or thoughts, that can be brought up and either we can discuss them at that point in time – if it's something that you come up with as idea, obviously, because there is nothing to throw forward, but if there are other references out there, that could be brought up at that time to be segued into the nest meeting if needed. Does that seem like a good way to approach it? That means we can get those two papers well in advance for us to have some time to read them and digest them and give general thoughts. John.

DR. BOREMAN: There is nothing stopping us from having a second webinar. We don't have to squeeze everything into one meeting.

DR. BELCHER: Right. I'm just thinking in terms of don't just stall on those two if there are other things that come up. According to the roadmap, we will be meeting April 20-22 in Charleston. What time will we be starting on the 20th?

MR. CARMICHAEL: What time would you like to start: nine, eight? I'm hesitant to make it after noon and lose half the day, so probably morning at nine.

DR. BELCHER: So we get three full days; that's the plan, right?

MR. CARMICHAEL: We also need to talk about future meetings further down the road. First a philosophical question; would you prefer to have a set time in which to meet like we do now, but they would be outside of the council meetings or would you like to have a little more flexibility. Would you like us to always look at meeting on the – I don't know – the third Monday of April; the third Tuesday of April or something – mid-April, along those lines. Do you like consistency or do you prefer more flexibility?

DR. REICHERT: I prefer later and that may be true for others of us who are teaching in the spring semester.

MR. CARMICHAEL: How late in April can you go; how late in April will help? Part of getting too late in April is the June council meeting, the first week of June, the briefing book stuff into them, so we may not be able to go too late, but we'll look at that.

DR. REICHERT: And the location also plays into that, I guess.

DR. BELCHER: My understanding was that we were going to start meeting in the same place, which was going to be Charleston, right?

MR. CARMICHAEL: Yes.

DR. BELCHER: So all of them are going to be held in Charleston.

DR. REICHERT: Okay, because I remember, John, you mentioned to have one in Charleston and then an alternate for the others.

MR. CARMICHAEL: They're probably all going to be in Charleston, it looks like. The next one would be in – we've talked about October – probably not the last week in September; that's an ASMFC Technical Committee Week for whoever that might involve – late October? Administration would like to know so they can plan the meeting, so are you prepared to pick a date in October – 19th, 20th, 21st?

DR. BELCHER: Sure.

MR. CARMICHAEL: Okay. Do you want to go to 2011, April? Well, right now you're scheduled to have one in January 2011 when you would deal with SEDAR things, probably like the last week in January.

DR. BELCHER: We have it as the first week of February on the roadmap.

MR. CARMICHAEL: It depends on how you look at it, I guess – January 31-Feb 4th, 2011?

DR. BELCHER: The first week of February, yes.

MR. CARMICHAEL: There has been some thought that when we do updates, if they're done sooner in the year, they could get to the council sooner. This scheduling is based on when benchmarks are done, thinking there would be a meeting late January when the SSC would always get their assessment updates. We may move this back a week actually.

We may need to look at that because of the council meeting, trying to give more time to get your reports done from the assessments. One thing that we looked at was doing it always the week after Martin Luther King Week, so this would be like January 24th.

DR. BELCHER: So you're changing that to the 24th?

MR. CARMICHAEL: I think so; we'll see where the council stands, but it will be somewhere in that window. That's a long ways out, still. That's going to have to be moved back because this only leaves three weeks before the March council meeting, and the intention is to get these assessments to the council at their March meeting, so I think that's the wrong date. We'll get that changed.

We were looking at 2011. I just want to see how this year works out. All right, that's the meetings, so why don't we see how April and October work. We don't need to lock it in; we have more flexibility going to Charleston than when we have to get a certain city. We have more hotel options so we'll see how this works out.

DR. BELCHER: For the ACL meeting, we're talking about a webinar on 1/7 at ten o'clock in the morning, 10:00 to 1:00. We're going to discuss the two papers, the McCall Paper and the Restrepo Paper and anybody that comes up with ideas along the way or has any other references, to bring them forward; and if we need to, we segue to a second webinar from there. Anybody have any other business that we need to get on the record? Okay, seeing no further comments, we're going to adjourn.

(Whereupon, the meeting was adjourned at 4:15 o'clock p.m., December 8, 2009.)

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PLEASE SIGN IN

So that we will have a record of your attendance at each meeting and so that your name may be included in the minutes, we ask that you sign this sheet for the meeting shown below.

SCIENTIFIC AND STATISTICAL (SSC) COMMITTEE
Atlantic Beach, NC
Sunday, December 6, 2009

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	P.O. BOX/STREET CITY, STATE & ZIP
Sara Dreverak (PEG)	910-685-5705	Wilmington, NC
Russell Hudson (DSF)	386-239-0948	POBox 9351 Daytona Bch, FL 32120-9351
James Morris (NOAA)	252-728-8782	Beaufort, NC 28516

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405
843-571-4366 or Toll Free 866/SAFMC-10

PLEASE SIGN IN

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SCIENTIFIC AND STATISTICAL (SSC) COMMITTEE
Atlantic Beach, NC
[redacted]y, December 6, 2009
MONDAY 7,

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	P.O. BOX/STREET CITY, STATE & ZIP
Sara Drevenak (PEG)	910-685-5705	Wilmington, NC
Dennis Heinemann (OC)	202 4361467	Washington, DC
Jennifer Potts	252-728-8715	Beaufort NC
Rob Cheshire	252-728-8730	Beaufort NC
Dave Allison (Oceana)	202-833-3900	1350 Connecticut Ave #500 Washington DC 20036
Doug Vaughan	252-728-8761	Beaufort, NC
John MERRINER	728 6638	[illegible] NC
Heather Blough	(727) 551-5795	St Petersburg, FL
Eileen Dougherty	919-601-8816	Charleston, SC
Kate Wilson	EDF	

PLEASE SIGN IN

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SCIENTIFIC AND STATISTICAL (SSC) COMMITTEE
Atlantic Beach, NC
Monday, December 7, 2009

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	P.O. BOX/STREET CITY, STATE & ZIP
George Sedberry NOAA Sanctuaries		
Ron Lukens	(386)454-7192	Omega Protein Corp. 27716 NW 182nd Ave High Springs, FL 32643
Dave Allison Oceana	202-833-3900	1350 Connecticut Ave NW #500 Wash. DC 20036
Holly Binns	850-322-7895	2107 Mulberry Blvd, Tallahassee, FL 32303
Libby Featherston	Ocean Conservancy - FL	
Eileen Dougherty	FDOF	Charleston, SC

South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
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SCIENTIFIC AND STATISTICAL (SSC) COMMITTEE
Atlantic Beach, NC
Tuesday, December 8, 2009

NAME & ORGANIZATION	AREA CODE & PHONE NUMBER	P.O. BOX/STREET CITY, STATE & ZIP
Sera Dreverak	910-685-5705	Wilmington, NC
Leda Dunmire	305-393-0934	Key Largo FL
Jennifer Potts	252-728-8715	Beaufort NC
Dennis Heinemann	202 436-1467	Ocean Conservancy, DC
Doug Vaughan	252-728-8761	NMFS Beaufort, NC
Ron Lukens (386)454-7192	Omega Protein Corp	27716 NW 182nd Ave High Springs, FL 32643
Heather Blough	727-551-5795	St. Petersburg, FL
Rusty Hudson	386-239-0948	POBox 9351 Daytona Bch, FL 32120-9351

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