SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

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Jekyll Island, GA

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DRAFT MINUTES

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Monday morning, March 2, 2009, and was called to order at 9:10 o'clock a.m. by Chairman Carolyn Belcher.

Dr. Belcher: Okay, we're going to go ahead and get started with the SSC meeting today. First off, I would like to start with voice identification around the table. I appreciate everybody was able to make it. I know Christine Jensen is on her way. She will be here for tomorrow.

Ms. Coakley: I am Jessica Coakley. I'm staff with the Mid-Atlantic Council, and I am the staffer assigned to develop the big omnibus ABC, ACL, AM document for our council.

Dr. Williams: Erik Williams, National Marine Fisheries Service, Beaufort, North Carolina.

Dr. Neer: Julie Neer, SEDAR.

Ms. Lange: Ann Lange, retired NMFS, Mount Pleasant, South Carolina.

Dr. Belcher: Carolyn Belcher, Georgia Department of Natural Resources.

Mr. Carmichael: John Carmichael, South Atlantic Council.

Dr. Barbieri: Luiz Barbieri, Florida Fish and Wildlife Conservation Commission.

Mr. Chester: Alex Chester, fishery biologist, Miami, Florida.

Mr. Reichert: Marcel Reichert, South Carolina Department of Natural Resources in Charleston.

Dr. Crosson: Scott Crosson, North Carolina Division of Marine Fisheries.

Dr. Belcher: Okay, again, thanks, everyone, for coming. As we move down the agenda, we have to adopt the agenda at this point. We do have one change to the agenda which is Item Number 3, Review of the SAFMC 2009 Research and Monitoring Plan. This has actually been deleted as we're not supposed to do this until the June meeting. With that, the main focus obviously for the meeting, after a couple of just informational items early on, is to look at establishing the ABC Control Rule.

Does anyone have any objection or any opposition to the agenda as currently stated? Seeing no opposition, the agenda passes. The next item is approval of the December 2008 meeting minutes. Again, does anybody have any corrections or issues with the minutes as currently written? Seeing none, the minutes will pass as well.

Item Number 3 is recommended reviewer for SEDAR 19, red and black grouper. Obviously staff is still looking for someone to participate on this. Again, it doesn't necessarily need to be anybody from our group. If you know someone that probably would be able to contribute to this assessment as well, any names to put forward is more than appreciated for John.

Ms. Lange: I have a question. I wasn't able to attend the December meeting. Was the list of participants still the same? This is just an additional reviewer or was there a change in the process?

Mr. Carmichael: This would be a person to be an actual review panelist reviewer at the review panel as opposed to someone from the SSC who has participated at the other levels. The Council can appoint a reviewer. It could be an SSC member; it could be someone that the Council and the SSC believes could serve in that role. They will function just as any of the other reviewers.

If no one is identified, then that is okay; we've gone forward in the past without the Council filling that seat, but it would be nice to have someone there. It gives the Council a chance to appoint someone outside of that group of CIE-appointed representatives, so maybe someone who knows a little more about our fisheries in general but who didn't specifically participate in the stock assessments.

If you have some suggestions of people that you think would serve well in this capacity, let us know. I think that's what we did back with red snapper and greater amberjack. You came up with a list of four or five people, and we were able to twist Joe Hightower's arm at NC State, because it was help up in Raleigh, and get him to do it.

If you have an idea of some professors, some scientists that you know of, someone here on this committee who would like to do that but is not going to participate in the data or assessment workshop, speak up. I know we're kind of partially staffed here, so if you think about someone who is not here that might potentially be willing, though – considering that we were at just about 100 percent attendance in December and no SSB member volunteered then, I am not sure we can get someone who is not here.

But, think about it and if you want some time to think about it or contact some people and see if they're interested, we can hold off on actual action until we get closer to the end of the meeting, but it would be very nice for us to have a list of a couple of names by the end of this week.

Dr. Barbieri: Well, I hate to volunteer other people but I thought about Doug Gregory. I am not sure if Doug is already participating in the data –

Dr. Neer: Yes, Doug is appointed through the Gulf Council.

Dr. Barbieri: Okay, so that disqualifies him. I just know that he has had a long-time interest in black grouper.

Dr. Belcher: Julie, Ann was asking if she was still – Okay, all right, we were working on that as well. So with that, let's be thinking about that for names. I will ask again at some point, probably either at the start or end of meetings throughout the course of the next couple of days just so that we can keep it fresh on our mind and keep badgering you to come up with a couple of names.

John was talking about non-disclosure forms and not necessarily bringing it up to you as we don't we have them available, but for those you that have not gotten them in, you need to. They have to be done every year, John?

Mr. Carmichael: I don't know; I am not sure about that. I thought it was one time until your situation changes.

Dr. Belcher: Those of you that aren't sure about the status of non-disclosures get with us and we will find for you. I think we filled them out at the December meeting –

Dr. Barbieri: Orientation.

Dr. Belcher: Actually orientation, you're right. We might have to fill them out again; we will get clarification and make sure. So, again, be aware of the status of your non-disclosure and we will try to find out more information and let you know if you need to fill one out. Informational items, the National SSC Meeting Report is out. For those of you interested in seeing what Luiz and I did for three days in Hawaii, it is there. It is good information and background.

Again, Luiz and I got a lot of good information from the other councils as far as the other committees and how business is run and where we are relative to the whole ABC game. The good news is we're pretty much in the center of everything. We're not really bad off but we're not really great off either. I don't know that anybody is really 100 percent ready to get into this. That kind of at least makes us feel a little bit better about where we are. The next item, the SAFMC letter addressing NS2 was provided in your informational materials.

Dr. Barbieri: I forgot to ask about the previous item. At the December meeting we discussed a number of potential changes and things. I don't think we ever came to any kind of decision, but we discussed things. If possible, can we get an update of how the Council reacted to our discussion or suggestions on, for example, membership?

We discussed the possibility of expanding membership to spread the load. We discussed the possibility not having verbatim notes. We discussed holding meetings separately from the Council so we would have more time to prepare our reports to the Council. I don't know if there is any update.

Mr. Carmichael: There is a slight update. The Council did discuss the issue about minutes and doing the transcription and decided in December that they are going to continue with the transcribed verbatim minutes for the SSC. I think at this meeting Tuesday afternoon, I believe it is, the SSC Selection Committee is meeting, and that is the committee that deals with membership and general SSC process.

I think it would be very good before then for this committee to spend some time talking about your feelings on the number of members on the SSC, when you would like to meet and to be prepared to have a written statement, perhaps, or at least some comments back to the SSC Selection Committee as to what you think is the appropriate thing.

What I intend to bring up with them is the issue of membership on the committee, how many members there should be, whether or not you need new members. One thing that I want to consider with them is the creation of a Socio-Economic Technical Committee, to try and have committee – I want to talk with Scott some about that when we go on one of the breaks – to have more of a separate committee for that so they can focus on the social and economic issues and not have it come up as a very small fraction of what the rest of the SSC otherwise ends up talking about.

Some of the sociologists and economists who are on this committee have kind of said they feel like they're kind of out of the loop on a lot of these discussions and think maybe we can do something better there. We will also talk about when you meet, do you meet with the Council or meet at other times. I think we can also continue to discuss this issue of what is the best way to go about documenting your meeting.

Do we move into a process where we take the recordings and you have a digital copy available to you at the end of the day to help you write your report, but your report stands and we don't actually transcribe the minutes or do we continue with the transcribed minutes as you do? I think that there are some options open to the Council to explore how they deal with that. You guys giving some direct feedback to that committee will very much help.

Dr. Belcher: Okay, so again the Council's standing on NS2 is one of the documents that was provided to us. The last informational item is that the Snapper Grouper Amendment 15A has been approved. With that, we get to start into the meat of the meeting, and Erik looks extremely excited about getting ready to start. Erik is going to talk with us about the NS1 Guidelines. After that we will have a round table discussion and suggestions for topics or basically how are we going to proceed with establishing our control rule.

Mr. Carmichael: I will just say we were successful in keeping your meeting limited to process and procedure, as you desired, which it wasn't easy. There are plenty of things we would have liked you to spend some time talking about, and we're always looking for recommendations from you. The NS1 Guidelines conveniently came out, the Register Notice addressing, so that was good timing for us to get that to you.

We had some comments that went around amongst some SSC members and shared them with you. You may or may not agree with some of the various comments that were made and recorded in the roadmap for you, but I think it would be good to have some discussion. We're hoping that by having this from Erik it will stimulate a little discussion amongst you guys the first thing this morning because this is sort of the ground rules of what you have to do in terms of making all these recommendations.

Dr. Williams: Well, I had grand plans to actually put together a lengthy presentation until I got whacked with the flu last week. I did get at least as far as to sort of outline the major topics that I think we need to discuss. The final NS1 Guidelines were published just recently. I have read through them probably three or four times now and still am not fully understanding everything in them, as other people probably will feel the same way after reading.

The way things are written in the Federal Register is just not intuitive at all. Essentially the main purpose of this is to provide guidance on how to comply with ACLs and AMs and to discuss the relationship between OFL, ABC, MSY and OY. At least that is how they introduce the NS1 guidance, but really when you read through it, it actually has suggestions and some more detail that we ought to address here.

It is that bottom things that I have listed here that we ought to discuss at this meeting, probably, not necessarily in that order but certainly at the top of the list is the ABC Control Rule. The other thing they mention in here is establishing an ecosystem component species. The text sort of suggests that this is going to fall to the Council, really, to decide this, but when I think about it that's pretty much a science issue in my mind and we ought to discuss it at some point, too.

I would hope that the Council would come to us for advice on this in declaring ecosystem system component species. Another topic that is addressed in the NS1 Guidelines is this concept of a threshold population size. Now this is different from MSST. This is a population size below which you would not want the population ever to get, and you have a very strict management action in place if it ever gets that low.

An example is on the west coast they have what they call their 40/10 Rule; and if the population biomass ever gets below 10 percent biomass, they shut all fishing off. That is one example of a threshold sort of population size that is suggested in the NS1 Guidelines. Again, keep in mind this is all suggestions and guidance. We don't have to do any of this, but we sort of should consider it.

Another idea that we have talked about plenty of times in this SSC over the last two years, probably, is this concept of an indicator species for assemblage management. This is brought up again in the NS1 Guidelines in at least one section. Lastly, rebuilding targets, that is another subject that falls to the SSC. I think it was pretty clear in the NS1 guidance that the SSC does choose rebuilding targets, so we will have to discuss that.

I would assume that would fall sort of in line with some of the discussions we will have about the ABC Control Rule because embedded in all this, of course, is we're going to try and develop a mechanism for accounting for scientific uncertainty. What that really means, when the rubber hits the road, is sort of what do you do?

Well, it really means we're going to have to shift to some sort of probabilistic framework. We're going to have to establish probabilities of overfishing that we're willing to live with; probabilities of various things; probabilities of being overfished, these sort of things that we're willing to accept given the level of uncertainty. Well, a rebuilding target sort of falls into that same framework.

Really, what it boils down to is what sort of probability of success in our rebuilding are we willing accept? Do we want just a 50 percent probability? Probably we want better than 50 percent probability of success. What we have done in the past is just a 50 percent probability of success.

That is where I left off. I thought hard about going any further anyway because I didn't want to – I mean, I understand this stuff. I have to live and die by this stuff, but I don't want to be overly influential on how we tackle this as an SSC. I have a unique perspective being with the agency and all that, but, again, I'm just one voice on the SSC.

I didn't want to be overly influential so I think this is a good place to just sort of lay out what I think the general topics are we at least need to discuss. How we go about discussing them and how we go about tackling them, well, that is where the floor opens and we begin the discussion, I think.

Dr. Crosson: Carolyn, I have been e-mailing Sherry and with John a little bit on some of the socio-economic considerations, and I think, John, you also maybe received some of these. Did Sherry mention anything to you or John mention anything to you?

Mr. Carmichael: No, they didn't.

Dr. Crosson: Well, at any rate, Sherry sent me a short e-mail and would it be okay if I read it on some of the considerations? I think these are pertinent to what we're talking about today from the socio-economic perspective. Sherry said, "At this point these are my only two concerns. How will target/non-target be determined and how often will this decision be evaluated. I ask because making a one-time determination on past landings and aggregate will be grossly misleading.

"What one fisherman chooses to target in one year will vary by season, prices across all species and not just those caught, stock status of all species, average size of all species, cost, regulations and other alternatives. In short, it can be driven by factors other than absolute abundance and will change over time.

"The question of trip-level economic data can be used to measure interdependences between stocks and predict targeting changes. It seems that any rules should consider including socio-economic considerations."

Her second point, and this is one that I think actually I would like to bring up at least at some point during the next few days: "How will socio-economic factors be considered in the setting of rebuilding plans? Yes, there is the rule of ten, but the law does give leeway to other factors and I would like to see that investigated.

"For example, bio-economic models can examine the tradeoffs of the ten-year versus the fifteen-year building horizon as the latter offers significantly less painful socio-economic solutions. What is the benefit of expediting rebuilding? In other words, rebuilding for rebuilding's sake has no social benefit.

"There is no question that rebuilding will happen. Given that the stock will be rebuilt, why inflict severe economic losses to make stocks reach that point a few years faster? It seems that the tradeoffs amongst rebuilding plans with respect to socio-economic consequences should be considered, especially since this rule and the data seems to exist for that??

Dr. Williams: I will just add to that that there are definitions in the NS1 guidance on what a target stock is and what a non-target stock is. A target stock is stocks that fishers seek to catch for sale or personal use, including economic discards as defined in MSRA. That is one of the areas where they try to lay out some good definitions, but other things they don't define very well.

Mr. Carmichael: I think perhaps maybe what is Sherry at is that what you perceive as the targeted stocks is going to change over time depending on all these other things, and that is probably the case. I would expect as we get into dealing with ecosystem components we should probably consider that change over time; what were the top ten fish in the landings in 1970 versus 1980 versus 1990?

One of the files that is available to you that was on the second CD was where we went through and provided for each data source, the MRFSS, the headboat and the commercial logbook, just the landings by year, the total landings by species and by year. You can take that and you can see that certain species come in and come out. I think a lot of times it actually ends up being related to their abundance.

Then there is a core group of species that are always in the top ten and the top fifteen. Certainly, that's some of the most basic information we have available. I think as we get down this path in this meeting maybe we can look at some of that and think about is that what we would like to use to justify ecosystem species versus target species and define the fishery. Maybe the fishery is defined differently for today than what we thought it was ten years ago. My hope is that we're intending to do kind of what she has talked about and understand that.

Dr. Belcher: Okay, with that I will open the floor for how we want to proceed; what is the group's pleasure as far as how do we want to proceed along our lines of target focus and what our task is in front of us with coming up with this generalized framework.

Dr. Barbieri: Well, I think Erik laid out a good list of topics that I think laid a foundation for us to proceed on the following task of actually working on the framework. I think if we just follow – unless there is any particular order, let's just follow that list of topics and we can just discuss it. We are going to have the opportunity to discuss them from a biological perspective. Fortunately, Scott is here and he can integrate the socio-economic perspective as well.

Dr. Williams: Maybe I would suggest just a slight reordering of things. As I mentioned, I think the rebuilding targets is going to have a little bit to do with the ABC Control Rule, so those two should be close together. Then since this threshold population size issue is completely foreign to us, maybe we ought to save that until the end or something because that is a new thing for this Council. But, yes, our main goal is the ABC Control Rule so I agree with starting with that, for sure, and maybe just consider rebuilding targets at the same time and just see where we are with respect to that.

I did have a presentation I gave in December that before we dive into the discussion of ABC controls rules, I thought it would be useful to go back over. Again, it is a very minimal

presentation, but at least it starts to get us thinking about certain things we're going to have to consider when we start thinking about an ABC Control Rule.

Mr. Carmichael: While Erik does that, I will entertain you with some of the background. What has happened in the past, we have talked about ABC control rules a lot starting last June. Based on that and the initial guidance that was out in the Reauthorized Act, we then went to the Council at their September meeting and to the Snapper Grouper Committee with an options' paper on the ABC control rules.

You probably got it along the way in several briefing books back then, but just to bring it to forefront it was on the supplemental information that you got in the folder documents. The bottom line from that is it kind of laid out a process using tiers and different levels, kind of following the path of some of our similar councils out in the Pacific and Northwest; you know, given this stock status, this would be the ABC, this would be the OFL.

What it really focused on, though, was the issue that we were talking about many times, which is the probability of overfishing. Erik was at the meeting in September, which was very helpful. What the Council did was pass a motion that said "direct SSC, the SAFMC and staff to evaluate 25 percent with a range of 10 to 50 percent as a probability of overfishing when setting the ABC with respect to overfishing."

So essentially what that said was use 25 percent as the value and then look at a range of 10 to 50 percent when setting your ABCs. So in following sort of the guidelines, the SSC talked about it, we took some recommendations to the Council. The Council looked at that and put this on the table, and I think now it is in the SSC's purview to talk about that further given that we have the final guidelines.

We actually started using some of these numbers in the recent assessment that came out and Erik and the Beaufort team has been able to provide those for a number of species that have been recently assessed, which has been helpful. We can actually do some comparisons of these levels to things we might have recommended in the past in setting SPR levels and everything else, so we know how this will work out.

That is where we stand now. The Council has made a motion and I think the SSC could comment further on that or come up with something that sort of takes that motion and craft it as an ABC Control Rule consistent with these new guidelines. If you're interested, that motion is on the front page of your roadmap, so we can keep it front and foremost.

Dr. Crosson: John, this is a question for you, I guess, from the Council's perspective and maybe also a question for Erik from the NMFS' perspective. Somewhere in the massive documents that were on the briefing book there was a list of questions that the Council had regarding the guidelines for the Revised Magnuson-Stevens.

One of those questions was if it is a data-poor species the law says pretty clearly that the Council cannot exceed the recommendations for the ABC coming from its SSC, but it didn't say – it was listed as a legal question whether that meant that the SSC had to make any recommendation at

all. I was wondering was there an answer for that from your perspective or from NMFS' perspective?

Mr. Carmichael: I think this is from the roadmap as well and it is on the second page. No, I think that is an open question for discussion to see what the final interpretation of that is. Mark, pay attention to this because you may have some feedback on that, and that is the question. It says, "Are ABCs required for the Council to proceed with setting ACLs and accountability measures?"

Mr. Mark Nelson: My name is Mark Nelson. I am with NMFS Headquarters. I work with Galen Trumbull in Sustainable Fisheries, and I have been working on NS1 Guidelines. I recently moved out to Headquarters from the Pacific Islands Region where I was working in Sustainable Fisheries.

With that background, this question is relatively new to me. I have briefly heard people discussing the idea an ABC must be set by the SSC. Understand this is coming from a staff member of Sustainable Fisheries and not necessarily the view of NMFS and I can discuss this with my supervisor closer.

The intent of the annual catch limit requirement is that the councils incorporate scientific uncertainty into their setting ACLs. If that can be done by basically a one-step process in setting an ACL instead of the SSC necessarily being required to set an ABC and then take a second step to set an ACL by the council, if that uncertainty can be incorporated in one step, I believe that NMFS would be open to that.

Of course, there would need to be some sort of justification and you would need to show how the uncertainty is being incorporated in that estimate. Like I was saying, I come from a regional perspective and have recently moved to Headquarters, and so I like to think of the role of Headquarters not necessarily being the director of telling you how you must do it but listening to the regions and seeing what they have to say and if they have an adequate solution that works for them in their region that incorporates the requirements of Magnuson-Stevens; you know, listening to that and working with that.

In short, it is not necessarily required to set an ABC if you can incorporate all your uncertainty in one step. I can discuss this further with Galen and Mark Milliken and hopefully we can have – as we see what you produce, hopefully we can work with you on this.

Dr. Crosson: I guess in followup if I'm interpreting this correctly, then would the decision be up to the council to decide whether – if they have the ability to set an ACL for any species, date poor or not, without necessarily having to have an ABC recommendation formally from its SSC, it is pretty much up to the council to decide whether they want that recommendation. It is a decision at that level and not the SSC? I am just trying to think of this practically.

Mr. Nelson: Yes, but at the same time it would need to have SSC input into that level of recommendation. For instance, they couldn't set that – you know, they would need to come to

the SSC and basically ask if this is an acceptable level or what their scientific opinion on that particular limit would be.

Dr. Belcher: I think my understanding from the group is the main concern is if we have a species that we can't or we don't feel comfortable putting a number forward for an ABC, because we either don't have the data or we can't give you a number that we feel doesn't come with such a high degree of uncertainty that it is basically walking a tightrope which way it is going to go. In that situation if we cannot, based on scientific advice, put forward a number at that point, then what happens? I think that is more of the question that they were hoping to get the answer for.

Mr. Nelson: Yes, there is ongoing work right now in S&T at Headquarters dealing with that specifically. It is not a final product yet and isn't out, but it is heading in that direction. It basically takes a very similar sort of framework approach of if you do not – for data-poor species, if you don't have good estimates of biomass for catch or so on, it is basically a matrix that works with the data that you do have, the best available data, and with the greater the uncertainty increases the buffer size.

In using that tool as a framework you can use that tool to kind of go with your best guess and use qualitative data from your SSC and adjust your ACL or your ABC recommendations from that. Unfortunately, that product isn't in final form quite yet, but Rick Methot and his working group has been working on that. You know, offline if people want to discuss it with me more, I have sort of like a preliminary document, but it is not anything that is really ready to go out as a public document.

Dr. Barbieri: Well, I guess you just answered my question. The way that you were discussing the issue gave me the impression that you're talking about one of those working group document reports, right, that are being prepared to look at different types of criteria and data and analytical procedures for defining and helping the SSCs and the councils address the issue of defining ACLs. I was going to ask you on the status of those reports they're supposed to be ready sometime this winter, and you're saying at this point you have a preliminary draft final copy?

Mr. Nelson: I don't think I would call it a draft final copy. Actually it was the week before last that I first saw this document and it is still being worked on by I believe it is called the Data-Poor Stocks Working Group. It is headed by Rick Methot. I don't know what the timeline on it is. If I had to place a guess, which I probably shouldn't, but I would say in four to eight weeks or a month or two until it is at least ready to go out as a draft product and go out and get input from people.

It will be, again, guidelines; you know, one way to approach setting ACLs but not necessarily a mandated or statutory way that you must do it, but a guidance document that councils and SSCs can then modify and make their own and make it work for their own regions.

Ms. Lange: My understanding is that if a stock is in the fishery then the ABC Control Rule is supposed to incorporate methods of coming up with the ABCs; that the SSC is required to provide recommendations to the councils for ABCs for every stock that is considered to be in the fishery, however that is interpreted, and that the intent of us developing ABC control rules,

which is by advice from the SSC to the council, is to identify how those data-poor stocks – an ABC could be developed for those.

I don't anyone is sort of off the hook for data-poor stocks. I think you clarified that in your response to Luiz, but it was a little hazy there at first. So, again, I think we do need to come up with ABC recommendations. The other thing is, Erik, I missed the December meeting, but back in June you had made a comment relative to this other guidance, the technical guidance. Are you on that group or do you have any idea; is it strictly the S&T or is there additional work being done on a regional basis?

Dr. Williams: No, that is the one I am familiar with that he just mentioned. In fact, I have a draft copy of what they have been working on, but, again, it is not ready for release. I just have a sense of what direction they're headed in, at least. He is right, it is at least a month or two away from coming out. I think they have still got some work to do.

Dr. Belcher: Any further discussion on this or specific questions for Mark? Okay, seeing none, Erik.

Dr. Williams: Yes, this is a presentation I gave on our last day of the meeting in December. It just sort of lays out some things to think about when we start thinking about setting up this ABC Control Rule. I think Anne was right; we're going to have to think about these data-poor species all the way through the whole range, all the way up to those where we have a full-blown stock assessment with uncertainty estimates coming out of it. We have to think about the full range.

But, at the same time this is probably the logic behind having an ABC Control Rule established is we have to think about this in a logical way and a way that is consistent so that we're not just piecemeal applying techniques to each given situation when it has to sort of fall into some framework that has some logical consistency.

That is what this presentation is hopefully geared to try and get people to think about certain things that you're going to have to consider to maintain some sort of logical consistency. This is a key slide. There are certain sort of basic principles of uncertainty that we need to think about. It seems intuitive to say some of these, but we always think about them sometimes.

Less information does tend to lead to increased uncertainty – that's a basic principle – but a more complex analysis should not necessarily lead to more or less uncertainty. That is often a problem we run into in modeling is that you actually can get what seems like more precise estimates out of a simpler model just because it is simpler.

The error estimates that we typically use in statistical techniques sometimes will yield very tight answers from, say, a surplus production model versus a full-blown age-structured model that accounts for time-varying selectivity and time-varying natural mortality might appear to be more uncertain but it really isn't. We need to keep that sort of idea in mind.

The key to what we're doing here is that this increased uncertainty should lead to increased precaution. That is the whole premise really behind this new Reauthorized Magnuson Act is that

we will now account for this uncertainty and that this third premise will hold that as we have increased uncertainty we will take increased precaution.

Another premise to think about or concept to think about is that sources of uncertainty tend to be cumulative; not necessarily additive and not necessarily multiplicative but cumulative in the sense that if we're not accounting for all the uncertainty, if we try to account for other sources, it will more than likely increase that uncertainty; it is not going to shrink it.

Just as an example, these are just examples of cases where you would compare – you know, in one situation we consider it to be less uncertain and in another situation more uncertain, and that is fishery-independent data versus fishery dependent. In general, fishery-independent data we think is less uncertain; in other words, more precise. Fishery-dependent data tends to be more uncertain; has issues with it; has potential biases, and therefore is more uncertain. Age data at least in most stock assessment models tends to provide more certainty in our results and tends to be a little more accurate depending on the quality of the aging, of course. But, contrast that with length data, length data usually is not very informative.

Another classic example for our region is commercial versus recreational landings. Commercial landings, we have a pretty good sense of the survey of those. Recreational landings, we know those estimates can be quite uncertain at times. Another contrasting example would be age-structured models versus surplus-production models. Again, that is the complex model versus a simplistic model.

In sort of the stock assessment world this would be sort of assuming we at least could get a stock assessment model. This is not addressing the situation where we don't even have a stock assessment model, but this is sort of a ranking of a general understanding of how well we characterize uncertainty from our stock assessment models.

Again, this is that concept of completeness, keeping in mind that if we're not as complete in characterizing uncertainty, then we need to possibly consider expanding it somehow or take that into account in our control rule that it is not a complete measure of the uncertainty that is coming out of a particular situation.

So, in this hierarchy probably the crème de la crème of accounting for uncertainty in assessment modeling would be sort of a Basian-type model with a full set of prior distributions, and that would be viewed in the statistical world as probably the most complete characterization of uncertainty.

The counterpart for the frequent is a Monte Carlo Bootstrap Procedure, a similar thing, but in the end we have put uncertainty on almost all of our input into the model, and so what we're getting out is what we believe the most complete characterization of uncertainty. Now, as we move down the spectrum you can go to what is considered these partial Basian or you just put uncertainty on key parameters; for instance, natural mortality or steepness.

We just put uncertainty on those parameters but leave everything else fixed. As you move further down, then you get into the realm of, well, instead of running sort of a Monte Carlo or a

stochastic-type analysis for characterizing uncertainty, you might just do sensitivity runs – that is sort of the realm we're in right now – or you do multiple model types.

That is not a very complete characterization of uncertainty but it certainly is valuable to us. Then you move further down and you into like an inverse Hessian error approximation that is a very crude method of taking your results from a single model run and trying to infer the variance based on the likelihood structure; not totally desirable and not very complete.

Then, of course, we get down to the bottom where we just have a single model run with no estimates of uncertainty at all, and that is obviously very incomplete. Of course, we could get even less complete than that. We could just not even have a stock assessment model, which is a whole 'nother ballpark. So, within these methods I sort of tried to lay out where we have been with our assessments in the southeast. To the left there, but we have a couple of models where we actually tried to get up into that near top range of having a partial Basian or Monte Carlo type method, and that was our snowy grouper and tilefish models.

We actually did sort of a bootstrap procedure where we put uncertainty on a lot of input parameters, but that was a unique case and that caused us headaches trying to get that through review and we backed off because there was a lot of work involved and the payoff didn't seem that great at that time, because the uncertainty estimates we got out of there weren't really being formally used.

Maybe we had some foresight back then and realized maybe we were eventually headed to where we are now, but this was back in 2004 and we weren't fully utilizing the results of those uncertainty estimates. Now we do need that information. So, where we tend to be with our more recent assessments is this area of where we just have sensitivity runs and multiple model runs.

Red porgy, black sea bass, greater amberjack, vermilion, red snapper and Spanish mackerel all fall into that range. But then we also have a bunch of species for which we declared overfishing and overfished status based on some very simplistic analyses, actually per-recruit-type analyses, catch-curve analyses, and that is where they fall into this very bottom of the spectrum.

Speckled hind, red grouper, black grouper, warsaw, gray triggerfish, white grunt, et cetera, tend to fall at the bottom of this range. I guess the point of this is it is all fine and dandy to come up with these nice probabilistic, fancy statistical methods for dealing with uncertainty, but we're not even in the realm yet of where we have characterized uncertainty very completely. The bulk of our species, we have a moderate measure of uncertainty or we have virtually none.

Here is a point I really wanted to get across. When we're setting up this control rule, we really need to avoid having inconsistencies in the way we're handling sources of information. Like I said, we really need to avoid this property of having uncertainty increase with increasing model complexity; so if we have a simpler model that seems to produce smaller uncertainty, it should not, when laid side by side with a more complex model, actually result in less uncertainty.

That is why probably the best way for this is to create a tiered structure of some type where we somehow characterize the completeness of uncertainty coming out of each analysis, whether it be

a full-blown stock assessment, whether it be a single model run, whatever, but have a characterization of that completeness of uncertainty, and then we can adjust then with some sort of additive factor or more precaution or however we want to address that.

That is the other topic that we will have to discuss is, for instance, if we have a situation where an estimate is coming out and it has a measure of uncertainty associated with it, but we don't believe it is complete, well, do we either expand the uncertainty by some factor; or, do we increase the precaution? There is a little nuance there but there is a distinction there.

Either on the science end we're adding variance to the problem or on the management side we're pushing more precaution because we know it is incomplete. There is a distinction there on how we want to address that, and I think there is an importance there on how we do that as well. I think I mentioned the best way is if we can start to move towards these full Basian/Monte Carlo Bootstrap Procedures, which I think we're headed in that direction – it is going to take some years to get there because it is not like we can just jump into these models because, unfortunately, like any model, they tend to be more complex and with increasing complexity comes increasing data demands, essentially.

In this case if we want to start thinking about going full Basian in the SEDAR process, we will have to start thinking about establishing prior distributions for almost all the input data, and that is no easy thing to do. It can be quite tricky at times. That is the point I am making below. I think in the SEDAR process is where we will slowly start to address uncertainty in a better way than we are now.

You'll probably start seeing intermediate steps coming to the SSC out of the stock assessment process. Probably the first steps is we'll start addressing uncertainty in a more formal way with the least steepness, M, some of the more important critical parameters, and then eventually we will get to the point where we can establish these full Basian models, I hope, but we will see. That was the end of that presentation, so any questions or concerns?

Mr. Chester: Thank you, Erik, I thought that was really a very good presentation of uncertainty. My question for you is we have this REPAST approach that you and Kyle and others have been working on. I would like to ask you, if you can, to try to link this discussion of uncertainty as far as where we are with the majority of our species' assessments, what we're actually getting out of the REPAST approach or the contingency table approach in terms of how much of that uncertainty are we taking into account when we're looking at the uncertainty that this group has discussed as perhaps being the correct method to be using for the ACLs.

Dr. Williams: That is a very good question and it is key to our discussions. I don't know if I can fully answer how well we have characterized uncertainty up to this point. As I said, the closest we came I think was with snowy grouper and tilefish where we did a pretty extensive job on that. In some respects you don't know for sure how well you're characterizing uncertainty when you're just using a partial method.

I would say the techniques we have been using up to this point, we're probably getting 75, 80 to 85 percent of the uncertainties being characterized, so we're close, three-quarters of the way there, but we're not all the way there.

Mr. Chester: So you would say that the approach that was used for example, the gag example is probably capturing a good, substantial portion of the uncertainty, but there is still an amount that we're not accounting for?

Dr. Williams: Yes, I think so, definitely.

Dr. Belcher: Further comments or questions for Erik? Okay, I guess now we have to sit down and get out our pads and pencils and start thinking about how we best want to put the framework together. Does anybody have a jumping off point for this; how best to proceed? I know John and I kind of kicked around a few ideas on the phone about whether we do some sort of flow charts, but something that we're looking at a dichotomous flow in which we're asking ourselves questions and how best to proceed. Erik.

Dr. Williams: Well, we kind of got to almost a jumping off point at that last December meeting. If you remember that last day, we had some discussion and Andy Cooper had floated sort of almost a strawman out there which suggested the tiered structure would certainly have probably several layers of tiers within tiers, and that outer tier ought to be based on the estimates of the critical benchmarks, whether we're getting them or not.

In other words, for a given situation do we have an estimate of Fmsy and Bmsy or do we just have one of the two or are we using a proxy. That would be like Tier 1. Then perhaps within that tier is then when we would start to address this issue of complete uncertainty was characterized for that estimate or something along those lines. I think that would be my strawman to sort of start putting some flesh on the bones, so to speak.

Dr. Belcher: I think that sounds like a good plan. Unfortunately, I missed a chunk of that meeting because I was downstairs. I guess in some ways are we better off putting something up to view as we go along? I mean how best to proceed with this is what I'm asking?

Mr. Carmichael: So there is agreement for tiers? Heads are nodding so there is agreement for tiers. Erik, do you want to drag up a quick document, if you don't mind.

Dr. Reichert: Do we have that presentation that we had at the last meeting because I don't remember seeing it in the documents we have?

Mr. Carmichael: You would have had it from your materials from the last meeting, right? Did you get it the last time?

Dr. Williams: No, what I have is just written notes, essentially. We never actually formally wrote it down, I don't think.

Dr. Reichert: Yes, so my question is do we have that anywhere or is it just our combined notes?

Dr. Belcher: My understanding is it is just combined written notes right now, so I guess it is going to be, again, capturing it on the computer so that everyone can follow as we go along.

Mr. Carmichael: I figure that was from your Wednesday meeting?

Dr. Belcher: Yes, that was the last day.

Mr. Carmichael: The only thing I got in writing from you guys for that meeting was the list of data information, so whatever came from that that is going to be useful is going to have to rely on your recollection and what you personally wrote down.

Dr. Barbieri: On an unrelated topic, we're scheduled to break at 10:30 and maybe we should just break now and by the time we get back we jump straight into it.

Dr. Belcher: Yes, we can do that; we'll go ahead and break.

Dr. Belcher: John is putting up what we have thus far as part of the strawman framework.

Dr. Barbieri: Erik, this is basically the suggestions that Andy Cooper had brought up?

Dr. Williams: Yes, this very closely follows what the North Pacific does in their tiered system. This is very much still incomplete right now. We need to flesh out sort of the bottom half of it, but certainly that first tier is going to be based on the information that is available, what sort of type of data you have. Then what I envisioned as a secondary tier or tier under each of these levels would be the degree to which uncertainty is being characterized or measured.

Dr. Belcher: So are we going to be adding more tiers as we go along; you just want to flesh out the first three and then come back?

Dr. Williams: No, I would say let's flesh out this upper level tier first because we may have to come back to it depending on what we make decisions, you know, how we're going to handle the situations under each of these headings. Mark kindly handed me a copy, which I didn't have with me, but it got distributed at the last council meeting, is a copy of the North Pacific's tiered structure. We probably need to add some more to this.

They have all the way down – their last category is, is a reliable catch history available is their sort of last tier of information, but we might need to go as far as there is not even a reliable catch history.

Dr. Belcher: And for those you who might have that available to you, it is on Page 36 in the SSC Workshop Document or the National SSC Document.

Dr. Williams: One thing to keep in mind is when we're setting this up is try to think of each situation and where it is going fit into this and how it is going to fit into this. Like, for instance, the one example we have that I'm not sure where it fits in is if you have overfishing criteria based on a catch-curve analysis; where does that fit into the structure? First of all, is catch-curve

analysis considered an assessment model or not and where would it then fit into this whole scheme?

Mr. Carmichael: Do you want to throw out some examples of these to try and keep people warm?

Dr. Williams: I think we still need to flesh out the complete list. I would think that we need four, five, six, probably. Looking at the North Pacific's, I would think after reliable proxies we might need reliable estimates of fishing mortality rate, and that is it. That would sort of cover maybe the catch-curve-type analysis.

Then maybe another one after that would be a reliable catch history. Then the bottom of the barrel is we don't even have a reliable catch history. I don't know if we list that or if just by default it falls off the map; I don't know.

Mr. Carmichael: There may be something between you have a catch history but it's fairly unreliable for some of our species that we know have a very high variability because they don't show up that often, but then maybe there are some where you say, well, there are no catch records at all. I don't know if it gets that bad, but it's not unheard of.

Dr. Belcher: I have got a question that kind of ties into the topics that we're talking about. One is for the ecosystem species' component. I guess this is just an idea to throw out and think about, but can species transition on and off of that? If you have a species that starts looking like it turns out to be more targeted because either abundance changes, global warming – I hate to throw that out there, but it is just their distribution in such a way that now all of a sudden you actually have a fish that could actually become part of your top ten species, your top twenty species; would it then transition off of an ecosystem list to be part of the target fishery or is that built into that? Is that something that has been discussed?

Dr. Barbieri: Well, I thought that we were going to try to discuss some of those more general sort of like the guiding principles from the discussion of the NS1 that you had started with instead of just jumping into the framework right away, because he set out to discuss NS1, which included the definition of what species were considered targets, how they're going to define target species that are outlined in the guidelines but still in the context of our species.

Dr. Belcher: Well, I guess where that question came from was just relative to the number six that John had put up, that unreliable catch history where you have a species that kind of shows up and then disappears. My question is if it is a low-enough contributor to the list of commercial catches, should it really be part of that or maybe that is the catchall. Maybe that's where you put the ecosystem thing; I don't know.

Dr. Williams: Well, I think the ecosystem component species are sort of irrelevant for the ABC Control Rule because we're not going to be setting ABCs for them. If they have been assigned to that ecosystem component species, what we're doing now doesn't even apply to them.

Dr. Belcher: But in essence couldn't that be part of that. I guess that is the question is how you're looking at it, but if you have species that doesn't meet certain requirements; can it be on this list to say, well, do we have to come up with an ABC because you've already told data-poor species, we're going to be responsible for an ABC level, so is it possible that one of the triggers under these control rules would be if you have an unreliable or an unsteady catch stream, they're there, they're not, and they're not in a high magnitude; couldn't that be one step under that? In essence, it puts it out of an ABC range and there is a documented reason why it would not be considered for an ABC Control Rule.

Dr. Williams: I don't think that is the intent of that ecosystem component species. As I understand it, it is truly a non-target species, it is not affected by the fishery in any way, shape or form, so data limitations have nothing to do with whether you classify something as an ecosystem component species or not. It is whether it is going to be fished on, essentially.

It doesn't even have to be landed. It can be a discard, but it is a discard that is linked to another fishery. If you really it, my understanding is we're not going to have many species that are actually going to fall into that even though you may think we might, but they're all linked. I mean you cannot go out and catch any vermilion snapper or grouper without picking a tomtate or two, so tomtate are a part of that fishery and they're not going to be just relegated to an ecosystem component species because they are affected by the fishery. I think that is the distinction between ecosystem component and not; because if they're affected by the fishery in any way, shape or form, they probably still need to stay in the FMP or the FMU.

Dr. Belcher: Okay, I understand that. Again, I thought we were somehow going to be looking at that 73 species component; you know, that we've got snapper grouper with 73 species of which, what, 10 species or 90-some percent – so that means 63 other species at some point, because they're part of the target fish are going to have to have ABCs.

Mr. Carmichael: Or not and I think that is the discussion that you guys have to have.

Ms. Lange: I agree with Erik that they all need to have an ABC, but I think the way you worded your question was whether or not a species that's considered an ecosystem component could at some point become a species that needs an ABC, and I think the answer to that is yes. If a species is just really not taken now but there is a change over time, ten years from now or five years from now where suddenly is – I mean many instances of that were windowpane flounder were never even taken in the northeast and now it is a relative significant part of the fishery. Again, it can change.

Mr. Carmichael: I think that is a given across all of this stuff. All of this stuff can change. The primary species in the fisheries can change over time. A fish may be a relatively inconsequential part of it. Thirty years ago it was very important. We have all seen plenty of examples of that stuff happening over time. I think that definitely is a given.

Well, I tried to, in light of what Luiz said, put some guiding principles at the top and so far I think it is to use tiers; to have tiers based on the degree to which uncertainty is characterized. Then, of course, nothing is static; nothing is forever and all of this can change as new

information comes to light. If people have other things that they think are self-evident that you would like to throw out there and make sure everyone is in agreement, we can work on fleshing this list out some as well as we go.

Dr. Williams: What we're laying out here is we're addressing the type of estimates that are coming out of the assessment realm in determining the ABC Control Rule, and we're looking at the degree to which uncertainty has been characterized, but there are other factors that we could also consider.

I don't want those to be left off the table such as the whole susceptibility problem; you know, what if we want to factor that in as well. What if we want to add a little more precaution to a species that is more susceptible? That is certainly going to be critical for some of our data-poor species, too.

Dr. Barbieri: I hope we're not beginning to repeat ourselves here, but just to kind of reinforce the issue that John brought about nothing static, nothing is forever with this discussion here and this issue of susceptibility and data-poor species approaches and the discussion we had earlier today, I think we're going to have to really understand that this is going to have to be a dynamic system.

As these reports come out, we're going to be better informed on the next steps; that what we're going to do here is put forth our best approach to reflect the information that we have in front of us now, but we're going to have to adjust this progressively, especially I would guess over the next year or so. I think as the discussion that came up in Hawaii at the National SSC Meeting, the main purpose of those NMFS working groups was to provide guidance to the SSCs and councils.

Because the two processes have been running in parallel, we have not really been able to take advantage of their guidance, and we have been putting good people and good effort in trying to do this. We were hoping we'll have those reports available now so we could incorporate that into our thinking. It is not the case so let's be ready to do the best we can here but also flexible enough, you know, about December or whenever that we can potentially revise and refine our discussion.

Dr. Williams: Since we listed possible topics to consider, another one is the stock status itself. In other words, as a stock gets more and more overfished, should we add more and more precaution to the system? We could even formalize that as something very similar to that 40/10 control rule that I talked that the west coast uses where essentially their buffer, as you could call it, goes to infinity; in other words, the catch goes to zero, as the population gets to, say, 10 percent or something like that, so another factor to consider.

Dr. Barbieri: So, you see, the North Pacific Framework, the tier system, they do a nested sort of approach where within their tier from, you know, the benchmarks and the types of estimates available for biomass and fishing they mortality, they then nest under that which one of those tiers, stock status sort of discussion that would adjust the final outcome of the rule.

Dr. Crosson: I have a question for Erik. You brought up this 40/10 control rule several times; what do they do if the species is not something that you consistently target? If it's considered to be that vulnerable and the stock is that low; do they just shut down an entire area until that stock is rebuilt?

Dr. Williams: Well, yes, if it is still being impacted by Fishery Y, Fishery Y will be then regulated by its bycatch essentially of that species.

Dr. Crosson: Should the ability or inability to target be up on this list of things to consider with this?

Mr. Carmichael: Do you think it should?

Dr. Crosson: Yes.

Mr. Carmichael: Should that be a guiding principle or is that something to keep in mind?

Dr. Crosson: Keep in mind.

Ms. Coakley: I just have a question about the issue of susceptibility as it was raised because stock status is one thing, and maybe the stock levels may be low and they're very sensitive, but in terms of quantifying how susceptible a stock is, I can see in the tier-based system when you use things like MFP type approaches, like an F 35, F 40 percent, those things take life history characteristics into account when you're calculating them, like maybe menhaden would be an F 10 percent because it is highly productive or something like that, but what other ways would you explicitly take susceptibility into account on something like this tier-based system; how else would something like that be applied?

I could see saying, well, you know, it is long-lived, it is very susceptible to fishing pressure, but how do you then go ahead and develop a control rule around that or identify how much additional precaution is needed in your control rule to set your ABC?

Dr. Barbieri: Just a thought that in that case perhaps that will be one of your top tiers. I mean you would just stratify your stocks based on susceptibility and then go into the other tiers. You could work with them like that; that species that are more susceptible have different levels, but that might be reflected also on some of these reports. One of the working group reports provides material for some of this discussion on how to incorporate the susceptibility into the control rule, how to handle that.

Dr. Belcher: I know there is one method that has been talked about. The second LENFEST Report had a mechanism. It still has some bugs to be worked out, but they were working with a matrix of information that kind of came up with a qualitative susceptibility. We talked about that some in Hawaii, so there is a methodology that is out there. I think Rick Methot said they were talking about looking at that within their own group well because there were a couple of little ticks in there that I think they wanted to work out that would be workable as well.

Dr. Crosson: It is a related issue. It is under the list of things to definitely keep track of. It is related to this issue but it is also a separate item that should be listed is regulatory history and management tools. We have tried various measures in the past and they have been unsuccessful. I know this is kind of creeping into the council's jurisdiction, but I think it is something that we should keep in mind when setting ABCs.

I know that there is also a topic that is going to be coming up with golden crab on the possibility of setting up an ITQ for golden crabs. When you set up any kind of system like that where you actually control catch directly rather than just effort, the gap between ABC and the catch targets can be relatively small, and this is something that the SSC is going to have to keep in mind when it sets those levels.

Mr. Carmichael: I'm just thinking is that more of something to keep in mind as you apply an ABC Control Rule to the data that you have as opposed to something you would keep in mind when you set up the ground rules for the ABC Control Rule? If you have a regulation that you know has affected the relationship between catch and abundance, so species where you don't have an assessment and you're looking at catch trends, that you would be, yes, you have to take it into account when you go to applying it as opposed to it wouldn't necessarily affect the rule itself, but it would certainly affect how you interpret that rule in light of that fishery without a lot of data. Do you see what I'm saying? I am trying to think does that affect the control rule and how you would structure it as opposed to it affects how you would interpret it and you want to apply it.

Dr. Crosson: I think that is an open question, John. I don't think I have an answer for you right now.

Dr. Belcher. Anything else or do we just want to go ahead and start trying but keep the thoughts open as far as adding more to it? We have got seven to start with.

Dr. Williams: One other way to approach this might be to think in terms of if you buy into my premise that I made earlier that uncertainty tends to be cumulative is the instead of sort of mimicking the North Pacific exactly is we just have sort of several measures upon which we put a stock in based on these various – I guess to mention would be the way I phrase it.

In other words, we sort of outline some dimensions up there. One is the susceptibility dimension. Stock status is another dimension; the type of estimates that are coming out of the stock assessment and the completeness to which the uncertainty has been characterized. We could just sort of set up that up in sort of a matrix framework where we just line the species up within each of these dimensions and then sum it up, so to speak, and that determines our precaution levels based on sort of a four-dimensional analysis or something like that.

That is another way to set it up. That would be sort of a matrix approach or we can stick with this tiered system, but I think we're dancing around these ideas and we're trying to figure out which ones – we need to decide which ones are really, really going to adjust our precautions and which are just something we're going to kind of cursory think about. Are we actually going to say for hermaphroditic species or something, because we think that life history type is more

susceptible, going to always be more precautious for those species relative to the non-hermaphrodite?

Mr. Carmichael: Were a number of those things addressed in the LENFEST approach, I believe?

Dr. Belcher: Especially in the second one.

Mr. Carmichael: Isn't that kind of essentially what they did; they went through and characterized a number of dimensions about a fish and those species? Do you want to look back at that?

Dr. Barbieri: We can look back at that, but, again, if you think, Carolyn, about the presentation Rick Methot gave in Honolulu, they are incorporating that as that same thinking and thinking about dimensions just like that. I think it will be very useful for us. I like Erik's suggestion. I think that is a good idea.

Dr. Neer: I just want to point out that in the supplemental information there is an ABC Control Rule Options Paper that John put together for the snapper grouper thing in September in the meeting, and he does have some of these things broken with a little bit more fleshed out underneath them, such as level one, recently approved assessment, msy-based reference points, and we had a probabilistic analysis.

You had all three of those and gag would be the example. Then if you have that information what you set up your control rule to be? As I was scrolling down, a lot of these points are already in here, but there are some that we haven't. I don't know if you guys have had a chance to go back and look at this because it is from September. It also will jog our memories a bit more. It is D-1 under the Supplemental Material that you got as left over from the September meeting. It is not on the main roadmap. It is in that second supplemental information that had the Excel spreadsheets in and the data document. Supplemental Material Folders Document and it is D-1. That is another thing to maybe jog our memories and look at for conversation's sake.

Mr. Carmichael: It is something like this where the critical dimensions and then obviously the availability and nature of the assessment; or as we said, the degree of uncertainty as characterized; that is definitely a critical dimension? It seems to be. The susceptibility is kind of the vulnerability as well as where we were sort of hinting at the biological considerations. Do we subdivide that out into multiple things or just sort of a general score across the board?

Dr. Williams: I think at this point let's just keep it as a general category. We can become lumpers and splitters as we go through this process, but let's just keep the general concepts of keeping the biology in mind as a general concept.

Mr. Carmichael: Fishery factors, maybe; targeted versus non-targeted?

Dr. Williams: Well, the other one would be the stock status, I think, which we have up there. I think that's another critical dimension. I think that is pretty complete and it covers the major categories, and then it is just a matter of how we're going to work with those. One thing I would

suggest because I just envision a horrific process if we start getting into too much of the nuts and bolts; at first let's try to, anybody, steer away from thinking about how much precaution we're talking about and just think in general terms.

We're worried actually about putting numbers to this at a much later date. In fact, I would even go as far as to suggest that maybe out of this meeting we don't even get to the point where we start applying actual numbers of the precaution yet and let the council take a look at this and start that back and forth.

Dr. Belcher: I think they have actually given us to 25 percent with the bracket of, what, was 10 to 50?

Dr. Williams: Right, which I don't know if they say 25 percent, you know, how do we then – I mean, are we stuck at 25 percent or is that 25 percent for our top tier?

Mr. Carmichael: That's applying to the stocks for which a P-star probability, whatever we want to call that, analysis has been done, for which you're able to provide the probability of overfishing occurring given a given harvest level. That really applies to our top tier, which is where you have the full quantitative assessment that you supported and you can actually have that analysis. That is really I guess in a way just the tip of the iceberg. Then we get down to all these fish where we don't have assessment, and that's where all of these become important.

Mr. Chester: Yes, John, but even in the case for the top level we're talking about uncertainty in the parameters, in essence, but it's still, according to the guidelines, the responsibility of the SSC to take into account other factors, such as we have laid here in dimensions. That is what is a little confusing to me is how does that get quantified, and it speaks to what Erik did, which is kind of something down the road but it is something we really ought to be thinking about and making very sure I think that this group is taking into account those factors as it relates to scientific uncertainty and doesn't get into the issue of what risk level the council is willing to circumscribe these numbers with.

Mr. Carmichael: The ABC Control Rule laid out here, as we talked about a little bit ago, these tiers, the seven of them really kind of relate back to availability and nature of the assessment. That is the first cut. Then theoretically within each one of these you will have some guidance based on susceptibility, vulnerability, biological and then some other based on stock status. Each one of these could be subdivided to account for these other factors to get to the multi-dimensions.

Dr. Barbieri: I was just going to add that is a very good point in terms of the complexity of the assessment, and that is in line with Erik's presentation that basically the more data, the more detailed information, more complete information we have dictates that we have more complex assessments, so that is sort of intrinsically related with that. The types of assessments we have available and the data richness for the species that we are dealing with is helpful.

Dr. Williams: One thing is those necessarily don't have to be nested levels, but they could be side-by-side levels. In other words, just evaluate among each of those critical dimensions and then somehow sum them up rather than have it nested within each one.

Mr. Carmichael: Yes, we better get through this quickly before that dies, okay.

Dr. Neer: I guess I just have a question. You have Level 1 as address assessment and data availability. Well, don't we have to do that for all species? I think in this case you mean like Level 1 would be that we have everything we could possibly want. I was going to say that is just a theory.

Mr. Carmichael: These aren't the tiers. First you do this; second you do this; third you do this.

Dr. Neer: I'm with you.

Mr. Carmichael: Should we try to work through some of this from here to find out where the pitfalls lie and where our idea is not holding water, our theory, hypothesis?

Dr. Belcher: Do we want to pick a specie and follow it through and see how we would ask the questions? I mean that's kind of how I have envisioned it anyway is we would have to look at a specie one at a time, what do we have, where do we go? I have got the table from December of those species that we're going to faced with in 17.

Mr. Carmichael: Let's not use one of those species from Amendment 17.

Dr. Belcher: Okay, let's use goliath grouper; how is that? I will pick an even easier one.

Mr. Carmichael: How about greater amberjack? We have an assessment. I have that up there at the top, right; is that considered a Level 1 in terms of the assessment?

Dr. Belcher: I think we have to ask what you have. That's the easiest question; ask what you have and then determine where you're going to be, so what do we have relative to greater amberjack?

Ms. Lange: Would reliable estimates of Fmsy be Bmsy and F, so therefore it fits in Level 1.

Dr. Neer: Do you have probability estimates for that?

Dr. Belcher: Well, we haven't gotten to that point yet.

Dr. Neer: Well, are you asking what data you have –

Dr. Belcher: I've got you, okay.

Dr. Barbieri: Well, you see here is where, if I remember correctly, greater amberjack, instead of an age-structured statistical catch at age, was a surplus production model; what do we have?

Mr. Carmichael: You're thinking Gulf.

Dr. Barbieri: I see; I'm thinking Gulf, that's right.

Mr. Carmichael: I don't recall if you had Fmsy and Bmsy both. Did we have the full suite for that one and approved, Erik?

Dr. Williams: I think we did; that was one of the few where the review panel actually accepted the stock recruit curve that came out of that, if I remember correctly. I will have to double-check.

Dr. Belcher: That addresses the Level 1, right, so Level 2, looking to the biological.

Dr. Williams: The dimension we haven't looked at is given that you have reliable estimate of those; what about the characterization; how well was the uncertainty characterized? Now in that case, in greater amberjack that is only a partial characterization at best. It was not anywhere near a complete characterization of the uncertainty.

Mr. Carmichael: Are we thinking of some predetermined tabulation statements or something about the level to which uncertainty is characterized in the assessments that will now come into play?

Dr. Williams: That is a good question is who should best determine – how should this determine the completeness of the uncertainty characterization? Should that be something we now put into the terms of reference in SEDAR essentially that part of the product of the assessment will be also some guesstimate on whether you're 50, 75 or 90 percent complete in your characterization of uncertainty.

Mr. Carmichael: Fair, good.

Dr. Williams: Yes, something like that. This is where we will have a lot of discussion on this is what kind of a scale we're going to develop for these various criteria? Is it going to be something very non-quantitative maybe; just like the stoplight, you know, is it red, yellow or green or something along those lines?

Dr. Barbieri: And by the way, based on what Erik said, I like the idea. I think it would be nice to have this characterization of uncertainty specifically in the SEDAR terms of reference. I think that the reviewers then will provide their perspective, but the assessments are going to come before the SSC, anyway, so we're going to have the opportunity to reevaluate and provide our input as well, but we benefit then from having the review workshop's recommendations on that.

Dr. Neer: Well, then, this comes back to a point that Erik brought up in the last meeting was that what do you mean by characterizing uncertainty? Is there a probability of overfishing? How well did you characterize your uncertainty around every single estimate that went into your model?

People can have different interpretations of what you mean by characterizing your uncertainty, so I just think you need to be clear on what it is you would like the assessment team or the assessment panel to comment on in the SEDAR Report. You can't just say have you characterized uncertainty; what does that mean?

Dr. Barbieri: Right, and I think we're going to have to work on this in more detail. For something like greater amberjack, it is just like – you know, species' ID issues, with just fishers out there; you know, aging of greater amberjack is not as simple as it is for some other species. I mean you have a whole number of things that we subjectively – you know, when we look at an assessment, we already bought that assessment as having a number of uncertainties and maybe we can capture that as a group when we discuss it as an SSC.

Dr. Neer: I just know people always go "what do you mean by this" when you give them a new term of reference.

Mr. Carmichael: I think Erik has this question a lot; what would the SSC like to see in terms of characterizing uncertainty. Have we made any progress in that or is that something we should take a little time out here and have a sidebar conversation of some sort on the second parameter of our Theory Level 1 for a well-assessed stock, and we have already hit a snag.

Dr. Williams: I don't think we should take too many sidetracks. We need to try and plow through this, but, yes, take note on that.

Dr. Belcher: I was just going to say I thought that was one of the things, thinking back on goodness of fit with selectivities and such; some of that is just pretty much – it is not statistically assessed for goodness of fit; it is an eyeball assessment of goodness of fit. So, we have got issues of quantitative assessments, of certain uncertainty, non-quantitative of others. How best to take all of that in to come up with an overall measure of uncertainty I think is definitely going to be a worthy challenge.

Mr. Carmichael: So, do the Delphi, everybody go around and say what you think it should be and we fill in a blank for greater amberjack of everyone's recollection of how that assessment was done and what you felt about the uncertainty characterization? It is not as complete as SEDAR 4. Is that the pinnacle; probably. How about "good"?

I would say SEDAR 4 was excellent. That was very thorough. It was very time-consuming to get those uncertainties but a lot of factors were varied with many, many, many runs across the range of possibilities, short of getting into the full Basian of all the parameters and things that we know affect the population. What we have here in amberjack is kind of the basics. Maybe it is fair; maybe this becomes sort of middle of the road. Maybe it is not good; maybe this more of a kind-of-the-middle-of-the-road treatment. The big things are addressed in kind of a basic way.

Dr. Barbieri: Well, also, there this issue of addressing the uncertainty we know, defining the right methodology, the right methodological approach to address the uncertainties that we know, but for some species we have a higher expectation of having unknown; that gets lumped into some error in the model, but we know – and it is cumulative, like you said, over time, and it gets

lumped into that error term. So, I'm saying somehow I think we should capture those as well or just create a system that could help us express that.

Dr. Williams: Yes, I think not to become a splitter, but there is – and I don't want to split it. I am just suggesting that this characterization of uncertainty completeness has many components to it and not just the actual statistical treatment of uncertainty but also potential biases like Luiz mentioned.

Amberjack does have the species ID problem, so that becomes a factor in that sort of evaluation of, well, how complete was the uncertainty characterized if we know that there is a potential bias in certain things. Yes, all those things play in. That's why I don't think we will ever come with a nice, clean quantitative scale upon which we can put a species on that scale definitively. I think we are going to have just something very crude like John threw out; you know, characterization of uncertainty was excellent, good, fair, poor, something like that. We will just have to throw it into one of those categories.

Dr. Belcher: And I guess the thing, too, what concerns me about doing it that way is somewhere we're relying on either it is going to be our group assessment of that or is it going to come out of the review portion of that assessment? How best do we do that? My concern is if we do it, we'll end up backed up into a corner on what are we making that call based on; and as people change out that call might get tougher or it might get easier. People might not care and say, "It was very good; I don't care." So at least if comes out of the review, the review might at least take some of that weight off of us.

Dr. Williams: Yes, and I would say we should shift it to the review. After all, we get to look at the terms of reference for the SEDAR workshops, so this is where we can stick it in there and make that part of the SEDAR process.

Dr. Neer: I don't think you should rely totally on the reviewers because at least this group has some continuity over time even as people change. The review panels change every single time. Even in the three or four SEDARs that I have done – I'm sure John can speak to this more completely than I did – they pick up on different things – everytime it is an entirely different group of people – on what they consider important.

One time it will be totally glossed over and another with a different set of reviewers. So, if you kick it back to the reviewers you are going to have, I would probably guess, very little if no consistency. I am not saying you shouldn't ask for their interpretation of how they think that is, but it is going to be very tricky to use that as, well, they said this one was good and this next reviewer said they didn't characterize it, a different set of people. At least this group, even though individuals will change, there is going to be hopefully some consistency over time. I would be real afraid of just kicking it back to the reviewers and relaying on that.

Dr. Belcher: Well, I think that problem is going to lie at every level. I don't think it is just going to be – well, my thought was just the fact that, again, as we start making more and more decisions, we're getting called to task on decisions that we're putting forward, and we have to be sound on how our decisions are being made.

And while we're talking about a qualitative assessment, I still think somehow we need to have some sort of boundary for defining that, because somebody is going to ask us, well, what is your justification for making that call? My gut – well, not a good enough answer. Somewhere we have got to either define the box of how you're going to scale it from one to five or whatever, but I would think it would fall at any level, whether it is their view or it's here.

Dr. Crosson: Well, I was just going to say that is a good reason to have SSC members involved in the review process at the SEDAR. We got to this question with the Spanish and vermilion, and it was very useful for Marcel and I to be there and listening and asking them questions without steering them in any particular direction. I think that will provide some continuity. I agree with you, though, you're going to have different reviewers at every level.

Dr. Barbieri: But to Julie's point, it is in the fact that we discussed incorporating some this into the terms of reference and that is going to guide them to use some sort of criteria. Then after their recommendations, we can agree or disagree and we can discuss it as a group. I would rather benefit from having two sets of eyeballs.

Mr. Carmichael: Definitely. One of the reasons I would not want, say, to have that group of reviewers establish, say, a rating for the uncertainty that you are then going to act on is that what they consider appropriate treatment of uncertainty may be very different than what those of you working on assessments in this region and in the United States consider appropriate treatment of uncertainty.

Someone who is from the Pacific Halibut Commission and has had their data sources to work with, they may look at how we treat uncertainty and the best that we could ever do, they would say, "Oh, that doesn't even begin to measure up." You know, you have someone with a lot of familiarity with ecosystem-style modeling and they would be like you've got a multi-species fishery and you're just looking at a single-species assessment; forget it. So, I think get the comment from them but leave all the rating in the hands of the SSC.

I want to comment on the one Scott made. I know this is a broken record coming from these SEDAR people, but that's exactly the reason why SEDAR is structured to work with the SSC and never intended to be something that functions outside of the SSC. It seems to be kind of a tendency as something sort of gets legs under it and becomes functioning in its own right, then there is like, oh, well, you know, SEDAR is running the SSC and just sort of get the products when it comes in and we don't have to really pay that much attention of what goes in and all the work going with it.

But everyone knows who has been there that is not how it is supposed to be. We definitely need the SSC at every step of the way, and they're going to have a big role to play as we're looking at what we're putting together here, even a bigger role and trying to help. You know, SSC members put all this stuff into perspective as you go through this exercise with, say, a new assessed stock.

When you start talking about what the biological statistics, well, you're going to think back what did the data workshop talk about, what life histories were brought up? That's why when Erik

mentioned that species ID problem I penciled in here Level 2, the biological stuff, so maybe we will end up accounting for that.

We go through the characterization of uncertainty and say, well, you're okay, and then when we get down to bio, well, you know, there was a species ID issue, so then you know that is going to carry over into the next year. It sounds like there was agreement for that as something to be added to the SEDAR Terms of Reference for the reviewers to give some comment on how well the uncertainty is characterized, but leave passing judgment on it for the SSC?

Dr. Williams: Or perhaps a better way to have the SEDAR process help us out or have the SEDAR reviewers help us out is have them tell us with the some of major uncertainties that were not accounted for. That is something they can easily do and then we can look at that list and realize for ourselves how important those things are or aren't.

Dr. Belcher: I think that would almost be a better way for us to make that call because then that way if the laundry list is a hundred miles long, we have a pretty good idea of how far it missed the mark, and we could easily make that assessment.

Mr. Carmichael: I put this in there because we don't really know how this is going to pan out in the end, but I think the bottom line is the increased rating for uncertainty, so the higher that is the better the uncertainty is addressed, so less buffer. I used "buffer" in lieu of a better word, but the idea being the buffer between the overfishing level of harvest, the yield at Fmsy or MFMT, whatever it ended up being, and where you would set the ABC where the SSC recommends could be caught. There is really kind of a buffer that we're working out. I was trying to get out of the thing – you know, I didn't want to say less precaution necessarily.

Dr. Barbieri: In general, yes, but obviously the other tiers because then the biological and the stock status and the other things are going to then be weighed in. I think that is the advantage of those dimensions like you put. It becomes sort of like a multi-dimensional space that you're dealing with and these things can be seen from different perspectives.

Mr. Carmichael: It is going to be kind of a series of things; this is a little more, this is a little less, and you're going to get kind of some pluses and minuses maybe that in the end come up with some way to objectively get to the final value. Maybe by Wednesday we will be talking about how we objectively tally up all of these pluses and minuses.

Dr. Barbieri: John, you're looking for criteria there? Well, I would say life history pattern or life history population dynamics pattern, such as longevity, age at sexual maturity, reproductive mode is gonacharistic or –

Mr. Carmichael: Potential?

Dr. Barbieri: Right. Perhaps we also want to think about – and in terms of this biological – some sort of like a dimensional catchability, in a way. I mean does it form spawning aggregations that are predictive in time and space? Is this a very easy-to-catch species that –

Dr. Belcher: Susceptibility.

Dr. Barbieri: Susceptibility type.

Dr. Belcher: Any comments on what John has put up?

Mr. Carmichael: What do we do with the life history or reproduction kind of stuff? That would be another rating, more buffer or less buffer kind of thing?

Dr. Williams: Doesn't all that just fit into some biological susceptibility or biological adjustment?

Dr. Neer: Also for the biological you can put something about aging ease or aging ability, the ability to get age information out of the fish; is it harder or easy to get; are there a lot a problems on species; other ones are easy, so basically how well do you trust the age data, which goes under biological as opposed to assessment. You're using it under assessment, but all these things go under uncertainty; I mean, the biological potential estimates of numbers and how well these things get characterized.

Dr. Williams: Right, and that is the key is you have got to keep in mind how well these things might have been treated in the assessment model already; like, oftentimes aging errors incorporated into a model.

Dr. Reichert: That is exactly what I was going to say because it looks like what we're doing is running through the list of terms of reference for a SEDAR stock assessment. I think it would be good to say, okay, how can we catch this earlier or at some point in the stock assessment process or with the productivity/susceptibility analysis, for instance?

Is that a way to approach this in terms of how vulnerable is a species or stock rather than having to go through every single of these steps in this process? If we're talking about the multiple species or all the species that we're talking about, how feasible is it that we can actually go through all of these different steps? The next step would be going through the fisheries and what aspects and what components do we need to consider. I just want to avoid that we are getting a list of dozens or hundreds of lists that we need to consider.

Dr. Neer: And that comes real quick back to this is where I was kind of confused is that if you're a Tier 1 up at the beginning where you have a full assessment and you have done – and maybe I'm just misinterpreting what we're doing, but like if we have a Tier 1 or best level or whatever, we have done the full assessment and we have all the estimates that we need, we have all the probability stuff, then would we even need to go through and look at this stuff or do the individual biological information come under species where we don't have a full assessment and we need to look at alternative information? I guess that's my kind of question of how you're getting at it, because, like Erik said, we're sort of assuming if we have a full-blown assessment, some of these things have been dealt with during the assessment process; or, am I misunderstanding?

Dr. Barbieri: No, they have, but in terms of this susceptibility or vulnerability they may not have. When you talk about a short-lived gonacharistic species versus a long-lived hermaphroditic; I mean we have the statistical catch-at-age assessment for both of those – you know, that happen to be data rich, relatively speaking, but still we might want to treat them differently in terms of ABCs and ACLs.

What I thought, to address Marcel's questions, what Erik had brought up in terms of that matrix, it would be just an easy way to then, first, to assign something to that matrix just to facilitate how we would just go through this really fast..

Ms. Lange: Well, my understanding – and maybe that is what you were saying, Julie – is that each of these three levels apply to every control rule category; so whether it is a Category 1 where you have got reliable estimates of everything, you still have the issues of how good the assessments were, how much uncertainty there was, what the biological issues were, what the stock status is relative to how uncertainty – you know, where within the tier and how much buffer you're talking about and John was talking about. Even down at the catch level, if you only have the lowest level or you just have catch data and some life history information, then even more caution is necessary.

Mr. Carmichael: We definitely don't want to revisit all the data workshop terms of reference if we want to go from that to how do you interpret those findings in light of doing an ABC. I was kind of thinking what is an example here of where like maybe you would take the susceptibility and such into account when you set your ABC buffer?

Maybe red snapper versus red porgy, you have both assessments available and you have estimates of Fmsy and everything, but one is a long-lived fish, slower growing; the other is a shorter-lived fish, faster growing; you know, they live hard versus live slow kind of analogy, those two fish are kind of different.

Would red porgy have different susceptibility issues, behavioral catchability and vulnerability issues than maybe something like a red snapper? Just try to keep them similar with something we have actually assessed. Probably they do, so there is probably a reason to go through this. I just want to make sure we focus on what are the concepts the SSC should consider and then attempt to rank; so biological susceptibility being sort of its way of life and then its behavioral stuff.

Its catchability and vulnerability and how it interacts with the fishery would be two things to consider in this area along with the assessment issues; is there a species ID problem; is there something biological that adds additional assessment uncertainty that you should note here?

Dr. Belcher: To me there is nothing precluding us from applying – I mean, and again, just because it is the only answer we out there, but the LENFEST susceptibility plot to any species. It doesn't necessarily just have to be data poor; it can to every species we have to at least get that supplemental point to use.

I mean at least that was my understanding from that meeting was Rick Methot said that there was going to be something that was going to enhance what was a first throw-out; that there was acknowledgment of some of the limitations to it, but there would be further discussion and followup to expand it.

Dr. Barbieri: Well, not to belabor on this point of the biological criteria, but one thing that I was thinking about that I think makes this different than simply the review workshop looking at the terms of reference is that everything that we are doing here is to be seen on a relative scale. We're looking at species relative to each other, and our single-species assessments and the reviews are really all self-contained in a way; you know, ways of looking at that species and the outcomes of that assessment. I don't think they are looking at the relative values there from one species or another, so I think this adds, from our perspective, a little more analytical capability.

Mr. Carmichael: Any other thoughts on things to add, placeholders under the biological arena?

Dr. Williams: Just for completeness, I would go ahead and add under there somewhere that results from a productivity/susceptibility analysis could apply here as well, just to make sure we get all our ideas on this page.

Mr. Carmichael: I was thinking that so we don't lose everything; run that by me again.

Dr. Williams: Somewhere there put the results from a productivity/susceptibility analysis also could be used for determining this level.

Mr. Carmichael: Does that bring us to Level 3; status considerations?

Dr. Williams: Well, this is where we could fold in that concept of a threshold population size. In other words, certainly we're going to want to treat a species that is not overfished and not overfishing differently from one that is overfishing and overfished, but then even beyond that there is probably some level below which we really want to take drastic action because the population is really low.

Dr. Barbieri: Erik, I agree, and perhaps you have the opportunity to improve a little bit on the west coast 40/10 rule. Now that we have gone through Level 2, the biological characteristics, then the vulnerability/susceptibility/productivity of the stock provides us some guidance on – you know, some species we're going to have to have the bar in terms of their threshold be a little higher because we cannot let them get to the same level of the species that are a little more productive and could rebound.

Dr. Williams: The other category we will have to add to this level is if the stock status is unknown and how would we treat that then?

Dr. Belcher: The unknown I think we should probably quantify because of the type of situation where we know nothing about the biomass but we have some indication of whether overfishing is occurring, right? We have put that forward with a couple of assessments. I mean when we don't have a complete unknown.

We have put forward where we have said that we couldn't say anything relative to overfished status, but we were saying with some sort of confidence whether or not we thought overfishing was occurring or we were moving towards that.

Mr. Carmichael: It is just hard to visualize what you do when you get to this point; what you would do with these.

Dr. Barbieri: Erik, to your point about the interacting dimensions, here is something that to some extent we will have to be interacting with the previous one in a way in terms of less or more buffer. I wouldn't know offhand how to relate them.

Mr. Carmichael: You start with ABC equals OFL and then you go up and down and up and down and up and down as you go. I wonder if it will function in some practical sense in that way as you go through each of these steps. Okay, I'm starting with ABC equals OFL; I have got a top assessment; I have got all of my information I need; so there is no reason to move.

Oh, wait, I didn't account for uncertainty but in a "fair" sense, so I go down five clicks. Now I have reset my baseline to there, and then I go through this stuff and I go, oh, well, I have this species ID problem, so then I go down a couple more clicks. Well, my status is pretty good, though, so I stay the same or do I say, well, it is not overfished and overfishing so I can give it a little leeway, and I can move back up toward the neutral point a little bit.

Dr. Williams: Right, we could view these scales both ways. It could go in both directions or it could just be strictly cumulative as you're always just going in one direction, but zero, obviously making no step at all, would be a big part of all of these. We do want to avoid the property of having too much cumulative uncertainty resulting in a gigantic buffer that is unreasonable.

But, again, that's where I say let's not focus on the numbers because what we will do in the end is after we have laid out this framework – at least this is my thinking – is think about what is the total range of buffers we're really thinking about so that we know what the sort of min and max are going to be and then it is just a matter of fitting this whole thing together so that we don't exceed our own min or max.

Dr. Barbieri: Well, in a way it may seem irrelevant, but I wonder if we want to have Level 2 be the status. I mean if this is linear, do we want to flip-flop to Level 2 and Level 3 to have the status before the biological – it just might help us in a linear sequence move to that thinking.

Dr. Neer: That is also a good point because if you go and the status comes up as unknown, you might then have to put more consideration on what you do know in terms of biological characteristics, catch and stuff; whereas, if you do that first, you come up with all this great stuff, but the status is still unknown.

Mr. Carmichael: And I put there "trump on that" below "threshold population" because I have the feeling that if you chose that and you recommended that, all bets are off at that point; you're done. If you say 5 percent and there is no directed harvest; and you went through Step One and

you have the assessment, you have the status, and here is where my population is; there is no need to go any further.

There is no need for a further buffer. You say that there is none until you get above that. Think about these things that have these global impacts that are going to bring you to a stop. Maybe we should visualize this as like a flow chart kind of thing. If you get to that box, you immediately go to jail, do not pass go.

Dr. Belcher: Further comments?

Mr. Carmichael: That's the end; there is one stock.

Ms. Coakley: If you reverse those tiers like you said so that you've got Tier 2 as stock status, for all of those things in Tier 3 couldn't you consider something like a utility function where you come up with some sort of method? The utility function, you can either pull together quantitative or qualitative measures for a lot of those such as what is the risk of the stock crashing, what is some level of risk associated with unknown life history.

A lot of times the problem isn't just that, you know, it is a protooncogenous hermaphrodite; it is that you don't understand the actual mortality and all those things and come up with some sort of way of combining that in that third tier in a function that you can use to somehow scale how you move down from that.

It is just an idea as you just reverse the way you structured those tiers that popped into my head that those are approaches they use in like MSE or MPE techniques, other places, but they're methods to pull all different types of parameters together. Just a thought.

Dr. Belcher: That's a good point.

Dr. Barbieri: Yes, I agree, but I'm not sure we're going to be able to do this during this. It just becomes then – it's almost like a straight risk analysis type of process that you're going through.

Dr. Williams: I envision, once we set this up, those sort of things are going to naturally develop anyway as a response to this. For instance, maybe a productivity/susceptibility analysis will be our standard tool for evaluating Level 2 from now on, who knows, but we don't know yet, but until we have established those sort of standard protocols we keep it generic at this point.

Mr. Carmichael: It would work; you know, the first level is pretty cut and dried, assessment availability; you kind of have it or you don't. There is a little wiggle in their judgment with the uncertainty. That may work itself out over time as we learn more. The status, how you deal with it's overfished versus it's overfishing, that could be pretty cut and dried, I think. You could come up with rules that work across the board given the status. Then this other one is all the subjective things becomes your risk analysis component, and that opens up a whole area of tools for evaluating it. Wow!

Dr. Belcher: His problem is all that wiggle stuff.

Mr. Carmichael: And this is an assessed fish, so a whole different ballgame.

Dr. Belcher: Well, since we seem to be at a pretty good breaking point, we will go ahead and go to lunch.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Monday afternoon, March 2, 2009, and was called to order at 1:30 o'clock p.m. by Chairman Carolyn Belcher.

Dr. Belcher: We're getting ready to pick up where we left off. We basically went through an example, sort of, with amberjack. It carried us through Levels 1, 2 and 3 as far as how we want to look at assessing these animals. The suggestion was made to pick another one maybe not so easy. Let's think of some ideas.

Unfortunately all I have is the list of 17 species that we have got, the tilefish, snowy grouper, speckled hind, warsaw grouper, black grouper, black sea bass, gag, red grouper, vermilion snapper and red snapper. Alex, do you have a favorite on the list?

Mr. Chester: Well, I was thinking there are a couple of special cases on there, warsaw and is Nassau on there as well, the prohibited species. We might want to set those aside for a moment because they are such special cases and probably are going to be very difficult to deal with. I would be okay with something like speckled hind or one of the other less well-known species.

Dr. Belcher: Any objections from anybody on looking at speckled hind? John has e-mailed a copy of what we have so far.

Mr. Carmichael: What does speckled hind have going for it? Let's start at the top. We don't have estimates of Fmsy and Bmsy. Do we have F or Fmsy or Bmsy? Apparently we did or we wouldn't know that it is overfishing, but that is an old assessment.

Dr. Williams: Yes, I think it fits into three because we used proxies. Frankly, it predates me so Alex is the best source of information on this one.

Mr. Carmichael: Availability wise it is a Tier 3. We have proxies for – barring judgment on whatever happened however many years ago, they were used to determine status back then, so they were at least considered reliable by some version of the SSC; doubting the information available to second guess them.

Mr. Chester: There is a difference there in that I don't believe there was ever really, well, a definition of what an assessment is, but it certainly didn't go through what we would consider to be even a minimal assessment here now. I think it was based on catch-curve analysis and yield per recruit probably at most in those days. That's almost even a lower level than three, in my estimation.

Mr. Carmichael: Does that come into play perhaps in uncertainty because you have very little treatment of uncertainty?

Dr. Williams: Yes, I think again that Tier 1 is what information do we have that we based management on? In that case we had a proxy. Granted, yes, I agree with you, it seems odd that it is a Tier 3, but, again, let's keep in mind what that tier is about. It is really about what we had. In this case we had a proxy, but, yes, you're right, the uncertainty – there was no uncertainty analysis. It was just basically a catch-curve analysis so you have none essentially as far as uncertainty, as far as characterizing it.

Mr. Carmichael: So the tiers here, in a way, are really yes or no. You have it or you don't; it's reliable or it's not. There is not a lot of judgment that goes into that. We don't have a tier for – well, I have a proxy msy and Bmsy but I don't really trust them. If you didn't trust them, you would kick it down to F. If you didn't trust it, you would always kick it down to the next tier.

Dr. Williams: Yes, maybe we could rid of the word "reliable", but you're right, essentially it is sort of a black and white.

Dr. Reichert: Or add another one with "unreliable".

Dr. Williams: No, I think "unreliable" means then either you used the proxy or you didn't. I think John pointed out if it is not sufficient to be used, then you don't have a proxy. Now the uncertainty certainly play into that, too. If you used it but you really were hesitant or there was a lot of uncertainty, well, that comes into the uncertainty part of it.

Dr. Belcher: What year did we say this run again; when was speckled hind run through?

Dr. Williams: Yes, I don't know if that was – that even predates that trends report, I think, so, yes, it had to be like mid or early nineties.

Dr. Belcher: So should the timing of the assessment figure in, too, in that situation. I know we're saying we're not really sure that it is an assessment in the true sense of what we're deeming assessment, but based on its being run through some sort of process to determine what the status of the stock was, that probably does need to come into consideration because we really don't know the current number. I mean the best we could is forecast off of that model and say what we think is happening now, but we really don't know, either.

Dr. Barbieri: Yes, I think this is something that we need to take into account, to some extent capture the fact that we have fairly recent assessments. Those estimates would give us a much better idea of the current status of the stock or the most recent status of the stock versus something that was assessed five years ago and may or may not reflect current conditions.

Dr. Williams: And I would almost suggest we might need another level because that is a very important tenet in uncertainty. Time does equal more uncertainty in almost every situation.

Mr. Chester: And another issue in these assessments that were done early on is – I don't want to say there was no peer review, but the level of peer review they received was much lower than under current assessments.

Mr. Carmichael: Should we have a tier that addresses sort of the current state of affairs where you have thorough assessments that have undergone peer review versus something that accounts for the older assessments that you're not as certain what went into them or how robust it was but you don't necessary want to open that can of worms to try and second guess all of that and taking the information as it was given back however many years ago.

Dr. Barbieri: Can you say that again?

Mr. Carmichael: I was wondering is there some way that there should be a tier that reflects the recent up-to-date peer-reviewed assessments as opposed to this group of them that had assessments, but they're pretty old and people sitting on the SSC now don't really know a lot about them.

We have discussed this somewhat in the past and the SSC comments have been along the lines of not going in to second judge what was said about that assessment however many years ago or at least when those assessments were put into the status criteria and the stock status indicators, and the agency determined that a status existed for them. The SSC hasn't wanted to second guess that, essentially, historical determination.

Dr. Barbieri: Well, I can understand that conceptually. However, I think that to the point that Erik made, those will be almost exclusively older assessment, and that will put them in a category by themselves of older assessments; that even if those assessments were very data rich and very complete analysis, we will still be questioning our ability to move forward without an update.

Dr. Belcher: Would you look to something else, then? I mean would that be the idea if this case is the best we could is look at a trending catch or CPUE or something as surrogate; to me to try to move forward if there is an overfished/overfishing definition from before and that opens up the whole can of worms of putting together a rebuild, but we don't have data on which to base a rebuild, that kind of puts us back a little bit.

So to me you would almost have to put to a level to say, well, what do we have that is at least current that will get us that something. I almost think that this would, again, put us back into that category of, like you're saying, shuffling down tiers. Maybe at this point it is a 10- or 15-year-old assessment and our ability to forecast off of that assessment is questionable at best, almost to the point that the uncertainty is too high to want to make a recommendation off of, so at that point do we then punt down to an even level where we're just looking at a catch stream or CPUE stream?

Dr. Barbieri: Somehow we're going to have to find a process here to accommodate those types of situations because we're going to have species that are actually relatively data rich for which we are able to – it is just like the situation that is coming up black and red grouper; that we have an assessment coming up because back in June we made that decision as an SSC to put them on the SEDAR schedule.

We switched from two other species that we didn't think were in urgent need for an assessment as those two. There are some species that are data rich for which we could do a more complete analysis. I don't know how to resolve it but in a way to then just go straight to looking at just landings –

Dr. Belcher: Well, I guess my point was that with red and black we had exactly what you're talking about. You have a more data-rich species so the availability to put it through a SEDAR process, which it hasn't been exposed to, is something that we asked for. We could have done the same thing relative to speckled hind and warsaw, but because of the lack of data that we had we were actually using better inference to determine what catch levels we had.

So at that point do we have the data to say that we could put speckled hind through a SEDAR process; is it something we could request, get bumped into a schedule and something get bumped back. I mean that is the question. I see what you're saying, but at this point my understanding, from what our decisions were back in June for speckled, that wouldn't have been the case because we really don't have the data.

Dr. Barbieri: Right, and to some extent even though we're trying to come up with a very objective and structured rationale and framework procedurally on how to handle this, I think we're going to always have to leave some room for us to use discretion on how we will proceed with some of these species.

There is a situation, like you said, about speckled hind and warsaw that even if we tried to do a SEDAR assessment now, we probably wouldn't be able to do as complex an assessment. In that case we just say, okay, well, looking at the data available, let's make a decision as a body. In the situation of other species, when we actually know they're a relatively data-rich species, it is just a matter of not having been scheduled for an assessment, I think we need to treat those differently.

Dr. Belcher: Yes, I totally agree with that, but that is what I was just saying is I think we almost have to have a trigger under – we have an older assessment. Okay, the question is do we have data that is rich enough that we could say we need to bump it into this process or do we still have the same issue that was probably evident even back then that we're limited in our datasets, so therefore we may not be able to even say that we could bump into the process and we might actually have to put and drop back to the tiers because our process is different now. We can't operate on that 15-year-old assessment and continue forward with it. That was all I was thinking with that.

Mr. Nelson: Just to aid and not trying to reinvent the wheel over and over, this has been thought of and will be coming out on one of these – something similar is going to be coming out, and it's possible to framework the age of an assessment in relation to either the max age or age at recruitment for these different stocks.

For instance, if you have a stock that its life history, you know, max age is at four years and you have a four-year-old assessment, that assessment is essentially useless. However, if you have like on the west coast a rockfish species that lives 150 years, a four-year-old assessment is

probably going to contain significant data. So frameworking this question in some sort of relationship of the age of the assessment and have it be a function of the quality of that assessment because of the age, you know, and telling you what the biomass is at at that time is one way to get around this or to incorporate this.

Dr. Barbieri: Mark, I understand that approach in a species with a longer generation time, more age classes in the fishery, will need assessments over longer periods of time. That is true, but at the same time in our case I think there are situations when things could have happened in terms of changes in exploitation that don't really have to do with the biology of species or some episodic event that happened; you know, hurricanes, you name it, that could change exploitation rates. It would be difficult for us to proceed without incorporating that information. Again, I don't have an answer; I'm just saying this I think is complicated.

Mr. Nelson: I agree with you completely and that is an excellent fact that the SSC can bring to the attention of the council and the science center requesting more data or an additional assessment could be done to address – you know, by stating that we no longer have confidence in this assessment or we feel that this assessment is limited, that is one way of sort of like addressing the fact that there is uncertainty in your estimate and stepping forward towards addressing that.

Mr. Carmichael: So the age of the assessment affects the level of the buffer; there seems to be agreement for that. You may be able to quantify this and you could do that based on the age of recruitment or the max age of the fish to get an idea of a long-lived fish getting a little more content that is available over a longer period of time as opposed to something that all your fish may be a projection. That's kind of the critical part there, I guess.

Dr. Williams: But an issue that was sort of talked a little bit here is does an assessment ever get old enough to the point where it is no longer even usable?

Dr. Belcher: My concern would be with the fact that so many – well, I shouldn't so many, but so far the examples of everything that has gone to litigation, if there is not a peer review involved in it, if you were getting farmed out for a peer review, I don't know if that – I almost feel like in some ways, too, the age issue is also a function of whether it has been – how it has been best vetted through the system.

I mean I almost feel like everything is predated SEDAR. I mean that is about the only critical mass that seems to be a problem with it now is whether it has been through a SEDAR process or at least has had some sort of independent review of the documentation.

Mr. Carmichael: Does an assessment expire? Obviously it has to be yes. At some point it has to become completely not meaningful to us today. If we had an assessment of goliath grouper from 1865, we would probably look at it today and said the information is utterly unusable. So, yes, it has to expire.

When it expires; would you think the speckled hind assessment, if something goes back to the early nineties and we're in the late 00s, it's probably darned close to that point, but to make that

call I think the SSC might have to look at the age of the fish, age of recruitment, methods employed, perhaps. It would take some work to make essentially a judgment call.

But if you decided that now, though, we could handle that, right, because if it is expired, then you're saying I don't have Fmsy and Bmsy. All I have is I kick down levels until I find what I trust, so I think our framework is flexible enough to deal with that. We just have to make sure that you consider the age of that; so it means that when you consider is my Fmsy reliable, I have to consider how long ago was it calculated.

Dr. Crosson: The idea that it would have no value at all means it is not even worth looking at, and I can't imagine having any stock assessment from any time period and saying I don't even want to look at that; it has absolutely no relevance to what we're doing. I don't think that would be the case.

Mr. Carmichael: But its reliability stamp may expire. You may say, yes, I had it; and when I do a new one, it would be informative to see what they learned a hundred years ago, but it is probably not relevant today and its Fmsy may not be reliable, but it maybe still have in the current time catch.

Dr. Williams: Right, in the sense that reliability also carries with it some sort of legal thing, too, potentially.

Dr. Reichert: And also that goes back to something we have discussed earlier whether then it should go from a reliable proxy to number four or maybe even number five, six or seven. Erik said earlier, well, we have the proxies and the rest go from there. While I think we are more moving towards, then maybe we should move it to a different category. So, what do we do in this example with speckled hind?

Dr. Williams: I don't know. For this case, just for this hypothetical situation, which is still sort of hypothetical, let's assume that we're still going to use those estimates and let's move on.

Dr. Belcher: So now we have to look at determination of stock status? What was it labeled as relative to the assessment?

Mr. Carmichael: Overfished and overfishing, as I recall. That would be even more buffer required. That's all we need to know, right? Perhaps we should ask whether or not we have to look at the biomass and see if it's above the threshold level.

Dr. Williams: Right, and this gets into other things. Again, this is a weird situation because it hasn't been through SEDAR or anything, but I could see where you might have an assessment, if we're going to call it this, let's say somebody redid the catch-curve analysis for speckled hind and then you had right next to it a time series of CPUE that showed a drop of 95 percent over the time series, well, you have a very strong indication that stock status is extremely low, but you don't have a formal declaration of what that stock status is.

There is some gray area there that we need to consider. I don't know if you call it anecdotal at this point, but a CPUE time series could be considered in a sense a stock status indicator. And, if you look at the one CPUE indicator we have for speckled hind, it shows an over 90 percent if not 99 percent decline in that species over the duration of the headboat survey.

Something that keeps running through my head – this might not be the time to bring it up or discuss it, but I bring it up for maybe to be tabled until later – is this idea that there are these whole mess of species out there that we do not have a formal assessment for that somebody is going to have to do some type of analysis for.

The question is, is the SSC going to do any of that analysis or not? I mean I answer my own question in that, no, I don't think we should, we're purely a review body, but there is then this existing backlog of analyses that are going to have to be done that involve just putting together catch streams even and computing averages from that and looking at CPUE indices and that sort of stuff.

At some point we need to sort of get our heads together and sort of ring an alarm bell to whoever needs to listen, particularly the Science Center, probably, and say, look, this work is going to have to get done eventually for us to do our job of setting ABCs. Anyway, that is sort of a very tangent issue.

Mr. Carmichael: One of the things I have pondered is should we have a SEDAR-style, say, data workshop to put together catch streams and CPUE for the stocks that we know we are going to have to deal with, but we also know we're not going to have an assessment, so maybe two of them to get through clumps of stocks.

Maybe we do one devoted to snapper grouper and one devoted to the other species the council manages spaced out over a couple of weeks with heavy, heavy SSC involvement, but also the people who know these data sources and can do it. I think that might be the only way we can get through it because do we really want one person or a couple of people just sitting down and just cranking this out without the opportunity to sit down and think about what these pieces of information mean.

And when we get there, the next step would be, then – let's say we go through that and we get this idea, we get some catch streams, and you have this record of how the fishery responded and you're trying to draw insight about the population; should we have some opportunity where there is interaction with the fishermen in that particular fishery to try and say, well, here is the catch stream, what do you make of this, what happened?

Say there is a big drop at some point; would the SSC benefit from being able to sit down with those guys and say what was the cause of that, because maybe we saw a regulation here and regulation there, but you see other things, and it would be a chance to get into like the socio-economic stuff that Scott mentioned about bringing in this kind of information that helps you interpret. So I kind of see this as two stages, and maybe we need that interpretative step where we reach out to the fishermen to help get the insight. Does everyone agree or are we crazy?

Dr. Belcher: I think it sounds like a good idea.

Mr. Carmichael: I think it could work as long as it was clear to reach out to the advisory panels or something and say, you know, the purpose of this is just to comment on the trends that are going on and how they might reflect on what you've done in the fishery and what you perceive as to what was happening in the population at that time; separate that out from when you then sit down armed with the catch trends, armed with whatever comes out of that and decide to set your ACLs using whatever information is at hand. Keep those two parts distinct; all of which costs time and money.

Dr. Crosson: John, this is strictly within the SEDAR process you're visualizing this or for the species that – I know that you and Kate Quigley have been talking about the golden crab situation and all of that.

Mr. Carmichael: Well, I think it is strictly within the SEDAR/South Atlantic Council given that in my mind the councils and SEDAR kind of run together. I think we would be using that framework with a lot of involvement from the council as opposed to formal SEDAR staff, much as we do the updates which are under a SEDAR umbrella, but the council is responsible for arranging those and setting those up and the SSC participates, and the SSC has a chair in all things of that nature.

I think it would be nice to do that with the SSC sort of taking the role; you know, follow the SEDAR approach of bringing in all these different people, but it would be mainly under the umbrella of an individual council. Then that gives each council the opportunity to pursue it without tapping into the resources that are already being used for SEDAR updates and benchmarks and everything else. Better change that it would happen.

Dr. Reichert: Is the SSC going to look at the suite of species that would be included in the workshop?

Mr. Carmichael: You look at everything. I think so; I think view it as if this is something you guys think you want to do, let's plan to talk about what and when and how and who does what and what you ask for and information you would like to see.

Dr. Crosson: Again, Kate Quigley had e-mailed me about the golden crab fishermen wanting to talk to some of us perhaps on the idea of how to interpret some of the landings' data that they have, but in the context of not wanting to drag management into it too much, but I know there is some interest in developing an ITQ or LAPP for this fishery from them. What you're visualizing here is along those lines; it is within the South Atlantic Framework.

Mr. Carmichael: I think what I'm visualizing is an appropriate way of getting their input into the SSC as opposed to having the SSC subject to essentially fishermen or others with a potential interest in a situation coming in when you're trying to set an ACL and trying to tell you why the OFL or an ABC should be higher or lower or what have you.

I'm trying to find a way to get the insight from those guys based on what these golden crab and wreckfish fishermen have said. I am trying to think what is the appropriate way to bring in that insight? Ideally, if you're doing a stock assessment, in the SEDAR approach we have the perfect situation to use that kind of anecdotal information, is understand what is going on in the data trends.

So I'm looking into that to say, all right, can we do something like that but apply it to a whole bunch of species. We had a workshop at the office with the golden tilefish fishermen, and it was a handful of fishermen that were the bulk of the fishery. They had a lot of insight into the data trends and we learned a lot from talking to those guys.

I mean I realize if you could get the group of fishermen who are responsible for the bulk of the landings and that have a sufficient history, you're going to really understand a lot of those landings' trends and what to make of them. If we can tap into that for a number of species, I think it would be very effective. I was thinking back to the June meeting and you guys were looking at landings' trends and CPUE trends it is just like what do I make of this?

A lot of us sitting around this table, we don't have knowledge of speckled hind, for a fishery that might have been heavily prosecuted 20 or 30 years ago. What do we make of those trends, but we can understand the data if we get some people to help us understand the trends. I think those guys are heading in the right direction to try and want to bring their information into the SSC, and we should try to find the right framework to make that work.

Dr. Reichert: I think we had that same experience at the catchability workshop where I learned a ton just because of the interaction with the fishermen.

Dr. Crosson: Well, even just having Ben Hartig there when we were discussing Spanish mackerel and him talking about – I mean you have all this data and you have all of these numbers in front of you, but he said, "Well, this is exactly where these guys used to go catch the fish and this is how they did it. This is how many people roughly were on the boats and how many folks we knew."

You're talking about something from the fifties and the sixties that is quite a ways back, and he was able to give a very strong visual picture, but it was inside the context of the SEDAR proper and so that is one view, which is going to be necessarily parochial. I understand exactly where John is coming from because you don't want to have just – I mean even somebody who has the best intentions and is not trying to sell a particular agenda is still going to have a view that is just based off of what they have seen. It is not going to be particularly objective. I think that is what John is shooting for, so, good.

Mr. Carmichael: Catch trends are pretty straightforward. I just tapped that right out of the database – well, except for species ID and all of that craziness that goes on; and, again, what better way to find out about those problems and how important they are than having the fishermen in there who actually report the data, which has really been insightful with the work we did down in the Caribbean.

And you talk to those fishermen and you start understanding the difference between what they catch versus what they report on data sheets. It is eye opening in all situations. So, yes, I think maybe it's just get the basic data as reported in the datasets and go to them and say so now what can we make of this.

Otherwise, once you start applying our judgments to it, mine would be different from Erik, different from yours, different from David who is going to probably do a TIP analysis or something, whoever taps the ALS. This is the data at face value for this workshop and then tweak it all right there. CPUE is tougher, though, because that is such a can of worms. Can we get anything kind of efficient in terms of CPUE that doesn't require a ton of analysis that you could do for 70 species?

Dr. Williams: Yes, I think we have done enough of them now that we know some of the basic techniques that you could sort of apply across the board and hope for little error for some species but it would be robust enough to just sort of apply across the board.

Mr. Carmichael: I guess you would do it species and gear based as one big improvement right there over what we have looked at in the past; you know, gears have such a big impact. Is this something that could be feasibly done in the next six months or a year?
Dr. Williams: Where are you fitting this in the SEDAR schedule?

Mr. Carmichael: It just gets squeezed in wherever. I think if the council can pull it off, it probably would be best. I know the Beaufort team is rather busy for this year; maybe early next year. Well, you have some updates coming up then.

Dr. Williams: Our schedule is filled through 2012 at this point.

Mr. Carmichael: But, see, we need this for setting ACLs by 2011, so it is something that we would have to do. I think the simpler we make the query for you so it's just here it is; do what you will with it, assuming other people on the SSC consider the possibility of participating on something like this in the next nine months.

Well, the bottom line is you're going to be asked for ACLs, I guess. You're going to be asked for OFL and ABC to meet the Comprehensive Amendment. Now, maybe they can set their limits without having OFL and ABC based on this morning's conversation – maybe, maybe not. But I think you all know the pressure to provide some fishing level recommendations in time for implementation in 2011 or at least approval no later than early 2011; so, yes, sometime in the next year. The time and the money is certainly a huge concern, but we think this is the right concept. Maybe we just leave it at that for now. Does this seem like the right approach?

Dr. Williams: Yes, I mean the thing is we need to get it to the people that make these decisions that we are eventually going to need this. They're going to have to make the decision, all right, do we bump Species X, Y in place of getting potentially 20 species' OFL and ABCs established; you know, is that a good tradeoff? I mean the bottom line is I don't think anybody thinks we're going to get this all done for all species in time. I think that is not going to happen. It is just a matter of where we want to give up and where we want to try and actually get something done.

Dr. Belcher: Of course, some of the issues we're going to run into, too, is the fact that we have got three councils all hitting the Southeast Center wanting all the same things in the next two years. I mean we're talking specifically for our council and our species, but what happens – I mean obviously the Caribbean Council is in a whole different realm, but the Gulf of Mexico, if it ever decides to start pushing into this, too, I mean –

Dr. Williams: But we should never stop asking.

Dr. Belcher: Oh, no, I'm not saying that; I'm just saying that I know we're pushing for all of this as well, and I just keep thinking about at what point are we really to start having some through-backs as the other two councils start jumping in. Luiz and I learned that, what, there are three science centers for one region over on the Pacific. I mean it is tapping you guys. I mean between you and the Miami Lab it just seems like there is this huge funnel-down effect through one process.

Dr. Barbieri: At some point I know that there was some discussion of congressional appropriations that would be made to enhance regional capabilities specifically for ACL and OFL purposes. I know this was vetted through the Atlantic States Commission, and we sent back a list of needs.

Now we're probably looking into a different fiscal situation, and I think this idea of perhaps just re-prioritizing what is on the table, knowing that this is something we're going to have to have, and maybe we have to look at the entire list of assessments and say we're going to have to reshuffle deck here to be able to get this done because I cannot see any additional resources being brought to bear to hire more assessment scientists for the Center.

Mr. Carmichael: My thought to that is to some extent what we're talking about is very similar to what we did down in the Caribbean with the data review down there with groups of fishermen, and those who work on that data went through and summarized landing statistics and what was known for biological sampling and how the data were collected over time.

We got through a lot of that in a week, including some efforts of doing things which we probably wouldn't do but data-poor assessment methods like length approaches. You're familiar with Todd's work in that arena. That could be something else to talk about, so I think it is probably good. The SEDAR Steering Committee will meet in May.

I think this idea that I have talked with a number of you about, about black sea bass and doing another benchmark of black sea bass when we have a number of fish that have never been assessed. I think if the SSC were to pass a motion, perhaps, to make sure that it gets elevated up to the council, the South Atlantic at least, to say, "Look, we recommend that you consider doing something for all of these fish that have had nothing before you go in and do a second benchmark on a fish that you have already got a benchmark and an update on."

That's the sense I have gotten from some. I don't know if the committee as whole feels that way, but I sense that from what you just said here that there is a dire need to get some

information vetted, even the most basic information examined and evaluated before we go on and do some more benchmarks of stuff we have already got assessments on.

Dr. Reichert: I agree with you, John. I just want to caution that a lot of what we are doing – and I'm putting on my MARMAP hat – and the Beaufort Lab, the people who are processing the samples are in a similar position. A lot of what we are doing at the moment is already in preparation of what is going on in 2010, '11 and '12. So, I just want to caution all of us that if we make these changes and we have made some changes in the past, that we should take that into account in terms of what is happening at this point in preparation of future SEDARs.

Mr. Carmichael: There is always that.

Dr. Reichert: That doesn't mean that we should not make any changes. It is just that we should be very cognizant of that.

Mr. Carmichael: And be realistic as to what we could expect. We wouldn't expect to have age compositions for something like this. We probably wouldn't expect to have length compositions; but maybe; I don't know. Maybe basic raw length composition for a fishery, you could have some figures on that; you know, probably not age; certainly not surveys at age or anything.

Like in MARMAP, you guys for a suite of species you do an annual report, so something like that would suffice, anything that is regularly done that wouldn't require additional work. So, yes, you are tapped out working on the things that are already the priorities from two years ago that we have to continue with.

But I just felt, you know, the latest changes in the schedule addressing black sea bass and the issue where the council recommended doing cobia seemed to catch some members' eyes and saying, you know, there is perhaps bigger fish to fry than those couple – another sea bass benchmark; an assessment of cobia when you've got so many fish that are overfished and overfishing that you just simply have to make recommendations on.

I think you guys are kind of feeling uncomfortable in a lot of cases making recommendations without any sort of evaluation of the basic data, and this might give you a way to ease your concerns and give you a little bit of comfort and at least thinking you have landings you can look at with some confidence.

Dr. Belcher: Erik, I know I asked this back in December, but generally relative to SAFE reports, going back to what is being in the Pacific, is that something that – not targeting you or Miami or whatever, but is it something that as a body we could request to go someplace to start getting those, because wouldn't that actually kind address some of this for us or would it not?

I mean I have not put hands on a SAFE report to really see what is involved in it, but our understanding from the national meeting is that is a lot of where they go to to get their general year-to-year updates for specific fisheries. Is it something that would be worthwhile for us to push and just put it in a non-entity sense?

I'm not saying that we need it specifically from you, but to say overall from what we have seen relative to the national meeting and so on and so forth the importance of these reports in other regions, yet the neglect on our part, not just here but the northeast and the Mid-Atlantic for these reports to be added; is this something worth pursuing, for us to actually put a request in that monies need to be directed for that for us on the east coast as well?

Dr. Williams: I don't know to what extent that – I mean I think a SAFE report is something all the councils are going to have to start doing. I think that is coming out in the NS2 – well, anyway, one of the guidelines. I should know; I'm on NS2, but I can't remember we're saying, yes, you must have a SAFE report in them.

But I think the SAFE reports are kind of different from region to region, too, whether they contain all that information or not, so I think it just depends on how the South Atlantic decides to define the SAFE report and then whether that stuff would be in such a report or not or whether it needs to be in addition to that report.

Dr. Belcher: Because I had just found it strange that they were talking about these and they bring them out. I mean they're very in-depth from the quick thumb-through I had done, but then for us is we would go back to the little, you know, half-inch thick status of the fisheries.

Dr. Williams: Well, it highlights a very clear difference between the west coast and the east coast. The west coast has easy access to a lot of their data. Even the council staff can just simply query landing time streams if they wanted to without any trouble; whereas, we have to go back and cobble together several sources of information and we have to look back and verify species' identification issues. We have to go through a whole rigmarole just to generate a simple catch series. That's a big, stark difference and it's probably why we haven't done anything like a SAFE report on the east coast and they have because they can afford to; it's easy.

Ms. Lange: Part of this goes back to a question that we had back in June and I apologize if this has already been done, but one of the things was to get a matrix of – one of the issues we talked about was developing a matrix, and at that point council staff thought they could for each species in the council's FMPs sort of a matrix of what types of data are available and for what years; for instance, catches are available but they are questionable; survey data are available; age data are available; length data, just to get an idea. My understanding from the June meeting was that the council staff was going to try to pull that together. I haven't seen it so I don't know if I missed out on it because I wasn't at the December meeting.

Mr. Carmichael: Council staff doesn't have access to all of it to know exactly what is available. It is going to take a request to the Science Center, for instance, to say – you know, especially when you get into lengths and ages and all that because you would be getting into TIP. We do have information of landings that are available from each dataset, ALS, logbook, MRFSS, headboat.

Through the MRFSS Program you can find out something about lengths, but lengths and ages we don't have and surveys we don't really have. Well, we know surveys; we don't have any

surveys. What we have is what Marcel conducts in South Carolina and the MARMAP. That is our survey.

Dr. Reichert: I'm sorry?

Mr. Carmichael: We were just saying surveys, we know what we have. We have what you guys have and your annual report is probably the best indicator of what is known about surveys and survey information.

Dr. Reichert: Yes, but even in there in terms of life history information, for instance, or even catching up on the age and reproductive data that we collect on an annual basis, what we process is determined currently by the SEDAR schedule. I was just making a note to the effect that if it is essential or important that we provide that type of information on an annual basis, then we need to think about how we can make that happen in terms of personnel and funding

Mr. Carmichael: I did something through David Glockner for the SEDAR Steering Committee where I just got him to tap into TIP to give me an idea of the number of lengths and the number of ages that are available every year for individual species. We did it several years ago for the species that were on the horizon at that time.

It was six or eight species, and I think he set that up in a SAS query so it is probably not too bad to go in and add more species to it. I would think something like that would be a relatively benign request that we could make, which would certainly be part of this. I think we want to have landings. We would want to have CPUE if we could get it. We would want to know what is available for lengths and ages. If they could output us maybe some of the data, we could help doing some of the length frequencies or something.

Ms. Lange: That was just one of the questions that I had back in June for those of us who haven't been working for a long time in the southeast; just what kinds of data are available in order to make any decision on whether even down the road an assessment may be possible for some of the stocks.

Mr. Carmichael: Maybe a matrix that showed species and year and then one table that gave you the number of lengths that are available. It gets tough because we have so many datasets and we have a number of those tables for each program.

Ms. Lange: Or just qualitatively what the landings' data are for speckled hind.

Mr. Carmichael: That we get; we have that right now; we can do the landings.

Ms. Lange: And a list of the caveats, the concerns. You were mentioning, Erik, we have a number, but what does it really mean? It doesn't include discards, it doesn't include this fishery or whatever the issues are.

Mr. Carmichael: Or it has got species ID problems.

Ms. Lange: Right.

Mr. Carmichael: They landed as black; they landed as gag; all of those things. They land them as amberjacks and they land them as amberjacks to species. That is the other thing is you have differences in the databases. ALS versus logbooks, there can be different conventions for allocating things to species. That's all the stuff we need to start getting down on paper so we know that when you come to interpret the landings' trend this is what you need to know.

Ms. Lange: I think it would be very informative, especially for those of us who haven't been working specifically on any of those stocks, but to get it all in one place now just for historical purposes, too.

Mr. Carmichael: We commented some on the SAFE reports; I think the SSC should play some role in what SAFE reports contain. If you something should be in it, let's hear it and get it in there.

Ms. Coakley: I just have a quick comment on the SAFE reports, because really you talking about them as just sort of providing information, but the way they use them in the North Pacific it plays a dual role as being the mechanism to communicate the SSC's decision as to what tier a stock should fall into and what the basis for that is.

They use their plan development team to draft the SAFE report with all of the CPUE information, landings' information, history of management and stock status. They put in recommendation in there for what tier it should go into, but it goes to the SSC as a draft. The SSC then makes their decision, modifies it and then that becomes the tool to communicate that to the council. Yes, I think the way they're using it, the SSC has a big role in what the final version of that document is, so it is a tool just to communicate information and to communicate the SSC's final decision and the basis for it.

Mr. Carmichael: More for the SSC to do.

Dr. Barbieri: Well, I just found here that document actually was one of our agenda topics that the councils have a lot to do with the SAFE reports, contents of the SAFE reports and all. I think we should be reading this and thinking about weighing in.

Dr. Williams: The first draft of NS2 should be out in April, I think, for comment, but I can't remember if that is internal at first and then it will go external: I can't remember.

Dr. Belcher: I apologize as that kind of took us off course a little bit. I guess coming back into what we're looking at relative to speckled hind we're still looking at Level 2.

Dr. Barbieri: Well, just to add here a bullet from this letter, "We fully support including the recommendations that are provided by the Scientific and Statistical Committee in the SAFE report based on the new responsibilities as specified in the Act", so the council already has an expectation in this communication with Headquarters that the SSC will play a role in the SAFE report; I mean very explicitly here.

Mr. Carmichael: I'm just trying to wrap this up in some type of recommendation or something. It seems the SSC is recommending – I mean we can call it a concerted SEDAR and council effort to compile basic statistics in all managed fisheries and solicit constituent input to help understand and interpret the trends. This is should be a top priority in SEDAR planning. Is that where we're standing on this?

Dr. Barbieri: Yes, I agree, and by "compile basic statistics", I imagine you are not just talking about landings, fisheries dependent but we're going to be integrating some of fisheries-independent information into this summary as well?

Mr. Carmichael: I am thinking landings, CPUE, biological sampling intensity and any fishery-independent data that are currently conducted.

Dr. Reichert: We can probably come back to this later, but making it a top priority would we like to say a little more about how we would like to see that happening maybe?

Mr. Carmichael: Let's hit it now; let's not come back; we won't come back; we will forget. We will find something more interesting to talk about tomorrow, so, yes, let's do it now.

Dr. Reichert: Well, you, John, suggested like in the form of a SEDAR Technical Workshop or SEDAR Workshop. You even mentioned a timeframe.

Mr. Carmichael: Yes, there is the possibility to do something like this as a special workshop or is this something that this could be done sort of in lieu of another full SEDAR benchmark cycle that assess two stocks. You could take that effort in time and money and evaluate the data for everything.

Dr. Reichert: So that means that we basically would have three workshops if we do it instead of, and I like that idea because if we follow the three SEDAR workshops, that would provide us an opportunity to compile and discuss the data in one workshop and then instead of an assessment, the next workshop evaluate and see where that leads us, and I'm not sure if we need that – or maybe even a review workshop would be good, but I'm not sure in what form or shape that would be.

Dr. Neer: So you guys know, the next slot for a full benchmark isn't until 2011 for the South Atlantic. If you're trying to get this information for 2011, that's a little late to pull up, just so you know. I'm looking at the schedules.

Dr. Reichert: That is for black sea bass, right?

Dr. Neer: Black sea bass and cobia, yes.

Mr. Carmichael: You're welcome to go there now if you would like, Committee.

Dr. Williams: But we don't operate by the constraints of time or money.

Mr. Carmichael: Not here we don't, no.

Dr. Neer: It may be possible to just try and do it as a one-week additional workshop as another option; just a data workshop like we did for the Caribbean. We walked away with looking at all the data and saying these are the ones we think we can do benchmarks on, these are the ones we think we can provide ACL advice on, these are the ones we don't think we can do anything at this point based on the data that we had available.

Mr. Carmichael: So, following what Marcel said, a SEDAR Procedural Workshop in lieu of a SEDAR assessment cycle, we will have all those arguments in May at the SEDAR Steering Committee. The first data workshop, you would compile and review data; as Marcel said go over the initial work. Then you have an evaluation workshop where advisors and constituents come in and they help the scientists to interpret what is gone on in those in purely 99 percent fishery-dependent data, help you understand that fishery better.

Then the third workshop could be – because it is going to take a lot of work for all of those stocks to get to initial recommendations for the SSC – it could be a workshop devoted of SSC members; maybe not everybody but at least a good sub-group, over a majority, to come in and do some work to get initial recommendations documented maybe in a big spreadsheet that then would go to the SSC for approval and grease the skids a little bit to actually get that through. Does this seem more or less reasonable? It's pie-in-the-sky given our time and money constraints, but it might be a good approach. This is kind of what you had in mind?

Dr. Reichert: Yes.

Dr. Barbieri: John, again, for me to understand what the actual mechanism is here, somebody – I think it would have to be the Science Center, right – would compile sort of like a Status and Trends Report, right? They would go in and compile that to the best of their ability. It would have like a fisheries-dependent component and fisheries independent on a species-by-species basis, and that generates sort of like a laundry list of summaries of species. Then we meet to go and review all of that I just think is a little bit, right – sort of refine that, clean it up.

I mean this is the first level, clean up; the second level is meeting with the fishers, that they help us tease out some of the things there that we were not aware of. Then we could meet, based on that final version, which would not be perfect but from that we can make some recommendations? Okay, I like that.

Dr. Neer: The second workshop may only need to be two or three days as opposed to a full five days if we're meeting with fishers. Depending on how much participation we get, you may not need a whole week. I mean those fishermen on catchability sat that afternoon and came up with all that stuff.

Dr. Barbieri: Now, just another question. Erik, do you think that is realistic in terms of –

Dr. Belcher: I think it is unfair targeting Erik for that. I guess I'm trying to make that the neutral party. It is something that we need and it is something that the other councils could use, too. It

is not just us in particular. I think it needs to go and hit someplace further up than just the Southeast Center.

Dr. Barbieri: Right, but I'm asking because if we're going forward with this proposal; you know, our shop has put together an annual status and trends report. That takes pretty much three full-time stock assessment analysts plus support from fisheries-dependent and fisheries independent. It is about half a dozen people and it takes about three months for them to actually do it.

Mr. Carmichael: Slow down and say that slower so it can be bolded in the record. So to do basically a status and trends report it takes how many stock assessment – six?

Dr. Barbieri: About half a dozen.

Mr. Carmichael: And probably an equal number of people who provide all the input data up to them and it takes them three months. That is probably fair. That is the man-hours that are required to do that. Yes, that is a good estimate; thanks.

Dr. Barbieri: Well, this is why we're trying to assess whether – you know, you felt that if not, if that's not a realistic expectation, which it may not be, well, we have got to think about either a Plan B of some sort that we can –

Mr. Carmichael: We have got landings. We can get intensity of biological sampling without too much trouble and summarize that for them. I think if the intent will be more to let them feed up data in a pretty raw format and we'll take it from there, there is a much better chance it gets done; and we know it will be straight up out of the dataset to limit the amount of time they have to spend making decisions.

This is what the data are; it is the responsibility of the workshop to figure out what data should be and what data actually tell you. It's optimistic that this might get pulled out, especially if it feeds into SEDAR with an eye toward the other obligations, which would be very different than our requests in the past towards a status and trends report which has been made without consideration of all the other SEDAR stuff that has gone on and all the emergencies of 2008.

Dr. Belcher: Any other comments or input relative to the SAFE reports and Status and Trend Report. Okay, seeing none, now we can come back to Level 3 and speckled hind.

Mr. Carmichael: What do we know about speckled hind that might be biologically related assessment and data issues?

Dr. Belcher: As Erik said before, it is missing from some surveys. Isn't this one that is conspicuously absent?

Mr. Carmichael: Do you think it might not like the gear behaviorally or might not exist?

Dr. Williams: No, it seems to have just vanished from certain areas.

Dr. Reichert: Yes, we have that master's thesis that indicated – I mean we had some relatively high numbers of speckled hind when we asked the fishermen to target them, but the regulations is part of it, right? They can only land one and we don't catch them a lot in our MARMAP. We catch them occasionally, but we don't catch them a lot in our MARMAP surveys. We got decent numbers, again relatively speaking, from a collaborating fisherman for this particular master's thesis. It is currently being reworked to a manuscript.

Mr. Carmichael: Species ID problems or anything like that plague this one? I don't ever remember hearing any of that. What do you rate its life history, its biological susceptibility?

Dr. Reichert: High.

Mr. Carmichael: Behavioral catchability or vulnerability? Let's see, they are avoiding them when they need to. If they're targeting them when they are asked to, they must be avoiding them otherwise. That is probably a plus in terms of preventing overfishing on the creature.

Dr. Reichert: High bycatch mortality because it is a deepwater grouper.

Mr. Carmichael: That is probably something worth noting in the biological category, isn't it, protoogeny. Any other speckled hind biological comments; anymore thoughts triggered on this one.

Mr. Chester: Yes, it is listed as a species of concern by NMFS, I believe. I'm not sure if this belongs here or in some other section, but it probably is worth noting that current regulations only allow for one individual per vessel, which probably helps.

Mr. Carmichael: One and then no sale at all, but interestingly they show up in the record of sold fish even now, and warsaw grouper are landed as well.

Dr. Reichert: In that same thesis in the most recent years, '04-'07, no females in spawning condition were collected, and that was one of the main concerns. I am currently looking at the sample size, but it was considerable relatively speaking.

Mr. Carmichael: Some of these spatial things going on maybe?

Dr. Reichert: I will try to look it up.

Mr. Carmichael: It is a little frightening to think it's across the whole population. It won't be there long. We have got a couple of more things to keep in mind throughout all these is the protonenous fish. Should we have somewhere in this framework to bring up these endangered species' concerns? Maybe we have just sort of a catchall for other stuff to consider.

The ABC Control Rule is getting away from being something really simple and it is going to be more of a kind of a framework and a list of things to be considered and commented on. In that vein if we have things like are there endangered species' concerns; is there something especially

noteworthy about the regulations; maybe we can have sort of a catch-all category for other stuff to think of.

Dr. Belcher: All this discussion also leads me back to what we concluded for this species, which is a catch of zero, but by the same token we have to deal with the issues of the bycatch. Just a little bit more to chew on.

Dr. Crosson: We don't have an answer for that, though, do we as to whether we can set a catch level of zero except for as a bycatch; I mean, whether we can make a recommendation like that to the council for that kind of – that's a real open question and I think that is hugely pertinent to a lot of the species that are in this complex.

Dr. Williams: Actually the NS1 Guidelines say we can specify ABC either with or without discards. If we do not specify it with discards, then the understanding is that the ABC level sort of accounts for discards. In other words, we may not explicitly spell out ABC as including discards, but that the associated discards with that catch level will not impair the stock in any way or something along those lines. Mark might correct me on that.

Mr. Nelson: Yes, we do have a comment response in the final rule that addresses this. The problem with setting – well, of course, the ACL has to be below your ABC. If you set your ACL at zero, if you catch one fish, that automatically you have exceeded your ACL and therefore you need to – it kicks in your accountability measures.

We go in and explain why that isn't necessarily the greatest idea unless you want your accountability measures to kick in at one fish, but generally your ACL, which is less than your ABC or at least equal to your ABC, should be at some level above zero that accounts for discards and uncertainty and so on and so forth. Again, it is in the Federal Register Notice and in the final rule comment responses we do go into that through several comments, and I can point those out to anyone who is interested.

Dr. Belcher: Yes, I think the biggest dilemma we have run into in the past is that we have always given the allowable catch, and then there has been an outside estimate that has just been associated with discards that has put forward to the council elsewhere, so we have not – any of the generations we have done have been relative to what is the total catch allowed.

Now we either have to – I'm not saying that we wouldn't but that is something that we have not accounted for in the past. When we say zero, we're saying what should be the total allowable catch. Then from there – and this is where I know it's counterintuitive to the way this is now because their level has to be equal to ours or lower – our ability to set that buffer is coming from information that is actually not presented to us, so it almost would have to come to us.

Any of Jack McGovern's analyses that have been done in the past would now have to come into us and our zero would now be adjusted according, I guess, to his estimates were; where in the past that hasn't been the case. Then they could put it to zero, I guess.

Mr. Nelson: Things would have to change a little bit from the way that you've done things in the past. Instead of the SSC recommending a TAC of zero, the SSC would be recommending an ABC level of catch above zero that is unacceptable to go above and then with a recommendation to the council to try to limit the catch to zero. It will be a little bit different but hopefully the end will be the same.

Dr. Crosson: The current restriction is one per vessel and that can't be commercially sold, right, so we can make a recommendation to the council that standard that we have right now, that you can keep one per vessel, but it can't be commercially sold. It's just it doesn't have to be tossed back dead into the water. We could make a recommendation like that to the council without having any kind of conflict with the current guidelines.

Mr. Nelson: Yes, that seems like it would be a good recommendation.

Dr. Belcher: Okay, continuing on, any other things we can come up relative to this fish?

Dr. Reichert: Just as a reply to John's question about the geographical coverage, one caveat to the low number of spawning females is that in the most recent period no samples were collected that's greater than 146 meters, so they may spawn in deeper areas which may explain the low numbers of spawning females. Juveniles were collected so there definitely is recruitment happening, but it is one of the unknowns.

Dr. Belcher: Okay, that is Example Number 2 done?

Mr. Carmichael: Yes. We skipped Number 2 and that's not probably all that different, though. It's a function between one and three. Should we go with one that just has – do we have one that just has F? Do we even have a four example?

Dr. Belcher: Well, in theory wasn't vermilion one that we had unknown status or was it red porgy. I get confused which one of the red fishes it was.

Mr. Carmichael: Vermilion was probably a two. You had F but not B. You had Fmsy but not Bmsy.

Dr. Williams: Vermilion snapper is one where we just used Fmax as the proxy. We didn't have Fmsy. We had no reliable stock recruit curve.

Mr. Carmichael: Would you ever have a two?

Dr. Williams: A two where we put on the status?

Mr. Carmichael: I'm thinking on the tier; would you have a situation where you would have –

Dr. Williams: Oh, yes, you could certainly have –

Mr. Carmichael: If I had F, then I'm all the way down at four, so that is not really probably the way we want this worded. Do you ever have two? Maybe two is defunct.

Dr. Williams: Well, I'm wondering if you could have a production model that might produce just a good estimate of Fmsy but not Bmsy.

Dr. Neer: Yes, because we had estimates; we just didn't buy one of them. We had the Fmsy but we didn't buy the Bmsy. It was what the reviewer said.

Mr. Carmichael: Well, what we meant was one of Fmsy or Bmsy; is that right, or F and Fmsy or B and Bmsy; is that what we mean?

Dr. Belcher: But then you do get that overlap with four; that's what you're saying, right?

Mr. Carmichael: Under four you only have F; you don't have Fmsy; you don't have any reference point.

Dr. Williams: Yes, in four I was thinking in terms of what if all we had was the catch-curve analysis and we didn't even have a proxy to compare it to? In that case if you assume some M, you could get an F value. In thinking about it more, I'm sure we would come up with some sort of proxy to compare that F to.

Mr. Carmichael: We would be up to a three, wouldn't we?

Dr. Williams: Yes.

Mr. Carmichael: Should a three be you have Fmsy and Bmsy; you have a proxy for both, you picked a proxy for both?

Dr. Williams: What is a proxy for Bmsy?

Dr. Barbieri: I'm trying to think about, was it Spanish mackerel that the review workshop accepted Fmsy but thought that the Bmsy estimates were unreliable? Wasn't that, Marcel, the case? I'm trying to remember.

Dr. Crosson: The stock was improving consistently but to what level they didn't have a formal opinion.

Mr. Carmichael: I was looking at three and thinking what Erik just said how would you get a proxy of Bmsy? Well, we have an "or" there; is "or" the right word? For three we mean a reliable proxy for Fmsy?

Dr. Belcher: Is everyone in agreement with three?

Mr. Carmichael: What do we mean on three in reality?

Dr. Barbieri: I think we just mean a reliable proxy for Fmsy, right?

Dr. Williams: Yes, I think so. I mean that is the way we operate. I was, again, borrowing from the North Pacific. I guess there is a proxy that we could use or at least the west coast uses and that is a biomass of 40 percent. So let's say you had an estimate of the virgin stock size but you don't have an estimate of msy; you could assume that 40 percent of virgin approximates msy, which is what they do on the west coast.

Mr. Carmichael: Are they able to do that because they have so many surveys and information that started when the fishery started so maybe they have more confidence in their virgin than we do?

Dr. Williams: Yes, because sometimes you can even go as far as to – if you have a catch-per-unit-effort index that goes back in time far enough before the fishery even started, you can assume that there is a 40 percent decline in the CPUE so it is right at msy.

Mr. Carmichael: We'll never be there because we have already lost 150 years of fishing.

Dr. Belcher: Well, do we want to think over a break? Let's take a 15-minute break.

Dr. Belcher: We are ready to go on record and we were talking about – well, actually, we're not going to think on the Level 2; we're looking at a Level 4. Okay, Level 4, which is reliable estimates of F; do we have an example?

Mr. Carmichael: Is it vermilion?

Dr. Williams: No, because we have a proxy for that one in place. I don't know; maybe this category doesn't exist. Maybe really anything that falls at this level ought to just go ahead and go down to the next reliable catch history level.

Mr. Carmichael: We would always have a proxy for Fmsy and you kick yourselves up there. If nothing else, you have got 40 percent SPR. The next one is reliable catch history.

Dr. Barbieri: This just means that we only have a reliable catch history and not any of the above, right?

Mr. Carmichael: I think we have an old assessment of warsaw; we have an older assessment of wreckfish – dolphin.

Dr. Williams: Wasn't that part of the dolphin/wahoo assessment that was done like in – it was just prior to SEDAR.

Mr. Carmichael: I don't know if the assessment ever got accepted, though.

Dr. Williams: Yes, I don't either. I think this would include a number of species. White grunt, there is no assessment of that; that's got a reliable catch history versus something that doesn't like lesser amberjack or scup.

Mr. Carmichael: So a number five example for a reliable catch history would be white grunt, which is a very popular fish in your recreational and headboat program. It's one of the I think maybe top five fish for decades now in the headboat program and there has never been any assessment attempt at all that I'm aware of.

Dr. Williams: I think there was a life history analysis that had some crude per-recruit analysis in it, but it didn't provide any benchmark or any stock status or anything like that.

Mr. Carmichael: This one even escaped the VPAs or the trends reports, didn't it?

Dr. Belcher: So, basically, all we have available is what you said, catch data, reliable catch data?

Mr. Carmichael: What will we do with uncertainty? Obviously we don't have any evaluation of uncertainty –

Dr. Williams: Right, there is none.

Mr. Carmichael: -- that is applied above.

Dr. Williams: Right, no evaluation or none.

Mr. Carmichael: Status most like are going to be unknown almost by definition if this is all you have.

Dr. Williams: Yes, unless you had some anecdotal information. I don't know if that would ever be usable, but if you had an indication that the species was once common in the catch history and now it is not, then that might suggest a poor stock status. I don't know if we'd ever use that to that degree.

Mr. Carmichael: You might have a big decline in catch, perhaps, in your catch data that is your only reliable source that you believe reflects abundance decline.

Dr. Williams: I am just thinking like, for example, speckled hind we just talked about. It's not in this category but I could see where if you had just the catch history of speckled hind and you had just some basic knowledge from the oldtimers that they were big fish out there and they were easy to catch and they were located all the way from North Carolina south, and now we're seeing in the most recent just catches and hearing from the fishermen that they don't see them in North Carolina hardly anymore or things like that, that sort of anecdotal information would suggest that the stock status is poor, at least.

We may not be able to distinguish whether it is overfished or even below that critical population threshold, but we could probably hypothesize that it is pretty close to overfished just based on a catch stream and anecdotal information.

Mr. Carmichael: Might we perhaps adjust the buffer due to this anecdotal type of information? I had up at the top, of course, when we get to this level of data and all we have reliable catch history, that would probably be a pretty substantial increase in the buffer; increase in the difference between ABC and OFL.

How would you even come up with it; I guess that is the other question. Now we're sort of in the realm of where do get OFL for an initial starting value, even? All the ones above we could kind of rely on a yield at Fmsy type thing.

Dr. Williams: I think that is where you use a data-poor method for using some period of time over which you compute average catch and call that OFL or something like that. That is the best you can hope for is take some portion of the catch time series and say, well, we think the fishery was operating at msy at this time. The question then is that proxy for Fmsy and does that then bump us back to Category 3?

Mr. Carmichael: No, because it is just msy, right; there is nothing about F?

Dr. Belcher: Erik, I am going to ask you this question only because I know you were in the Pacific, but, again, I know probably not relative to the North Pacific, but when they talk about theirs and they use this reliable catch history from 1978 to 1995; I am just trying to think is their some relevance to that time window that either this was an old copy of the table or this is a consistent rule of why '78 to '95? Like I said, pointing it to you is probably not the best way to do it because I'm sure you don't know the intent, but I didn't know if maybe familiarity with it you might know why that range.

Dr. Williams: No, I know exactly why that range. It was after 1976 when we took over our domestic fisheries and that is when we started, in the North Pacific, was around 1978 is when the domestic fisheries started taking off after we had kicked all the foreign fleets out, so that is to reflect domestic data essentially.

Dr. Belcher: So what about the 1995 cutoff; do you think that is –

Dr. Williams: Yes, that is a holdover from probably just depending on what year the SAFE report was generated. I don't know why '95. Maybe by 1995 they had established thorough reporting at that point, I don't know. Yes, that '95 I don't know. I know the '78, though.

Dr. Belcher: But the point is that '95, it is not just like a time series, like an end value of time series. It's something relative to some management threshold at which they believed – okay.

Mr. Nelson: I downloaded that from the latest SAFE report. It is an introduction section of the 2007 SAFE report. Anyway, the '95 could be when that table could have been put in place in

'95 or '96 or '97, somewhere around there, and that was the last year, and it went into their FMP as this. It could be that just has not been changed yet.

Mr. Carmichael: Maybe that is when their first FMP went into effect.

Mr. Nelson: I believe they had FMPs before then, but –

Mr. Carmichael: Well, yes, but it might not have been approved until then.

Ms. Coakley: I think it was Amendment 52 to Groundfish that went in place in 1998 that put the tier-based system into place, so that is why '95; you know, they were probably working on it in '96. That's probably where the cutoff was, but the guidance that general counsel has always given us on time series data or definitions or biological reference points, things like that, that, you know, data updates that don't modify the way in which you have defined that time series or the definition for that reference point, that you can update those as new data becomes available without going back in and doing a one-year amendment and overhaul.

Mr. Carmichael: Amendment 52 they were doing in '96?

Dr. Reichert: And we could probably talk about this later, but white grunt is also a species where we currently have only a reliable catch history, but potentially we have enough data to do a stock assessment. That's why I guess it was on the schedule earlier. It may be at some point we need to discuss what we would do in a case like that because we may set an ABC but we are not really talking about a data-poor species. It is just the data hasn't been processed in terms of stock assessments. What do we do?

Dr. Belcher: I think this gets back to where we were talking about that timeline issue as well as data issues. Our problem is it has been in the queue, but it just hasn't entered into the SEDAR process yet. There is data, but in the absence of that what are we going to do. I know we're all kind of continuing along those timelines because of the fact that we have put this motion.

We know things are happening and coming along, but in the sense that you have a situation like this – like if we have to give numbers based on what we have now and we're only faced with a catch stream, how are we going to proceed. I think that is where we have kind of picked that one. Yes, ideally it would be nice that we pick it up and through; I mean, the same thing with red and black, but right now if we had to put a number forward it would be based on the catch.

But, you're right, that does need to be a question to say in that situation is we're asked for SEDAR recommendations; here is another one to write on a piece of paper on the side of a species that there is data to be done and it needs to go into the queue. We're doing it with little data because that is currently what is in front of us, but it needs to go through in actually a more rigorous approach than what we're giving it right now.

I mean that is the kind of catch we're in is that we have something there and we're being asked to do something with what we have as opposed to waiting for it to go through and pick up. I

don't know if that is helpful or not helpful, but I think that is the timeline thinking of what we have and what we can or can't do with it I guess my point was we have –

Dr. Reichert: What I'm thinking in that respect is – and this goes back to a discussion the last time in the previous meeting in terms of at that point where are we in terms of, okay, we base our estimate of ABC on what is available, but do we base our estimate on the best available science?

Dr. Belcher: Well, I guess the problem is that even though there is better science available to us, the timeline in which we can use that information is our biggest crux I think. It's great that we have it all, but until we can vet it through the process that information is only usable in the stream it is currently present in. Until we run it through the SEDAR, we're not going to get it into a better –

Dr. Reichert: But as the SSC we can recognize that and base our ABC on, in this case, the catch data, knowing –

Dr. Belcher: The caveat for me, what I think about is, again, like what we did with red and black grouper is caveating that this is we could do with what is in hand, knowing that there is better information out there that we can get a better assessment, but timeline-wise we don't have that available to us.

Mr. Chester: In the case of white grunt, if I'm not mistaken, wasn't that the object of a fishery-independent comparative study at least off North Carolina, the Rudenhausen Paper? I believe it was one of the species that was considered where they had fishery-independent data from the 1970s and compared it to something in 2004-2005. In this particular case that might be a plus or minus that we could use to help guide us in our decision.

Dr. Williams: Yes, I think that was one of the species addressed in that report. I should know; I was the co-author, but I don't know, but I'm pretty sure it was.

Mr. Chester: That is the kind of thing, if we have some fishery-independent information from MARMAP or other things that could help guide a decision on catch streams.

Dr. Barbieri: Marcel, I completely agree with you. I guess this is the point that we were discussing before. It feels wrong, in a way, for us to go forward with a recommendation based just on landings' data or catch history when we know that there is more data out there to conduct a full assessment, but at this point there is nothing else we can do.

Perhaps the best we can do is in this situation is try to get that species; you know, as we go through that process or workshop-type process, that we try to put that species – make a recommendation for that species to be put into the SEDAR full assessment process; you know, the schedule. We know that what we are providing is sort of like a placeholder for the time being.

Dr. Belcher: I absolutely agree with that. I mean, again, that's kind of the step we tried to take forward last year was at least to give us a placeholder. The problem was is we kind of got

smooshed along with original choices, but, yes, I agree that we need to at least put a placeholder until we can do something.

Dr. Reichert: But that is kind of the background of my question in terms of the information we base – as an SSC the information we base our decisions on. Ultimately, the question of – what was the term – legally defensible decisions; if there is better data and if there is data available. That's why I'm kind of trying to figure out where we are and what we should or should not, can or cannot do; for instance, in the example of white grunt.

Dr. Barbieri: Well, formally it is best available science, and in this case we have determined the best available science involves a stock assessment. I mean it involves the analytical process that would generate reliable estimates of ABC, so we are not ready – we don't have the science available at this point to produce those ABCs, and we are going to have to then go to an alternative process. I mean I think this how we would respond. It is not the best type of approach, but that is what is possible at this point.

Dr. Reichert: And I'm comfortable with that.

Dr. Belcher: And I think, again, the main thing we can do with what we've discussed is that we caveat it. When we put it through and we say we're making a recommendation, in light of the fact that we know that there is more data available and there should be better available science to look at that, given the time constraints that we're working under; you know, we have information and this is the best we can work forward with knowing that there is probably a better number that will come out further down the line.

We are kind of, unfortunately, getting pushed along on a conveyor belt and we are not given that chance to pause and get the information we really know we have available. I think we're pretty well defensible on that as long as we're following what we're doing. We're going through that tiered approach. This is what we're hoping for is to have assessments, be able to do this, and it's an easier – not necessarily an easier process but it is an easier situation for us when we have a lot of data available and a sound feeling for the data.

But in those situations where we're still being forced to put information forward, the only thing we really can do is work with what is at hand and acknowledge the limitations of that data and let them know that it's easier we give you this based on these limitations or we can't give you anything. It is one or the other; and if a number has to be put forward, this is the best information at this point in time we can base that decision on. It is up to you to decide how you proceed from that point.

Mr. Carmichael: I think it is important here to consider what Erik said in the beginning is that the lack of information needs to lead to more precaution. It was easy when we were doing the things that have been assessed to come up with a lot of information and a lot of reasons for which you might increase the buffer, but now we get down to these and we're realizing because you don't have any information you don't have all those things accumulating that are going to lead to that cumulative increase in the buffer.

We're going to have to be careful, I guess, in how we go and then apply these relative determinations that were made because you could end up, which I think created some of this problem in the place, with less separation between an OFL and an ABC for something where you know nothing more than catch than for something that you have a fairly comprehensive and well-conducted assessment. This initial change might have to be rather substantial. The hit that you take in your buffer for the fact that you're only at a Level 5 on your data may be need to be a substantial reduction.

Given Marcel's discussion about what if there is an impending assessment do you think you can something, maybe in that case there is a reason you say, well, we could set the OFL at a short-term average landings and set ABC pretty close to that if we know we're going to have a full-blown assessment in two years, so we don't perceive a lot of risk versus if it is a stock that you don't expect to have anymore than landings in the foreseeable future and you may wish to be more conservative; is that justified -- if it is justified to be less precautionary because you think something is going to happen in the future, I guess. Maybe if there is less long-term risk.

Mr. Nelson: Is that directed to me?

Mr. Carmichael: No, this is directed to everybody, but you're sitting at the table; so if you have a thought, we would appreciate it.

Mr. Nelson: Yes, I do think that there are – from a practical standpoint I do see times at which you don't have a lot of data to go on now but you have to continue executing the fishery somehow. If you know that you're going to have more data in the future and you are planning on adapting your management at that time, you could make an argument that like, well, we're going to continue doing this and then make changes – we're going to continue executing the fishery at its status quo until we have more information as long as that information is occurring in a relatively short period.

It sounds like a good justification. However, you want to make sure that isn't – if you're in an overfishing or overfished state, making that justification is not – it would be very difficult. But if you're in a situation in which you're pretty sure you're at a point in the population where overfishing or overfished is not of particular concern, then, yes, you probably could justify that.

Ms. Lange: Well, I agree that type of adjustment can be made, but I guess my only concern is being sure that it's documented so that there is consistency from evaluation to evaluation within a stock and/or between different stocks. It would have to be documented some way.

Dr. Belcher: So, then, one question that I had come to mind is the determination of the overfished/overfishing status under different definitions of those as they have changed over time. We have species on here that we have catch streams for that have been designated in one of those categories, and I don't know if that throws a monkey wrench into some of it as well; or, for consistency sake of the overfishing – I mean overfishing is you have estimates obviously of F.

But, does that matter or does it not matter? Maybe I'm making it more complicated than I have to. It just seems like we had kind of talked about that in terms of some of the other ones back in

June with this issue of how they were determined to be overfished or overfishing was occurring back in the earlier timelines. With lack of data, how do we make those determinations under the current definitions, I guess?

Mr. Carmichael: Those determinations stand unless you change them, and they're considered reliable unless you say they're old that you don't trust them and you kick it down to this level; in which case they essentially don't exist. Yes, if they're considered as not reliable, they don't exist. If they did exist, you would be using them up above at a higher level. I think that is what happens.

Dr. Belcher: I think we had kind of talked about that, but I just didn't remember what we had –

Mr. Carmichael: Everything on the list from like Amendment 17 all along has always had at least an F estimate from something.

Ms. Lange: So currently there is nothing that has just a catch data stream where there is a limit set for it or where it has been defined as overfished or overfishing?

Mr. Carmichael: I think that is correct. I can't think of anything that has got a status determination that only has a catch stream.

Ms. Lange: So we don't have to backtrack on anything?

Mr. Carmichael: Maybe shrimp, but I think there is even more for shrimp.

Dr. Belcher: I think shrimp was dropping because it is an annual stock.

Mr. Carmichael: Yes, that is a whole nother beast, but they may not have much more. Well, you will all have to go there some day but we don't have to go there today. I can't think of anything that has a determination that only has a catch stream to support it. Did warsaw have an assessment at some point? I'm thinking it didn't; never?

Dr. Reichert: That is what you said earlier.

Mr. Carmichael: I just figured it had like an eighties assessment, but it may or may not have. I wonder if it has something in the trends report. Let me look at that one overnight. Nassau is listed as overfishing, I think, and I bet it has nothing but a catch stream.

Dr. Belcher: That's not on the list or at least not on that one.

Mr. Carmichael: Prohibited, you can't catch them at all.

Dr. Reichert: So how do you get a catch stream if the bag limit is one or they are prohibited?

Mr. Carmichael: You have an old catch stream, but I imagine you would have to come up with – is that an endangered species candidate; does Nassau have some endangered species standing? It would be another spot to keep that in mind.

Dr. Reichert: I thought it was a species of concern.

Mr. Carmichael: How would we go about applying the Level 3 biological and risk characteristics in these cases?

Dr. Barbieri: In these cases or are you talking about – it depends on the species. Are you talking about white grunt in general?

Mr. Carmichael: Well, yes, and if you only had catch in general or white grunt in particular; how might we work through this?

Dr. Barbieri: Well, in many cases we know more about the life history, for example, the population dynamics that we have. I mean if we have growth rates, if we have age at sexual maturity, if we have reproductive patterns or mode, all of those things can be – and information that we can bring up; I mean there are life history studies we can use to help us. In this case we may end up with species that are – you know, we only have the catch history, but still we want to be more precautionary in some than others.

Dr. Belcher: For the record it is a species of concern.

Mr. Chester: As is Nassau and warsaw is as well.

Dr. Barbieri: I think that the easiest way for us to handle this would be if we come up with a matrix that Erik suggested, something that would force us to go through all those criteria, all those items specific for every species. Even if we don't have a stock assessment, we may have a lot of other information that will guide our decision-making in assigning some level of uncertainty and risk and guiding the way that we set the ACL.

Dr. Belcher: So these may actually be the examples we were talking about where you're basing a lot of it on the susceptibility analysis.

Mr. Carmichael: I have got a question for the group in terms of putting this tier along with the other tiers above it and talking about the overall amount of precaution that is applied based on the information content we have. Must the buffer size for any Tier 5 be greater than that for, say, any Tier 3?

Could we have a situation where we might have a fish with an assessment but we don't think it was a great job of treating uncertainty and we think there are concerns with protoogeny and species ID and we come up with a pretty high buffer? But then we could talk about something like white grunt where we're saying, well, we only have catch but there is no sense that there is sense that there is a problem with that, so the OFL ends up being set at some five-year average landings something and the ABC ends up being pretty close that because there is no sense to

dropping the buffer. Would that be viewed as being, oh, you're being a lot less precautionary on this stock that you know but landings.

I mean in a sense it is apples and oranges because you don't know how landings translates to F and I suppose that is an argument that we're always going to have, and it was one of my concerns with the criticisms levied at some of your prior recommendations in this arena that went just along those paths about you were less precautionary for one where you used landings and another where you used F. I wonder what people think about how we would deal with this in these buffers and keeping things equal across this whole system.

Dr. Williams: Well, part of in dealing with species where you just have a catch history is just determining what catch equals msy or approximates msy, and in that step right there you more or less are going to, whether intentionally or not intentionally – I hate to use these words – but you're going to set it in such a way that you have some degree of certainty that that catch corresponds roughly to msy.

In a sense it will be kind of precautionary. Let's say you have just a one-way trend in catch that started high in the early years and it has just gone straight down. That is the worse case scenario. What are you going to choose from that time series as the msy level? Precaution would dictate that you choose something at the lower end of that series, but how low I don't know. I mean that's where there is going to be this interplay between being precautionary and choosing the right msy proxy, too.

So right at that stage – and that is before we even discuss buffers – you're establishing some msy level. Then on top of that then you have to discuss the buffer from that based on other parts that are unknown or susceptibility, ya, ya, ya.

Mr. Carmichael: So you could end up with less than a buffer given that you're trusting yourself to set the msy level in the appropriate way to begin with.

Dr. Williams: Right. This gets into the whole concept of where you take your precaution and stick it. Do you stick it in the uncertainty by increasing your level of uncertainty on things or do you stick it in the buffer? You could do it in both. I mean we say, well, we chose to set a very precautionary msy proxy based on the catch history; therefore, we don't need to have a huge buffer; or, we could say, well, in all cases we're always going to choose the mean, but then we're going to look at that mean relative to the catch history and say, oh, well, this is very likely way off, so we're going to have a huge buffer and end up bumping it right back down to a low msy value. But, in one case we're calling it a buffer and in another case we're calling it an adjustment. That's where it gets a little muddy for me.

Dr. Belcher: Well, we kind of split that out, too, because we talked about the issue of reliable catch data versus unreliable catch data. I mean we kind of acknowledged that issue of the uncertainty associated with the measure of catch, right, by actually saying that we need to split it into two tiers, because we have that one right underneath that deals with that.

So in that situation we're actually stating something about what we're going to do in the situation when we feel confident with catch stream data and the other where we're not so confident with catch stream data. So that kind of builds in for separate buffers in that situation based on the comfort with the numbers that are coming from that catch stream.

Dr. Barbieri: I see this as one of those things where uncertainty intersects with risk. It is like navigating in the dark and you know that you're increasing probability of bumping into something and is risky. I think you have to set bigger buffers for the less information you have, but then you have to address that from another level of uncertainty, and that's the relative assessment between species that would take into account this biological susceptibility and the biological issues that would dictate some species high productivity versus low productivity. Right, it would dictate a level of risk you can take.

Mr. Nelson: I agree with that completely. What I was going to interject in this is it is possible to have more uncertainty – theoretically it is possible to have more uncertainty in an estimate but have a smaller buffer if your species has less vulnerability. So if your goal is to prevent overfishing and that is the overall goal and you're trying to incorporate your uncertainty into that, well, if you have a species or a stock that is less susceptible to overfishing by either life history characteristics or accessibility by the fishery, then your buffer does not necessarily need to be all that great.

So everything being equal in life history parameters and everything, generally as you go down the tiers you should have greater and greater buffers. However, you don't have the same life history characteristics across, and so there are certain ways that you can characterize stocks as simple as saying, okay, you know, this an R-selected or a K-selected stock and therefore we're going to treat their susceptibility differently.

I guess a PSA analysis is a bit of a redundancy, but a PSA is going to give you that biological – you know, it is a tool that you can use to sort of estimate how much of a buffer you should use for any particular species. Wes Patrick, somebody that I work with in Sustainable Fisheries, is the head of the Productivity/Susceptibility Analysis Working Group, and he hopes to have the documents – it will be a NOAA Tech Memo – out by the end of the month.

That will have more information in it. All the regions are putting input into it right now. But in looking over your levels, Level 3, the PSA Analysis is going to be a really powerful tool that you can use for that Level 3, the biology part, and can provide input on how you should address your uncertainty in the biology of the species.

Dr. Belcher: Okay, is everybody comfortable with that, then, as a general statement that, no, that doesn't necessarily equate down a level? Okay. Where are we next? John, we did three, right, so now we're looking at unreliable catch history. John has given us given three examples that –

Mr. Carmichael: It is probably safe to say that most of what came above is not really applicable. We're in a new realm when we get to this level. What do you do; you don't even trust your catch history?

Dr. Williams: The question is how can you specify an ABC if you don't even know F?

Mr. Carmichael: Do you have the report handy; do you want to pull out that quote from the National Workshop where that was I think termed "preposterous, ludicrous", something. There is a really good quote. Was it Terry Quinn? How do you set a catch limit when you don't even have catch?

Dr. Reichert: Well, in this case, while we are waiting for the quote, scup has the fishery-independent CPUE time series. Would it still be under unreliable catch history?

Mr. Carmichael: Is this the answer here is you're going to have to look at it on a case-by-case basis, because some you might have five years of reasonable catch records. You don't have a long history, but maybe you have a couple of years. Maybe you have a recent study that some student did on life history, and maybe you have some records coming in on a survey that you just scanned.

Dr. Williams: Well, one property that is likely common in a lot of datasets is the species' identification gets better through time, and in the most recent years we probably have the best species' identification.

The problem is at what point does the species' identification become good enough that then we have a reliable catch level, and is that enough time to use for setting an ABC? In other words, let's say we only have the last two years of catch that seem reliable for a species, but the 20 years prior we can't trust because of species ID issues. What can we do in that case?

Mr. Chester: Yes, sort of in a similar vein, for certain sectors of the fishery; for example, in the southeast, the headboat fishery, we may have a very much better species identification over time which perhaps could form the basis of some sort of proxy recommendation.

Dr. Barbieri: Right, and all of this is correct but if we go back to the intent of the Act that Mark brought up, if the idea is to prevent overfishing from happening and we have the least amount perhaps of information available, if we are consistent with our framework, the rationale for our framework, we are going to have to be more precautionary and do the bigger buffer in this case. This is not the option if we follow the same rationale that we have been using for the other tiers.

Dr. Williams: The question, though, is what do you build the buffer on? You don't even have, really, something to build it off of if you don't have a reliable catch history. You have got nothing essentially.

Dr. Barbieri: Well, in that case we may be able to say – I don't know how we would advise the council to do anything different that would keep with the intent of the Act and advise them to set a catch limit that is reliable.

Mr. Nelson: You guys are the experts at the stocks in your region, and I am just going to throw this out as one possibility or one approach that you can take for some of these very data-poor situations. The Act does allow the use of complexes. If some of these very data-poor groups;

you know, you have ID problems and you can't necessarily set an ACL for a particular stock because you don't have ID, catch history and so on like biological parameters, well, it may be possible to move forward with grouping some of these data-poor species together and use a stock complex approach.

That, of course, comes along with all sort of other problems and issues that you have to deal with in making sure that you're managing for equally susceptible stocks. Grouping these stocks becomes very important, so you don't want to put a very susceptible species with – and so on and so forth, but it's one way that you may be able to move forward with addressing some of these data-poor situations. You guys are the experts at these particular species, so I will leave that up to the SSC.

Dr. Barbieri: Just one other question which I think relates to this is we have an unreliable catch history, can we have a directed fishery and therefore a significant harvest and still have – and I am talking about just the southeast. I am not thinking about the Caribbean – you know, that us being more precautionary will have a major socio-economic impact on fishers out there. I am not sure – it's really a question – considering the fact that we have an unreliable catch history.

Dr. Belcher: There is actually a couple that I think are relative pertinent to it, but the one that John was mentioning was from John Siebert, "The notion of setting a catch limit on a fishery for which you don't know the catch is just absurd. Here we have an unregulated, unmonitored fishery and that makes the agency nervous, so how do we resolve this situation and resolve it in a way that is equitable for the stakeholders in that fishery? If we are not careful we will end up marginalizing them out of the system."

Jim Berkson makes the point and says, "If you have a time series of catch data that you don't have a lot of faith in, how do you define precautionary and taking into account uncertainty other than not to have a fishery?" Terry Quinn says if it can't be done, we have to say it can't be done. Then, lastly, "Catch data at a minimum has to be obtained."

And it is particularly important to the Caribbean and the Western Pacific. I went in thinking, oh, we have got 73 species in a species complex, and they came up with like 400 species. I said like, okay, I'm going to shut up and not even mention how few we have. But this ought to be a strong statement coming of this meeting, and that was one of their key points was the fact that the catch data is at least the most critical link for us is to have a very good handle on what that catch is.

Ms. Lange: Well, I guess to Mark's point it gets a bit circular. If you're trying to define a stock complex or a group of species that you're going to consider together, you have to know something about them to determine whether or not they actually have a reason to be grouped together. I am not sure that really addresses lack of data or a lack of confidence in the data.

I am not saying I disagree; it just seems so circular to me because you can't really group them unless you know something about them and how they're caught, if they're caught together, if they're caught in similar quantities or whatever.

Mr. Nelson: I am not saying that it is the solution to this, but it's something to keep in the back of your mind. There may be certain stocks that you know enough about that you may – for instance, just off the top of my head, identification problems, so you have identification problems historically. There's, let's just say, three snapper stocks that are separate but they reported similar.

Well, if you then go back historically and you treat as a complex over that time series, you may be able to find more information out about their trends than using two shorter time series. Like I said, it is one tool that you may be able to use to keep in your toolbox but not necessarily the answer to all the problems.

Dr. Barbieri: Although I thought those quotes were right on and relevant perhaps to the fisheries that they are related to, I think here is a difficult situation. I mean we have had fisheries-independent surveys and fisheries-dependent surveys. You know, commercial landings and MRFSS have been in place for quite a while. It is different than the situation in the Caribbean that Jim Berkson was talking about or the South Pacific Islands.

I mean here we do have a lot of reliable information for a lot of these species that goes back quite a bit. So the fact that this species and some other ones don't really have a reliable catch history I don't think depends on the data collection systems as much. It is perhaps the system is not being developed to the point that the resolution to actually capture the species because they represent either rare events, relatively speaking, to a species that dominate the fisheries and the landings; and in that case if we decide to be a little more precautionary, I think the impact should be less than it would be for some of the other species.

Dr. Belcher: Yes, I was kind of going to say that same thing; you almost have to ask the question of why is it unreliable. With all of the effort that has been put in it, especially if it's commercial landings as opposed to recreational, I guess that is the million dollar question is why. You would have to ask almost to the heart of that question why is it?

Dr. Williams: Well, there will be exceptions to every rule. One example would be tomtate, a ubiquitous species, probably caught quite bit but used for bait. It only shows up in our records as ultimately discards, if it is even recorded because there is still this issue of whether fish that are used for bait, how they're even being recorded. There is an example of a rather ubiquitous species that just isn't showing up that we basically have an unreliable catch history for and that's the best we have.

Alex hit on this earlier that there is probably enough samples in one of our surveys, one of our data-measuring systems that captures a species sufficiently and the others might not, so in a sense when we say unreliable catch history maybe the whole catch history is reliable, but maybe one sector is reliable, so then what we have is like a proxy for the catch history instead of the actual catch history. In that sense we can still provide guidance on percentage reductions or something like that, that we just hope that if you apply it you would get this percentage reduction.

Mr. Carmichael: To that, would that become a five?

Dr. Williams: I don't know. Maybe we need to just merge these two as one element. I don't know if there is much of a reason for a distinction between unreliable or no catch record. I don't know; maybe there is.

Mr. Chester: I agree with that, and I think we probably could come up some proxies, but I come back to the fact that it might all be moot. If we can't monitor them anyway, what kind of accountability measure do we use? That's just a whole nother level.

Dr. Williams: But that is not our task; we just come up with an ABC. That is up to the council.

Mr. Chester: I mean you could say when the headboat fishery catches five of these, we close the fishery all around, but it is going to be tough to measure and enforce that.

Ms. Lange: To the point someone just made about merging five and six, we really could do that and just under assessment availability or under Level 1 just how reliable the data are. I mean that could just be part of the determination of the buffer that needed to be included. It is very reliable or it's not very reliable or it's only a subset, but it provides a good trend for that subset.

Dr. Belcher: It is almost an ad hoc look at uncertainty to a degree. I mean isn't that what you're saying, if it is reliable or unreliable you have a high degree of faith in one and not so good in the other, which would say that, you know, your certainty on the actual measures there, whether it is strong or not.

I mean I know it is not in the same categories that we have been throwing uncertainty, but it almost is that step of how certain are we that that is good, so it is kind of a pseudo uncertainty assessment. When you're saying it is reliable or unreliable, you're saying I have faith in one and the other is not so good.

Mr. Carmichael: You don't have a lot to hang your hat on there. Well, one way this is possibly different is sort of the last couple of questions, is can you have a directed fishery; should the ABC equal zero? If you have a reasonably reliable catch in the headboat and MRFSS but some questions about the commercial but you make some insights and scale that up where you need to and come up with an estimated catch that you can kick up to Level 5, then you feel confident then, yes, I could still have a fishery.

But if you didn't have a reliable catch across any of the sectors and you're truly in Level 6 with no reliable catch streams from any data source, not even for the last couple of years or anything, you just don't have any confidence in what is being reported, is this a case where you say, yes, hard-core, this is a six, and there is no directed fishery.

In terms of the consequences of six, if it becomes a global hammer, when you hit this level you don't get – you know, we don't have to discuss it anymore; ABC is zero. It that is a route to go, then there is a reason for having this. If it is going to be something that is going to be up for debate and you're not going to automatically have this consequence, then merging five and six is the more appropriate way to go. Does that make sense?

Mr. Chester: I have got to think this through. For species of this lowest degree of certainty and poor catch, as much as we don't like the concept of groups of organisms or assemblages, what we really have in effect is we're not managing them. They're really part of an assemblage whether we know what that assemblage is or not because we're managing other species that are at least in the management unit. So while we can't define what the assemblage is, in effect we're managing it as an assemblage, as a member of an assemblage for which we have no information.

Mr. Nelson: Going on what you said, that is one of things you can kind of pull out of a PSA is if you are managing for one stock in an assemblage that are all caught together in a fishery and through a rigorous productive susceptibility analysis you find that the stock that you are actively managing for is more vulnerable than the rest of the stocks in that assemblage, you can make an argument that your management on the most vulnerable species is limiting your catch of the other stocks in that assemblage.

Now, fitting that into ABC and ACL requirements is difficult in justifying that, but there is a theoretical argument that one can make for that. I know that argument has been made in the Western Pacific in the tuna fisheries, and there are a few other stock complexes or fisheries that they're using that for. That is something you can argue.

Dr. Reichert: I want to come back to that – the question you had is if we get to six and seven should the ABC be zero? Again, I was thinking about, for instance, scup and tomtate where there may not be any indications that there is a problem, but simply because we don't have the catch data we set them at zero, so there may be other sources that may indicate that ABC is not necessary. The question then becomes, obviously, where do we set it?

Mr. Carmichael: The answer is perhaps not always, so should you have a directed fishery – go up to the next question?

Dr. Williams: I think you still can. I mean I think we're focused on ABC and its determination and it is the catch level, but at some level the accountability doesn't always have to be measured in catch. If I remember correctly, you could use – an accountability measure could be a survey value, even. We could use a survey index that is monitoring the population. For instance, you guys probably catch tomtate at some reasonable level.

Dr. Reichert: Well, that what I said earlier and I was trying to wrap my head around how we can potentially use fishery-independent surveys? That probably doesn't help us setting the ABC, per se, but it does give us an indicator. We catch quite a few scup and tomtate, and so we have an annual CPUE for those and a bunch of other species. So, yes, we can see what the populations have done and say, okay, it doesn't warrant an ABC of zero, so what is the ABC?

Dr. Belcher: That doesn't get that, but at least if you have seen a stable trend, I would that over time in an independent would pretty much say there isn't a lot of heavy pressure that is pushing it one way or the other.

Dr. Reichert: And in a lot of these species we actually see an increased CPUE perhaps as a reaction, as an ecosystem reaction to the disappearance or the lower densities of other species.

So then you would say, okay, if we don't have the catch data we set an ABC at zero, which is not necessary at all.

Mr. Carmichael: So basically for Tier 6 you're going to run through the same exercise as Tier 5, so does this argue for simplifying the list and just have here is what you do if all you have is catch? The first thing you do is you consider how good that catch is by sector and what you can learn from it and all the other stuff? We should merge them?

Dr. Williams: I'm all in favor of simplification. Now if we're going to throw more parameters at it, that is a different story. I am all in favor of that, too.

Mr. Nelson: Again, I want to reiterate the fact that if you do set ABC to zero your ACL cannot be over your ABC recommendations, so that would have to be set at zero. That means if your estimate of – you know, if you catch one of that, then comes accountability measures. We do recommend in the comment response – and we discussed this in the final rule that we recommend against that unless there is such a danger or it is such a rare event and it is such a danger of overfishing, we recommend against doing that because of the accountability measures.

Ms. Lange: Would you use like the average catch as a bycatch only. As poor as the data may be, if you have some data, you could use that to generate a bycatch only so you're avoiding the zero or something like that?

Mr. Nelson: Yes, we do recommend that your – if it is a prohibited species, you try to estimate the bycatch and the regulated catch and all the sources of human mortality other than a directed fishery and estimate that, and then that is what you would set your ABC or ACL at.

Dr. Belcher: So part of me keeps saying, well, we have to have Jack come and talk to us more frequently than he does with the council as far as the bycatch estimates. I mean we have approved them after the fact, but generally those have been outside of our TACs, for lack of a better term. Unless it has been built into the model, which we have had some discards built into more recent assessment, but in general there always seems to be an additional number.

Dr. Williams: Well, we're in a situation where about, I don't know, five or six years ago we didn't really have good bycatch estimates hardly other than the wonderful B2 estimates that come out of MRFSS. We know how good those are. It wasn't until recently that we started having this commercial fishery and the headboat fishery record discards.

The problem we face now, though, is we have discard estimates from all these sectors, but if you step back and look at it, it is all self-reported and unverified, so what do we do with data like that, especially if you're establishing an ABC on a bycatch that is self-reported?

Mr. Carmichael: And apparently within the logbook program and those reporting discards, after a few years they realize that though you had to report, you didn't get into any trouble for all always reporting zeroes. So the number of zeroes that got reported as discard went way up as the program grew and extended. That is a big, big problem, that discard stuff.

I think there is going to be whole lot of things to consider when you start interpreting catch. I wonder if we try to go with this workshop process would it help us maybe in the next couple of days to spend some time coming up with a list of questions or the types of insight we would like to get from the fishermen when they looked at the catch.

The first thing that came to mind was to tell them, well, we would like to know a period of time in this catch record that we're giving you where you don't feel like regulations really influenced what your catches were. Is that possible; that would certainly be a good time to know. Then tell us where you feel that regulations began to have an impact.

It would be similar to what we did at the catchability workshop that they went through and try to give them guys a timeline and say when did various electronics become common in your particular sector of the fishery. We could through and say when did regulations start to affect you.

If we have some idea of specific questions for those guys, I think we will get a lot more out of them as we go through that, and we should probably keep that in mind. There may be some time on Wednesday or something to work on that. We have merged five and six so go on to our new six, which is no catch records. What do you do here? ABC equals zero? There ain't no Cs so there ain't no ABC.

Dr. Reichert: There may be "C" but we don't know – there is no record of it.

Mr. Carmichael: Any other burning thoughts on people's minds that you really want to make we keep in mind as we begin to try and apply this. One of my thoughts was that tomorrow, perhaps, we move beyond this sort of relative discussion of how this works out and actually take a stock and try to go through and put it into practice, bearing in mind that it has absolutely no consequences whatsoever and would not lead to an ABC recommendation and should not be construed in any way that it represents a recommendation of this SSC. It's purely for example purposes. Any other things people have got in the front of their minds they want to toss out for this?

Dr. Williams: One thing that is going to come up is when we were talking about the probability of overfishing and the council recommended P-star equals 25 percent that they were willing to live with. When you get down to the catch history only you don't have an F or a probability of overfishing, you have a catch and how to translate a reduction in F to a reduction in catch level is not as easy to do. People, I think, have been assuming that a percentage reduction in F equates to a percentage reduction in catch, but that relationship is very different for every species and every fishery, so we have got to figure out how we will address that in our catch-history-only scenario.
Mr. Carmichael: I think that very thing is one of the things that hurt various recommendations that were made by this committee before.

Dr. Williams: Since we're on the subject of sticky wickets, the other one that is going to come up is the uncertainty – it sort of relates to the translation of F to a catch level is a lot of times we tend to think of these things in terms of symmetrical distribution of uncertainty and oftentimes it is asymmetrical. You can even get to the point where you could run an assessment situation,

even in a full Basian framework, where your point estimate is not at 50 percent probability of overfishing.

Your point estimate could be at 60 percent probability of overfishing, which means your buffer is going to have to be that much larger because you're already beyond the 50 percent. There are going to be some tricky things like that that will pop up every now and then that is going to complicate the system.

Dr. Belcher: Further comments? I did want to let you know, too, that, interestingly enough, I had posed to the group, when we were in Hawaii, relative to the issues of our verbal record that was taken in June that kind of got thrown back at us a little bit about using things like "arbitrary" and "ad hoc" and that basically we were saying that we were being that way in our discussions.

I had asked Terry Quinn relative to their 25 percent that they assigned relative to their catch, where did they come up with the 25 percent value? We had used a 5 and 10 percent discount but where did you get the 25 percent? Basically the answer was we used our best scientific judgment to come up with that number. It is not based on anything; that is, you know, hard-core, so and so, 1992; there is none of that citation to it.

So he kind of put the quote in, too, that basically the words "arbitrary" and "ad hoc" do carry certain pejorative aspects to them; and the reason for that is that as scientists we want certainty in what we say. We know we're in a situation where we don't have certainty, but in some cases judgment calls, based upon scientific perceptions, have to be made. It does not mean it is not a scientific decision that is being made.

So, that was kind of what I wanted everybody to kind of remember in that situation because I know it kind of got tossed back to us, but I never got an answer definitive from Monica on how that applied. If we put something forward, when is it not considered a scientific statement? It is coming from a scientific body and us making these statements forward, when is it non-scientific?

Dr. Williams: That is all discussed in good detail in the NS2 Guidelines when they come out, but essentially anything that comes out of here is going to be viewed as best scientific information available if we bless it as such.

Mr. Nelson: One additional thing to keep in mind as we're moving forward and thinking about this and trying to account for these different forms of uncertainty is you want to be careful not to double-count some of these uncertainties. You might in Level 3, in your biological uncertainty, you might run a productivity susceptibility analysis and account for the uncertainty in certain biological or certain life history parameters, but that also might be incorporated into your uncertainty estimate in your assessment.

So, moving forward it is just something to keep in mind as people go through it. You know, you don't want to start thinking of all the reasons where uncertainty exists and start checking off all these things and all of a sudden, you know, you've got this gigantic buffer. Well, if you look at it closely, you might see that you're incorporating uncertainty several times and you're accounting for it several times and unnecessarily increasing your buffer for no good reason. So,

just something for people to keep in mind as you're setting up these frameworks to not double-count.

Dr. Belcher: Yes, I think we can easily – if we do the matrix approach like Erik's outline, we can kind of ask those questions as we go; well, in talking about fecundity, was it accounted for in the model or not? If the answer is yes, then that doesn't get weighed into that factor. I would think that would be an easy enough approach for us to take into account at that second level of the process.

Dr. Williams: I think Mark is right on the money; that is an important aspect of this. Another example of where we account for things commonly is in projections we always account for the age factor, how old the assessment is, because we allow that uncertainty to propagate through time. In that sense if we have five-year-old assessment, but we have five-year projections from that, then we can still use that and it accounts for all that uncertainty due to the age of the assessments, so we don't need to double-count that part of it.

Mr. Nelson: One other thing on the notes that I have writing down here, for your ABC control rules, I wrote this down early on for a comment – I can't remember what the comment was specifically, but the ABC control rules, you really want to be concentrating specifically on your scientific uncertainty.

Remember there was some discussion of like the management uncertainty; what is our ability to manage the stock, and we want to either close down the fishery or project where exactly the fishery is on any in season. You want to keep that out of your uncertainty estimates for your ABC recommendation.

Management certainty is something that your – as least according to NS 1 Guidelines, you know, that is something that the council – that's a policy decision that the council should be making in consultation with you, but you should try to separate those two things out the best you can. Just another observation.

Dr. Belcher: I guess we're kind of a natural breakpoint now. Anybody given any thought to potential people for the review for red and black grouper upcoming in January 2010 in Savannah? Anyway, be thinking of it. If you have any names, I'll be asking again tomorrow morning.

Mr. Carmichael: The SSC Selection Committee is 3:30 tomorrow, so if you want to provide an SSC position on things like how you deal with minutes, how many people you think should be on the SSC, the socio-economic technical committee, we should probably have that discussion maybe right after lunch tomorrow or something.

Carolyn will go and present your recommendations at the Selection Committee and let them know what you think about things. The other one is when you meet and there is some thought towards perhaps not always meeting with the council; the idea being to give you some time to work on a more complete and thought-filled report as opposed to something you feel scrambled to produce 15 minutes before a committee meets.

Another reason behind that is this idea that – you know, when I was on the SSC and even now there is kind of this feeling that things come to you on Monday and the Snapper Grouper Committee meets on Tuesday and you may look at an analysis on something and go, you know, I would really like a few things changed but you realize that they're not really deal breakers.

So you know that if you were to say those have to be changed and the whole thing comes to a screeching halt and everything gets kicked back three months versus you might think that really should be changed, but, oh, well, it is not going to be changed. I think the SSC, by meeting with the council, is even more in that situation where unless your concern or comment or something is absolute critical you don't want to put it out there because it brings everything to halt.

That was one thing we were trying to get away from was the SSC feeling like, you know, if you had any comment at all it completely derails the whole process. That is even more intense now. One thought is that if you met in advance of the council, then there is an opportunity that you could provide comments, and say, "Well, that's pretty good; I would make these three little changes," and those could be made and taken to the council.

I think the process that I see the way, if we go this route, how it would function. It would be very similar to the way the ASMFC conducts technical meeting weeks several weeks prior to their board meetings, where the technical people get together and make recommendations, staff has time to get the reports together and make any suggested changes before it goes to the decision-makers.

I wonder what people think about that? The tradeoff, of course, is there is less face time with the council members. You know, it is not missed that there are times when you're discussing things and there are an awful lot of council members in here glaring down at you trying to see what it is that is being said, which some people don't feel that all and other people feel like there are eyes in the back of their head. I wonder what people think about this? How do you feel about meeting with the council? Maybe you would like to do one meeting a year where you don't or both meetings.

Dr. Belcher: I think it depends on the topic.

Dr. Crosson: I actually thought it very useful to have the council members here. I think the fact that they watch – I don't feel any pressure in the fact that they're in the room, and so I think it is useful when they sit in and observe the sorts of debates we're having, especially over something that is heavy duty as this. I understand the time pressure, and the only negative I can think about is the time pressure.

Dr. Belcher: I am only going to throw one other negative out there, and it is viewed as a Catch-22, but it is just some of what has happened in the past is where we have innocent dialogues going on between SSC people and council people, and there are some questions that get thrown out there that don't necessarily help.

As we're trying to take tentative steps forwards, sometimes those questions and those points kind of shake people back a little bit. What we had happen prior to the new group being together, we

had taken one whole meeting day in June – well, actually, no, it was group – and we made that group go forward and then the next day we went right back and reviewed everything again because we had a couple of little shaky points.

So that is my only concern is that I don't want us to get into those situations where we're feeling a bit tentative in what we're doing. As a group we're putting it forward. It is not any one of us putting an idea out there unsupported by other members. Our tentativeness I think kind of needs to be taken in with the group, is that we're all putting this forward as a unified front.

I just don't want people feeling good about what we're doing and then have one little thing come through that kind of shakes the foundation enough that they really back off of an issue and tend not to want to keep making progress forward because they're concerned about – well, you know, pointed out to me that this could be a problem.

Well, if that is the case, then I would almost rather have, which we asked for, have the person come forward to the group, state what the concerns are and let us talk about it rather than have it come in from outside and we really not all understand as a group what that person is trying to actually ferret out for information, whether it is from each of us as an individual or however that is coming through.

Dr. Reichert: And we can make those requests, right, to council or to NMFS staff to come in?

Dr. Belcher: Which is what we did; and that is the point I want to make is that as we seemed to be making progress, I don't want anyone to feel sequestered or tentative about stating what they feel is a good dialogue because they're afraid to engage in it because of something that has been said or asked or whatever.

I would rather that person come forward. If they're really that concerned that they're seeking out each us individually to ask us, I would almost rather they to come to us as a group so that everyone can hear the question in the exact same vein, you know, basically broached the exact same way.

One person might get it from one situation and have a spin on it and then someone else get the exact same information, but it is presented just different enough that it really kind of puts you back a little bit further. I just want to make sure everybody hears it the exact same way and we all have a chance to think about it; you know, again, exactly how it is presented. That is where I only see that one misstep for us was just in that situation where I was really like really saying I wish we had had a little bit more divorce so that we didn't have that shaking the foundation, so to speak.

Dr. Barbieri: Well, with all due respect to the council members, I think that for us to conduct our business and be productive in putting together our reports, you know, having meetings that are not concurrent with the council meetings will be best. I mean that way we have time to prepare our reports better and to discuss all the stuff that needs to be discussed; even do a followup for e-mail. That would give us the extra time and not have the inconvenience. To me this issue of us having to rush on a report that we are going to have to go the council meeting and present

something without us having enough time to put together a report that we feel really comfortable with.

Dr. Reichert: Well, the remark I made earlier is that I think there is also the responsibility of each of us that if those situations occur, that we ask the council or NMFS staff make the argument to the entire group.

Dr. Belcher: Yes, I think that is pretty much shown as Jessica and Mark are sitting at the end of the table. I don't have any problem with anybody coming forward and get engaged in the dialogue. I mean it's the only way that the flow is going to work in both directions.

Mr. Carmichael: I like your comments, Luiz. I think it is good to put it in terms of how is the best way to get your advice and input to the council and what is the best way that gives you the appropriate time to get your input properly crafted. For a while when we started meeting with the council all the time, the chair would go and give a report to the committee that was just based on notes and talking to the committee.

There would be a report that come out that would summarize that, and it might be done three or four weeks after the meeting. Well, what good does that do in the committees and the council when they're getting a report well after they have already acted on things? So we tried to go on a thing, well, let's try and give the SSC time to write the report at the meeting.

The problem we have run into is just getting simple time on the agenda to give you a work session; and even when we tried to schedule work sessions, it just never quite seems to work out with all the things that you have to do. We have been in situations where you have wanted extra days of meetings, and it has been difficult to get because of the commitments of other meetings that are going on in the venue with the council meeting.

If we were to meet outside of it, then if you said, you know, we need four days this week, then we would schedule four days this week. It would give you more flexibility and it probably gets you out of having to arrive somewhere on Sunday, which many people may decide is a big plus. It is going to give you flexibility, but you're not going to have the time around the council members.

It may have some delay because there may at times be documents that simply can't be prepared in time for you to meet the briefing book deadline, but that's more of a staff problem and I don't see that as something that would keep us from doing this. If it gets better advice and gets greater participation, then that's the way to go.

Dr. Williams: A topic that I have had on the edge of my mind sometimes with these meetings is if staff could perhaps be more careful about going through – I don't know if it is staff or if it is the council and what they want us to do, but try to trim down what we're really asked to do. I mean this is a scientific body and a lot of stuff that comes before us almost falls outside that realm sometimes, and we're still asked to comment on it. It wastes our time too much. If you just would somehow boil it down to these scientific issues that the council really needs addressed, then maybe we can gain some efficiency there.

Mr. Carmichael: That brings to mind something else that I think we should bring up with the Selection Committee is what is your role in the agenda; and say some group says, you know, we want to make a report to the SSC. We have an issue and we want to bring this to you. Should it just be up to staff to decide whether or not that is appropriate to the SSC or should we have maybe the chair and vice-chair of the SSC have some say in that in deciding whether or not – you know, maybe with the council chair and vice-chair deciding is this an issue that is relevant to come to the SSC; and if so, at which point in their meetings would it come.

There is this meeting, the next meeting, what have you; what are the agendas because not overloading the agenda is an important thing. Would you like to have – I mean I think you would like to have some say in some of these reports that come to you. Right now it is kind, you know, honestly, if somebody says I want this to go to the SSC, so it goes to the SSC.

If I don't think it is worthy, then I might fight for it; or if somebody else on staff doesn't think it is worthy, they might fight for it, but it kind of puts you sometimes personally at odds with other people where you don't want to be so you just let it go. But maybe an executive committee, per se, that works on that might help.

Dr. Belcher: I think the hard part is that we made that statement many moons ago about wanting to be involved, and the problem was be careful what you ask for, because we wanted to see it at many stages, and it was a particular document that really actually kind of opened the door to that because of significant word changes that happened, that someone caught that wasn't caught earlier on.

So that was where, well, now, everybody is married to projects; and you get a particular item on the agenda and you carry it through until it goes to bed. That is where that is kind of coming through, but at the same time that was where – I know there was a little bit of confusion when I sent my e-mail out.

The main thing I wanted everybody to do is whatever your assignments had been in December, there is a briefing book that is in front of the council, you can at least see what they're looking at relative to that item. It's up to you if you want to read it early, if you want to wait until later when you get it back again if it comes back up at the next meeting, however you wanted to look at that. That last agenda I think was pretty much a testimony to issues of – we had a lot of stuff in front of us and some of it we were like what do we do with it, what do we do?

Mr. Carmichael: And it is one thing if it is, you know, here is a document the council is working on and here is where it stands, it brings you up to date, but if it doesn't take any of your time and the meetings are so valuable that you can read it at your leisure when you get around to it, then that is not so bad.

But we will have people who will come and say I want to give the SSC a presentation on my discard mortality study, maybe, or my life history study. We want to be objective in deciding who gets to do that and who doesn't, and is it something that maybe we approach the chair and vice-chair and you put it out to the group and say do people think this is something you would like to have a formal presentation on or will it suffice for you to get the document? Should we

go to the full SSC? What do you think? What does the SSC think? Do you all want to have a say in that; maybe have an e-mail poll. If the majority says, yes, I want to see this presentation, it is worth my time, then we will do it?

Dr. Williams: I would prefer we trust our executive committee and the staff.

Ms. Lange: I think the thing is that you're a little more aware of what the hot issues are going to be that we're going to need to get through, so I think it would be easier for you guys to whittle through and say, well, they're already overwhelmed rather than asking us. We may just say, oh, that is interesting and then realize, whoops, we have added to our –

Mr. Carmichael: I think it would be important to make sure that we're fair in how this applies; whereas, it shouldn't be if, well, if it's a request from council staff, then it automatically goes in no matter what versus, oh, that came from some guy – well, we're going to ask if we do that one. I think more involvement with you all on the preliminary agenda and letting everyone on staff know if you want something for the SSC, we need to know about it a month in advance of the meeting and you guys get a chance to comment on it.

If you raise any questions about anything and are not sure, we will have the opportunity to say we will get back with the person and find out what they really hope to achieve by presenting it to you and decide if it needs to be there. We want to make sure that we're fair, though, in how we apply this.

Dr. Reichert: I want to make one comment on not meeting with the council, because for some of us or for some of the SSC members that may mean yet another meeting. Some people need to be at the council meeting or a part of the council meeting so they need to travel there. Also, in the past, especially those of us who teach, in terms of planning the meetings, maybe we can plan way ahead so we can look and see how many SSC members we actually have at the meetings that we are planning.

Mr. Carmichael: Our intention would definitely be to have set times. We know when the council meeting weeks are. They're never going to change, so we could pick weeks that work with your schedule and with meeting the council needs.

Dr. Belcher: The other thing to throw out that was an idea from a few years back was the issue of representatives from the SSC doing the report in their state. If there is a lot of separation, so if it was Florida and I couldn't go as chair to do the report, then Luiz would go or South Carolina and yourself could go or Anne could go or North Carolina, Erik or Scott or whoever; and it would be something that as part of the report we can have like an executive summary, so to speak, and that is basically the report that you give to the council.

When Luiz and I have gone in and presented in, we have basically told them focus to what information is there. I can't speak to anything beyond that without going back to what the general record is, but you just answer those points and refer them; and if there is anything more pointed, then you direct them back to the dialogue in the full report. We could easily do that if people are open to that, too. We will go ahead and break for today.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Tuesday morning, March 3, 2009, and was called to order at 9:00 o'clock a.m. by Chairman Carolyn Belcher.

Dr. Belcher: Let's get started this morning. I appreciate everybody's hard work yesterday. I was pretty happy with our progress, and I am sure you all were. Now the daunting task begins of applying it to actually seeing how we're going to work some of these limits.

Mr. Carmichael: What would you like to do this morning?

Dr. Belcher: Any ideas on what we want to do; do we go back to our original examples and now start trying to work with what we have?

Dr. Barbieri: I thought that if we came up with sort of the matrix – if there is going to be an excel or whatever type of format that we want to follow to start developing a matrix, something that is going to force us to be a little more selective on what we put there, and having that process.

Erik's suggestion is going to also generate a process that is going to force us to go through each one of those and either you check it or you put not applicable or whatever, data not available or information not available, whatever, but it would keep consistent on what we consider for each of these species.

Dr. Williams: Yes, I kind of agree; that might be the next step. I had sent an excel file to John and basically laid out each of the levels we're talking about and the criteria and maybe what we need to do is go through that and figure out how many criteria we're going to use within each level. For instance, we had the stock status; is the dichotomy just going to be if it is overfished or overfishing, not overfished or not overfishing and then that population threshold, just three levels; or do we want a finer detail than that, but go through each one of these and actually sort of hammer out the nitty-gritty guts of it.

Dr. Belcher: It sounds like a good starting point. We will have John put it up on the screen and we can talk about it.

Dr. Williams: One other category we talked about yesterday that I don't know if it should be an official category is the age of the assessment. I don't know if we should have another column for that or not. In thinking about that, in most cases new assessments coming out of SEDAR, that is not going to be an issue because there will be projections associated with that which will sort of take into account the age of the assessment, and so that wouldn't be a criteria we necessarily need to address with any of the new assessments that might be important for older stuff.

Dr. Belcher: One of the problems we're going to run into is if we have an assessment that's old enough that has an overfished assessment we're going to technically have to put it into rebuild, right? Then the question would be how do we come up with a projection relative to that particular assessment?

Dr. Barbieri: Well, I think in situations like this we're going to have to evaluate as a scientific body and use some discretion in a way to either feel that we can proceed with some recommendation for the rebuilding plan or we say, listen, this is so outdated and the methods used are no longer applicable, and we are going to actually have to put this back in the freezer and recommend this go forward for an update or a new assessment; something like that. I think we're going to evaluate some of these older ones on a case-by-case basis.

Ms. Lange: I agree with that; it has to be done case by case, but as far as Erik's first comment about where it fits in, wouldn't that be part of the uncertainty about whether it is complete or 75 percent. You know, we're uncertain because – you know, assessment itself seems fine, but we're uncertain because it so old that we don't know what has changed in that time. I think it is already captured in that.

Mr. Carmichael: Or it could captured in the assessment information if you think it is so old that your estimates aren't reliable; sort of between the two you probably will be able to work that in.

Mr. Chester: Yes, I am comfortable that these four major categories capture pretty much what we're going to need as a group to decide and make recommendations. There are a lot of individual factors that we talked about yesterday that aren't explicitly mentioned in here, but there are homes for each of those under the major categories. I am comfortable that this is a good. broad kind of way to proceed.

Dr. Belcher: Just for my own throw-out, when we talked about 75, 50, 25 percent complete under uncertainty, how were we going to determine that percentage? Do we have some classification – I mean I'm just asking because everytime I have somebody throw something up and you kind of say, well, it's moderate, fair.

We know that there are kind of quartiles or percentages that kind of coordinate to that, but do we have a means by which when someone says 75 percent complete; that means you have some list and 75 percent of them are met? I think that is a question that we will get popped on, and I'm just asking to kind of throw it out for everybody to think about that. That quantitative thing automatically implies something quantitative to it.

Dr. Williams: You're right, and I am open to changing that. We could even reduce it all the way down to three categories of just complete, partial and none and just leave it at that.

Dr. Barbieri: I agree; that's a great point. It's one of those things that we're going to have to be thinking a couple or three steps ahead about how people are going to be interpreting those things. That scale there sounds perfectly reasonable to me, but I can see people later on finding problems with it. It is easier just to go with the qualitative.

Ms. Lange: Well, I think even for us, when we're trying to categorize things and trying to maintain consistency in the number of species we're talking about or number of stocks, to be consistent and categorizing it by that much detail. I think this is much better and possibly even one more category.

Dr. Williams: In thinking about our past assessments, when I made that presentation and discussed the difference between snowy grouper and tilefish and the way we handled that with characterizing uncertainty versus some of the more recent assessments just on a suite of sensitivity analyses; if we just went with like a three-tiered system here, complete, partial and none, they would all fit into the partial.

I think we at least need to be able to separate our snowy grouper and tilefish situation from the remaining so we probably need a four-level system. I don't know how we term that; maybe complete, mostly complete and partial and then none; I don't know.

Dr. Belcher: Could you characterize by just how the uncertainty was assessed? I mean one category like you're talking is relative to sensitivity runs, which is basically tweaking input, and then another one which is actually using maximum, likelihoods and Basian, which would give you a more quantitative – do you know what I mean?

I don't know if that is necessarily the way, but might be a stronger measure than the other. I don't know; I'm thinking of something that you usually have some quantitative output that says, well, as a sensitivity run you're just kind of seeing the generalized changes and output. It does perturb or it doesn't perturb it. That is just an idea.

Mr. Carmichael: Will we ever get to complete given the snowy grouper and tile are still partial? Do we need a different word maybe for the top?

Dr. Williams: Maybe we consider the snowy grouper and tilefish as best as we're going to get at some point, so maybe complete/mostly complete, and then a third tier would be partial, and then our example for the top tier for this would be snowy grouper/tilefish assessments.

Mr. Carmichael: And call it "most complete". It may not be complete by everybody in the world, but it is the most complete that we've ever had.

Mr. Chester: I suggest perhaps we call it "high" instead of "complete" and we recognize this as a continuum and we just identify points on the continuum.

Mr. Carmichael: High, partial and none?

Dr. Barbieri: Since we're kicking this around, if you want to have four levels just to reflect more the scale there, high, medium, low and none.

Dr. Belcher: Then we will still have to come up with a way by which we determine high from medium, medium from low.

Mr. Carmichael: I was just thinking that. This is a little off topic but maybe the way to go about this would be to fill in the assessment information for every species; figure out where every species fits on Column B. Then you go through and fill out assessment uncertainty. That might be better than taking a given species and running it across the rows, because then you might have a different opinion of the uncertainty three hours later or three months later when you pick up

another species as opposed to, all right, everything that has got an assessment let's take the time to characterize its uncertainty with all of them before you.

Then you could compare and contrast because we know a lot of fish are going all end up in the bottom with no information, anyway, and we have probably 15, tops, that we would be debating. That might be the way to go through it. That would work.

Ms. Coakley: Just a quick comment on D-4, the overfishing and overfished. In either D-4 or D-5, if you're overfished you're under a rebuilding plan regardless of whether you're overfishing or not overfishing. If you're not overfishing you're either at whatever your Target F is or whatever you're trying to do for a Rebuild F. My suggestion would be if you have rebuilding in D-5, maybe you mention rebuilding in D-4 or "need to initiate rebuilding plan". It is just a suggestion.

Dr. Belcher: Is there a possibility of combining; what does the group think about that?

Dr. Williams: Or do we even need rebuilding in this? I mean rebuilding is a unique situation and we're going to have to deal with that separately sort of, anyways.

Dr. Belcher: Well, it might be worth it to keep it in and at least say that at this point it kicks to something different that we haven't even talked about yet. I mean that might be a whole separate discussion that we have to have relative to rebuilding, because it carries its own uncertainty, too.

Dr. Williams: Right, the SSC is going to have to choose a rebuilding target. That is one of the things in the NS1 Guideline, and so whether we stick this here or not, it might just confuse the issue. I think it should be pulled out all together because if you're rebuilding, then this matrix will still be useful for us in deciding a rebuilding target, but to have it as an actual item within the matrix – because we're actually going to be applying this matrix in deciding a rebuilding target.

Mr. Chester: So then we do need an overfished but not overfishing category?

Dr. Williams: Yes, right.

Mr. Chester: But just don't call it rebuilding at this point.

Dr. Belcher: I kind of feel like this matrix should apply to everything; and then once we get to that point where we determine we do have one, we're going to have to have a whole nother level that applies to one that we're going to have to come up with a rebuild schedule for. You know, we have a thought process and it is going to apply to everything. It is just a matter of whether it's going to be a more straightforward approach in one situation or we actually have a whole nother level to punt to with projections which brings in its own set of uncertainties that is not necessarily inherent in how we're evaluating the stock status and the resiliency of the stock.

Mr. Carmichael: You've got an overfished and not overfishing stock in red porgy. You've have got one to deal with if you want a clear example under a rebuilding plan set way back. I guess

keep it mind that these are annual things and exercises or at least every couple of years the SSC will go through.

You would pick the rebuilding plan – you know, take red snapper, you're going to pick a rebuilding plan that is going to be in place for ten years, forty years, until whenever you get another assessment, but during that time before the assessment you're going to have to go through reviewing where that is and applying some of this stuff and set your ABC and consider how things are going. You may get an update that doesn't change the rebuilding timeframe, but maybe changes your ABC, so you have to apply this outside of that rebuilding determinations. I think this will work good.

Dr. Barbieri: Just another question about Column E there, I wonder if we want to assess those things separately.

Mr. Carmichael: Productivity versus vulnerability?

Dr. Barbieri: Yes. I am thinking about productivity being more related to growth rates and recruitment success and vulnerability and susceptibility being more related to sort of catchability, spawning aggregations. Something like goliath grouper you can get very close to and shoot them in the face if you want to, so in that case it is very susceptible to overexploitation.

Mr. Carmichael: Susceptibility, do we mean to overexploitation or to capture? You're saying to overexploitation and not as much as more of a catchability sense or susceptibility to being interacted with by the fishery. There could be a different perception of susceptibility. We should make sure it is clear.

Dr. Barbieri: Right, in a way I'm thinking like – I mean if you're fishing over the reef track from a headboat, you may not be able to help it but catch a lot of tomtate. However, that is a very high productivity species. I don't know; I'm not sure about if we would get better evaluation by separating those.

Dr. Belcher: One thought I had – and, again, I know given the caveats of it needs more tweaking – the LESFEST Report is in your documents and may characterize what they look at by susceptibility and productivity, and it may be worthwhile to look at how their table are structured right now and see if it is something we want to work with and expand off of and at least see if it covers what you're thinking in terms of that.

My envisioning is that we would be looking at this PSA type analysis somewhere to characterize this, and it gives you that whole triangulated where it falls relative to those three ranges that we're talking about, and using that as a means of classifying it. So I don't know if that is just a point to maybe the group can look at to see if that is something if you feel – because it already has a draft out there, maybe we can expand on it, tweak it to be what we need it to be, but again just kind of work off of an idea that has already been put forward. Just a suggestion.

Ms. Jensen: We also might want to consider susceptibility to things like environmental variation. Some of these species are dependent on estuaries. They might be more dependent on environmental factors that influence year class strength, that sort of thing.

Mr. Nelson: I know it doesn't help right now at this moment, but by the end of the month Headquarters is planning on publishing the Productivity/Susceptibility Analysis white paper that will kind of help spell out exactly at least one option going through and ranking stocks or stock complexes or species using the PSA Analysis.

The other thing is there a little bit – I think there is often, when discussing productivity, susceptibility and vulnerability, there is a little bit of confusion in the terminology and I think it is important to keep the terminology straight. Productivity is the ability to reproduce and life history parameters. Susceptibility is susceptibility to the fishery, and vulnerability is actually the combination of the productivity and susceptibility together.

It's very often that in conversations people are using susceptibility and vulnerability interchangeably, but the terminology sometimes isn't correct. They're actually referring to vulnerability when they should – or they're talking about vulnerability when they're saying susceptibility, so everyone keep that in mind when going through this to avoid some confusion.

Dr. Williams: So maybe under this one we should just put – because I think we all sort of are thinking in terms of the results of the PSA Analysis, so maybe the categories under here should just be the rank; high, medium or low rank from a PSA Analysis, and maybe even at the heading put "results of a PSA Analysis" or something like that.

One thing that we should jump back to on Column D is this concept of a threshold population size. We ought to flesh that out a little more with some discussion on what threshold population size would we like to size to use, what are the consequences of getting below that, that sort of stuff.

Dr. Barbieri: Erik, I agree that this is something that needs to be done. I just wonder if the complexities associated with determining this would warrant sort of like a dedicated project of sorts. I wonder how much analysis it would take to come up with those values.

Dr. Williams: I don't think an analysis is going to tell you what is a good threshold population size. You can do sort of these population viability analyses as they do for salmon and all that, but that doesn't really apply to these species that we're dealing with, because we don't have dispensation in the stock/recruit relationships.

There is not a point at which – as long as we continually assume like a Beverton-Holt Stock/Recruit Relationship, there is no point at which you get the population so loaded that is going to "crash"; because according to our current model of stock and recruitment it will always eventually recover if you lay off of it.

So, really, what it centers on is what are we comfortable with as biologists as a lower limit for our population size. Part of this can come in thinking in terms of what is the criteria for

threatened listing, what is the criteria for endangered listing? That is usually just a percentage of some virgin stock size; so, how well would we be willing to let these populations get before all of us start squirming in our seats and start worrying about the populations. No analysis is really going to help us with that. That boils down to our gut instinct about the populations and the biology of these fishes, especially given the spawning aggregations that occur. At some point you might lose all spawning aggregations. There is a potential there.

Dr. Barbieri: I'm comfortable with that. I mean personally I'm comfortable with us having sort of a qualitative look and coming up with a recommendation based on our gut feeling of sorts, you know, using our professional judgment and knowledge of the biology of the species to come up with those values.

I have kind of sort of the same concerns that Carolyn brought up before that later on it is usually going to be associated with specific thresholds. It is going to be seen, to some extent, as a reference point, as a biological reference point, and I wonder if we're not going to be pressured to provide a little more analytical detail for how we got to that point.

Mr. Chester: I don't think there is going to be a one size fits all. I think it ought to be linked to the life history characteristics of species and perhaps something having to do with time to recovery along the lines of a Beverton-Holt kind of spawner-recruit relationship. We have species now in the shark complex where we're looking at 400-year recovery times, but each of these species that we have we might be able to come up with some sort of rebuilding criteria or time to rebuilding that might serve as a guide for what this bottom-line limit might be.

Dr. Belcher: So how do we want to proceed?

Dr. Barbieri: You mean in terms of threshold population size?

Dr. Belcher: Yes.

Dr. Barbieri: Well, let's start from the approach that Erik suggested. I think that we can get started there. I am comfortable with doing this. I am just discussing this with concerns that we may be pressed in the future to provide a little more quantitative and analytical framework later for those because people are going to be interpreting those things as biological reference points in the future. I'm comfortable getting started and later we decide as a group if we want to do something a little more detailed.

And, again, if I understand the concept Erik brought up, this is intrinsically related to the productivity of the stock, you know, that compensatory capacity; and depending on the longevity, generation time, growth rates, reproductive modes, there will be a lot of things that will influence the ability of species to rebound, I guess, from different levels. Some, we want to keep the bar even higher than 10 percent. I am not sure 10 percent would be good enough across species; I am not sure. And, again, just to emphasize my point, I don't think we can say, well, 10 percent will work for something like vermilion snapper and gag grouper.

Ms. Jensen: It is going to be on a case-by-case basis.

Dr. Williams: Right. Well, I think we're overcomplicating it, though. I mean, really, the intent of this – I don't think it is biologically related. Yes, recovery rates are based on biology, but this is just simply sort of a backstop. In other words, if we're letting the population already get below msy, that is one thing; but now to let it go even further, do we want to incur some penalty for letting it get even much further. So 10 percent is just meant to be another threshold that if you've let this population already get below msy and now you're letting it get even further, there has got be some price to pay, so to speak, for letting the population get that low.

Dr. Barbieri: And I agree, but I just wonder if this is not a management action here. If we're not going to be building this based on an actual scientific framework, the council could – and we should advise them perhaps to look into this. This is a valid concept and I agree it is something that we should be doing, but if it is going to be a number based on building some level of precaution from a management standpoint, I will be more comfortable if the council sets that up.

Mr. Carmichael: I was seeing this not so much as a number about building precaution but a number that serves as saying it is so low we don't need to go through all the above. Clearly, there should not be a directed harvest. If you came in and the biomass relative to virgin or as another better metric the percent SPR if the virgin biomass could be highly uncertain, we should probably consider that.

But if you came in and it is 5 percent; do you need to go through all of the above to set the ABC and set a buffer and all of that stuff, or should you just say, you know what, first of all, there is no directed harvest, so now let's talk about rebuilding, or do you want to have to, you know, oh, it is 5 five percent, it is 2 percent, I have still got to go through all of this?

So I see it in a way as sort of a jump, jump to this point if the biomass is this; and it is not so much about a risk, it is just avoiding you going through PSA Analyses and all of that stuff up above. Because if it doesn't do that, then if it is going to be evaluated on a species-by-species basis, then you're going through all of the above and you're not accomplishing anything by having this in there.

So unless it is like a hot button that jumps over to everything else, you just say, okay, we don't have to worry about all this; ABC is zero; there is no directed fishing. I have got my ABC and now let's talk about the rebuilding plan.

Dr. Williams: I don't know if this helps but here is the section in the NS1 Guidelines that mentions this. It says, "The ABC Control Rule should consider reducing fishing mortality as stock size declines and may establish a stock abundance level below which fishing would not be allowed."

I mean, clearly, you can see the west coast influence in this language is pretty evident, and they're suggesting that we actually have basically a control rule that allows a function of the stock size – our reduction in fishing mortality be a function of stock size. We haven't gone that far because we have just done these broad categories of overfished and overfishing, but I think we can at least make the one step of having a threshold population size. The other one is or we

could just not have threshold population size, but then have a functional relationship between the reduction and the stock status.

Ms. Jensen: For some of these stocks, we just really don't have a stock-recruit relationship. It is just so environmentally driven that is going to be a hard thing to determine numerically.

Mr. Carmichael: That is why I was saying I think it is – yesterday when we talked about this, I was thinking of very small numbers that avoids you having to make that determination. It doesn't mean that you can have a stock that – let's say you pick 5 percent. You can take a stock and it comes up to be 7, 8, 10 percent. You could go through your exercise and conclude that even in that case it should be zero and no directed fishing, but you would go through the exercise versus if you assessed that stock and you decided your assessment was reliable and that number was reliable, then you would say, well, it is 5 percent; there is no directed fishing and you wouldn't go through the PSA and everything else.

Whereas, in the other one you may say, well, it is 8 percent or it is 10 percent, so let's look at this close and decide if it can support anything, and then you go through the PSA and through the extended discussion of all the other merits of the assessment and the susceptibility and vulnerability and all of that good stuff, and you may still conclude that it is zero, but you would have gone through more to get there.

I think this should be a very low number, 10, 5, somewhere in there, maybe 10 is too high, but it should be a low enough number that you feel that you're comfortable with not having to go through all that and that clearly you should not have directed harvest when it is 5 percent of virgin, 5 percent SPR.

It should be a low enough number that you would say there is no stock that we would ever want to allow people to a directed harvest when its biomass is that low. I think that is the purpose of the threshold; that it kind of simplifies for some stocks. Maybe you would only use it for one or two stocks, and it isn't the only the case where ABC is zero.

Mr. Chester: John, I could go along with that, but I just want to point out that by establishing a line like that you might be setting yourself up for the case where if a fish were 7 or 8 or 9 or 10, that people would say, well, we're not even down to the threshold level yet and it could actually boomerang on you for a fishery that was in pretty bad shape.

Dr. Belcher: I was just thinking if we're looking at the endangered species criteria, what about when it receives a threatened criteria? I mean there are still great pains that go through applications to threatened species as well. They're not saying they're completely in the toilet yet, but they're definitely on their way on the downward slope.

Again, without seeing the percentages, that's probably not the best way to assume that, but to me if you're looking at an animal that is endangered, the pressure should have been lifted a long time ago. To me I think the pressure should be – you know, at that point we should be looking at when we really have a chance for it to possibly recover in a threatened status, to apply it there. But I don't know, that just an idea thrown out.

Ms. Lange: Well, I would think we would be trying to do the regulations by fisheries management rather than by the Endangered Species Act so that our criteria, our bottom threshold would kick in long before people were concerned about ESA kicking in. The whole point is to be managing the fishery and not waiting for it to get to the point where someone else steps in.

Dr. Reichert: Well, I was thinking about red snapper where we are at, like, 2 or 3 percent, which is way below even the levels that we are thinking about and the implications and the complications that is causing at the moment.

Mr. Carmichael: And to carry that example further, a directed fishery is really not an option because you cannot end overfishing with any directed harvest and the discard losses from other ongoing fishing activities are going to exceed the allowable – they're going to exceed the exploitation and end up in overfishing. So you're in a situation where many other fisheries are going to be impacted by actions to end overfishing, so that argues that the real threshold to say you can't direct on this species is considerably higher than where you are with red snapper right now.

I like the comment about endangered species. Yes, it is about fisheries management. Wouldn't you want to end directed harvest long before you get to an endangered species level? What is the threatened level; is there a set biomass or anything?

Dr. Williams: It is not set; it is evaluated on a species-by-species basis, but if you look at some of the populations that they have declared endangered, sometimes 5 percent is the threshold that is used; that if it is below 5 percent. Now that tends to be for the larger mammal populations and things like that. For fish populations I think it is lower than that, but somewhere around that 5 percent.

Ms. Lange: A lot of that depends on public input. If the public is concerned about something, that is what initiates the decision. Again, I think we want to look at something that is going to prevent having to worry about – right.

Dr. Barbieri: Well, I am comfortable with the approach that John suggested. I guess I understand it better now. My worry about having one single number across species was the fact that number may not be high enough for some of our more vulnerable or more sensitive to overexploitation species, because we're going to have a range of productivity across stocks. But, if we set it as the lowest bar, even the ones that are above; I mean we may decide by going through the process that we're going to still suggest no-take anyway. I think that covers all bases.

Mr. Nelson: According to the National Standard 1 Guidelines, if the stock becomes overfished, which we're going to assume is somewhere in the neighborhood of anywhere from, depending on your stock, you know, between 0.8 Bmsy and 0.5 Bmsy, if it becomes overfished, then it needs to enter a rebuilding plan.

So, that is at a threshold at which management is going to have to tighten up fairly strictly for these stocks in order to get them back up to Bmsy. So, I find it curious that we're talking about

stocks that are then continuing – somehow continuing to get down to 0.1 Bmsy and at what point do we just completely stop fishing on them?

And, there is a lot of room in between that, you know, overfished condition where you have to instigate a rebuilding which should have pretty strict management measures in it and that lower level at which you're saying no directed take. I mean it is a good exercise to go through, but hopefully the management actions during that intervening time, if they're seeing they're not reaching the rebuilding marks, then they will have taken additional actions before the population gets to that point with the exception of environment – the only problems could be like environmental concerns or bad data or missing data or not getting your assessments and things like that.

Dr. Williams: Yes, well, welcome to the southeast, Mark, because the duration between our assessments oftentimes is six years or more and you can have a situation where you've assessed it one time and it looks like it is right at msy, and then you revisit it six years later and, low and behold, you're way down below what you ever thought you were.

The other problem we have, which I agree we have been talking as if a stock is headed in that direction, but really this is going to address the thirty-some-odd species that we haven't even assessed yet and where they fall on this whole spectrum. I agree, once management is working we shouldn't ever get in that situation, but we haven't even gotten to that point here.

Dr. Reichert: That is exactly what I was going to say.

Dr. Belcher: Okay, further suggestions or comments on threshold populations?

Mr. Carmichael: Number, anyone?

Dr. Williams: I say 10 percent and we can use the west coast as precedence.

Dr. Belcher: So there you have it.

Mr. Carmichael: What was that west coast reference, to put it in here in the note?

Dr. Williams: The west coast uses 10 percent and we can just state that as a precedent. Yes, this is 10 percent of the virgin condition. Let's make sure we're all clear on that.

Mr. Carmichael: Biomass, spawning potential, depending on the assessment and information available?

Dr. Williams: Right, yes, it could be measured as either a percentage of virgin or as Alex just suggested the SPR rate. Now, in doing this, one thing I will point out is snowy grouper is below this 10 percent, so it will have immediate implications. I don't how we would address species that are already below this 10 percent but are already in a rebuilding plan.

Mr. Carmichael: Well, I think you're looking at snowy grouper in the deepwater complex. One of the things the council is considering in Amendment 17 is no directed harvest for the deepwater complex and closing that because of the speckled hind and warsaw grouper concerns. It could have immediate consequences, and I think they're aware of that and probably not all too surprised.

The comment has been used set us at 80,000 pounds or whatever it is is so low you might as well just shut it down, anyway. So, yes, I don't it would come as a shock if you did this, and then in June you said, oh, yes, snowy grouper, guess what, snowy grouper falls into this. I think that will be water under the bridge by June.

Mr. Chester: A procedure question; I am assuming we're going to present to the council as ABC control rules and they're going to either approve them or modify them or turn them down.

Dr. Williams: Yes, right, this is definitely just step one because the council has to get involved in the ABC Control Rule, too, and they have to have input.

Mr. Carmichael: I believe officially they ultimately approve the ABC Control Rule after working with the SSC is how it is worded, so we're continuing a process we began last June. For finalizing, everyone agrees with that 10 percent value; heads nod all around the table; no objections.

Dr. Crosson: I am not necessarily objecting. It is the virgin stock that makes me wonder a little bit. Last night Roy was talking, when the fishermen were asking about the virgin stock, and Roy was saying that it wasn't the policy necessarily in trying to achieve some virgin stock that was in some mythical past, but just actually gets us to a – I think he used msy as the standard when he was talking to them, so I'm wondering why we have virgin stock listed here as that is not necessarily an achievable standard overall.

Mr. Carmichael: Well, yes, and it doesn't mean you're trying to get there, but it means a proportion of that. I think it is like virgin condition. It is not stock because then it is not necessarily tied to, say, virgin biomass, which could be very uncertain, but it could be tied to spawning potential.

So virgin stock to a spawning potential would be a hundred percent. There are virgin conditions for a stock, various metrics that reflect the stock is virgin condition, so ordinarily it will be measured by the assessment and the metric may vary. So if you had a stock you didn't trust biomass, then obviously you wouldn't want to compare your current biomass to your virgin biomass if you didn't trust your virgin biomass, but you may trust your spawning potential measures because they require a little bit less. So try to leave it open, so I hope that is clear enough.

Dr. Williams: Just to read the part in the NS1 Guidelines that mentions the ABC Control Rule is that it says, "Each council must establish an ABC Control Rule based on scientific advice from its SSC". I don't know how the council is going to interpret their ability to completely rearrange what we have done or just accept it.

Mr. Carmichael: I think if you're well reasoned and present this clearly to the council, they have a lot of support for what has come out of their SSC, and actually they would probably go along with what you provide to them.

Dr. Belcher: Are we ready to apply one through the process? We are at a natural breaking point, right? We will take a break.

Dr. Belcher: We are going to go ahead and at least start thinking about what species we want to look at. Anne had a question specific to the 40/10 rule. Erik, could you give her some clarification possibly?

Ms. Lange: I was just wondering – and we both have the same question – 40/10 is if a stock drops below 40 percent SPR, that the ABC is dropped 10 percent from optimum yield?

Dr. Williams: No, the west coast uses the biomass – when the biomass is at 40 percent of virgin, that is their msy measure, essentially, or msy proxy that they often use. If it gets below that, then there is an actual linear relationship between the amount of reduction in F relative to the stock status; so as you go from 40 percent down to 10 percent, there is a linear decrease in the F rate that is allowed until you get to 10 percent when basically it is no fishing.

Dr. Belcher: John is going to send around a current copy of the spreadsheets so everybody will have it. Have you given some thought to which specie we want to start with?

Dr. Reichert: We talked a little bit about this, but this exercise is just an example as we did with the previous one? Would it be useful to populate this with species that we are talking about, snapper grouper and all the other ones, at some point? Were we thinking about doing that at this meeting or as a next step?

Dr. Belcher: I would think to do it as the next step, but I'm open to suggestion, certainly. I agree that I think that probably one of the best things we could do is walk through relative to those species so that we have the table.

Dr. Reichert: Because I feel that once we start –

Dr. Belcher: Like what John has right now.

Mr. Carmichael: I started listing the species in the order of SEDAR assessments on the spreadsheet which is on the screen before you and you were just e-mailed, so by that ordering red porgy came up to the top, because that was SEDAR 1. When we were talking about this earlier, my thought was if we went the assessment information and filled in the box for all the assessed species, we would avoid being inconsistent, perhaps, on how we determine assessment information, being inconsistent from doing red porgy across all criteria. I think the assessment uncertainty perhaps is the place for the biggest concern. If we do all the assessment uncertainties, then we can compare and contrast red porgy versus golden tile versus red snapper.

Dr. Neer: Sorry, I was at the mackerel committee. You may have already done this, but from what I see from this table, John, is this designed to be sort of the summary table of once you've gone through all your things you're rating, you're rating like the assessment level, you're rating the biological information, or is there going to be separate spreadsheets?

It would be like, okay, you have assessment information. Under assessment we have which parameters do we have, what is our belief – you know, to me this looks like this is the summary table after you have looked at each individual; do we have Fmsy, Bmsy, B, F? All of that feeds into what we put in that box for assessment information. Do we need another table for each species that breaks down what do we have for each species?

Mr. Carmichael: For some we may in which case I think if we come to that and we decide let's get some details about this and make the judgment, we'll just pop over to another sheet and have a detailed scratch sheet for every species where that is necessary. I think the assessment information is pretty cut and dried, so it should require too much additional work. We know what is there.

We know which ones have Fmsy versus which ones don't. The uncertainty characterization, we may need to do some work. The stock status should be clear. Ideally, if we had a PSA Analysis we could plug in the numbers and roll with it from there, but we may need to do some scratch work on that one, too.

Dr. Barbieri: And, Julie, just to add to what he mentioned, remember that yesterday on the descriptive, you know, the write-up of the criteria it spelled out there some of those things.

Mr. Carmichael: So I pasted over here in Column C just the levels that we had for assessment information, and I think those are the proper ones. Do you want to go through and fill in the blanks?

Dr. Williams: I think red porgy is actually a Level 1.

Mr. Carmichael: Vermilion, two?

Dr. Williams: No, I think it is a 3 because we used Fmax as the proxy for Fmsy. Black sea bass is either a one or a two; I am going to have to look at the assessment. Luiz, yellowtail, that was a one as I recall. You had msy, right? Golden tile, my recollection period is getting shorter; that was a one.

Dr. Williams: I am pretty sure that was a one.

Mr. Carmichael: Snowy grouper.

Dr. Williams: That was a one, also.

Mr. Carmichael: I threw in goliath; this was an assessment that was done and reviewed. It actually came in, I guess, back in like SEDAR 3, and they didn't go anywhere. Then the review

panel from three decided you can do something on that, so they did and it went to another review panel and they said, well, you did something, but it still doesn't tell us a whole lot.

That assessment's biggest problem was estimating current F because they did not know the effectiveness of the moratorium that was in place, so in that sense you had estimates of F, but you weren't really certain which potential series of F estimates was viable, so we ended up without having a current F estimate, really. It was interesting.

It is close to a one, but you don't know the status because you don't know what your management has done. Well, you have F and you have proxies. It is either a three or a four with significant caveat due to uncertainty, and this may be one where the uncertainty characterization and the stock status stuff really affects what you with it though you have reasonable assessment information. I could see this being a three, a two or a three with significant uncertainty problems.

Mr. Chester: This is a very unique situation because even the assessment was based on a very limited time series from limited areas, so it is really its own thing.

Mr. Carmichael: Certainly the catch history is fairly reliable, kind of a four and maybe a three.

Dr. Barbieri: I am drawing from memory here, but my recollection is that wasn't really completely blessed by the review panel, right, so if it wasn't –

Dr. Neer: I wouldn't say that the proxies were blessed, so I would just say the catch history was valid.

Mr. Carmichael: In terms of what is truly considered reliable and able to be considered in the management, we're probably looking at a four. I can live with that. This works!

Dr. Reichert: Gag.

Dr. Barbieri: Three, perhaps.

Mr. Carmichael: Wasn't your stock-recruitment relationship accepted for Atlantic gag?

Dr. Williams: Yes, it was.

Mr. Carmichael: Quickly, red snapper, one.

Dr. Williams: No.

Mr. Carmichael: You had a proxy; they didn't trust msy. Amberjack.

Dr. Williams: Actually I am seeing an interesting issue with our criteria. We have no number twos up there. Well, you just put red snapper as a two, but technically that should probably be a three. So is there a two; does two exist?

Mr. Carmichael: Well, at one point I thought that vermilion would work out as a two, and then we realized we used a proxy for vermilion. The question sort of comes in can you get msy if you don't know anything about biomass? And once you've got F you probably know biomass, so the two kind of go together.

Mr. Chester: The real question is would we ever get a two?

Dr. Neer: I think we actually did but I'm going to double-check in SEDAR 11; in the large coastal. I am going to double-check right now and see if we actually end up using proxies or what was decided.

Mr. Carmichael: If you have Fmsy and you have a stock-recruitment relationship, can you get the stock-recruitment relationship if you didn't also have the biomass? In which case if you had msy, you would have Bmsy; or could you be in case where you have B but not F? I wouldn't think so because B is a real troublesome part of it. We may end up getting rid of two. You either have good estimates of all the stuff or you have proxies. Let's carry on and see where it ends up.

I remember amberjack and if there is no controversy surrounding those excellent results, it was a one. King mackerel, I don't remember if the proxies ended up being the final word or if you actually had estimated everything.

Dr. Neer: No, the proxies – F 30 percent, remember we had to figure out all the history of Fmsy.

Mr. Carmichael: Well, that's your assessed stocks; that wasn't too hard.

Dr. Reichert: Actually we can add mutton snapper to that?

Mr. Carmichael: I forgot mutton snapper, yes, one. Anybody see anything else we have assessed that I forgot? I guess that brings the question of a rejected assessment; what does it become, an unassessed stock?

Dr. Neer: Unassessed stock, I guess, but I guess you put it down there and it goes under – well, it was assessed but the assessment was rejected and somehow maybe we need a comment on –

Dr. Belcher: Could you still assess it based on a catch stream is the other question? I mean if it is a failed thing but you still have other levels at which you could assess it –

Dr. Barbieri: Right, and I think that would either put it on number three – I mean number four now, right, or five.

Dr. Williams: How about spiny lobster?

Mr. Carmichael: Is spiny lobster a three? We had a lot of proxies. It was mainly problems with the mixed nature of the stock and understanding stock-recruitment; three? I think Spanish was a three; does that rely on proxies? It must have. We are up to 19 stocks that have been tried to

assess; that's not so shabby in a mere five to six years. Erik, you people have been busy, apparently.

Dr. Williams: No kidding!

Mr. Carmichael: Just out of curiosity, one time I looked at what proportion of landings these species happened to represent; it is like 85 or 90 percent. An assessment was tried on dolphin and I don't remember what its ultimate fate was. There were a lot of questions about it. It just sort of hangs out there.

Do we want to carry through with assessed species across the columns before we continue down the rows and get our things that have a trends report or things that had a prior assessment or some of our things on the not-too-far horizon that have nothing? What are you sort of more anxious to do; talk more about assessment information or move into uncertainty characterization?

Ms. Lange: I think I would like to see this filled out here for those stocks that we have identified already and just see how far we can go with them before we go on to the next tier.

Dr. Neer: Just so you guys know, they were already asking next door what was going to happen with the unassessed stocks and how were you going to move forward when they were talking about mackerel. Gregg said, "Well, what is the SSC doing?" I said, "The SSC is still working on it." They're already chomping at the bit for these results.

Mr. Carmichael: Our uncertainty categories were high, medium, low and none. Well, I know that we have already discussed SEDAR 4, golden tilefish and snowy grouper as being high so I will fill them in.

Ms. Lange: Just to refresh, high means that most of the uncertainty has been identified so we know sort of how much of a buffer we need, and none means that we are totally uncertain because we haven't been able to identify –

Dr. Belcher: It is kind of like the overdrive off button in your car; when it is on, it is off, you know.

Mr. Carmichael: Right, because it is uncertainty characterization is the criteria. High is good; none is bad. Anybody think anything else is a high? Anybody remember yellowtail well enough to remember where it would fall? It was fairly thorough, multiple models, two fleets, bootstrap, Monte Carlo?

Dr. Barbieri: I think so, yes.

Dr. Reichert: I was just thinking about future discussions and translation to other groups. Should we reverse that to make it not counterintuitive, maybe?

Dr. Neer: Maybe you need to change the caption, so then we need to change both of them.

Dr. Reichert: I agree; I'm just thinking in the next phases when we start discussing this, not amongst ourselves but also with other groups, that may help. I am just throwing this out in terms of how we define high, low, medium.

Dr. Belcher: I think Julie is right. If you just use a characterization of uncertainty, if you had a high coverage of that characterization or you had no coverage of that characterization, I mean that might just be just as simple as rewording the – I mean, either way.

Ms. Lange: But, again, I think I agree with Marcel in that it is not what we understand this could be. It is what we can make sure that the public and the council understands. To them, if you say uncertainty –

Dr. Reichert: It is the linking of the term "uncertainty" with high, medium or low.

Dr. Belcher: Yes, I understand what you're saying with that.

Dr. Neer: We have to keep the term "uncertainty" in what we're talking about and we have to keep the term "characterization". If you pull out "uncertainty" –

Dr. Reichert: No, I'm not saying pulling out the uncertainty. What I'm saying is however we define it, if we link uncertainty with the classification of high, medium, low and none, then we run the risk that people misunderstand what we are saying no matter how carefully we define it.

Dr. Belcher: Yes, because what you're saying is that basically people are just focusing in on two words and a high degree of uncertainty means that it is not good.

Dr. Williams: Well, I think when we go through this exercise we can start to add some notes to what these categories mean. For instance, "high" in this case I think we all discussed meant that some type of resampling method was applied, whether that being a Basian or a bootstrap procedure, but that was sort of the criteria we were looking at is a resampling method was applied. We can start to add notes to what we have been meaning by all these.

Dr. Belcher: Yes, I agree with that.

Mr. Carmichael: I think the risk of inverting it and then referring to the amount of uncertainty is you're kind of in a whole nother pond full of thin ice in terms of saying it is high, medium or low. By talking about to the degree to which it is characterized, we're not locking ourselves into making a judgment call on the amount, so we're better off maybe doing the work to clearly state what is intended and not risk getting in that pool. Yellowtail is a high?

Dr. Williams: No.

Mr. Carmichael: Medium. Sea bass, medium?

Dr. Williams: Yes.

Mr. Carmichael: Vermilion, medium. Goliath, there was some; virtually none. Given the assessment problems, goliath still sticks out as one that we will have to argue about, I think. Gag, medium, Erik?

Dr. Williams: Yes.

Mr. Carmichael: King mackerel; did they run through the Monte Carlo Bootstrap stuff we had always done in the past?

Dr. Neer: Yes, they did for some parameters. I was going to ask what do you guys qualify medium, if they did it for one parameter or if they did it for several parameters; where is medium falling in, because I don't know if it is a medium or if it is a low.

Mr. Carmichael: It is something we need to discuss.

Dr. Barbieri: In this case, when you think about the fact they actually – to stay consistent – used a VPA instead of statistical catch age as a different level of characterizing uncertainty. We discussed this with them and at the time they said, "Well, it is a tradeoff and we decided to stay consistent with previous assessments, so we had more continuity."

Mr. Carmichael: They did comment on things like Mexican catches. Did they do a sensitivity for some catch inflation? I mean it was at least an uncertainty, which was mentioned, and its potential effect was addressed.

Dr. Neer: Yes, for the review workshop they did get what the total Mexican landings were and they did a sensitivity for it, but that was the Gulf. They didn't do that for the South Atlantic. They only did the Mexican landings tacked on to the Gulf VPA and not South Atlantic VPA. So they did some Monte Carlo around the point estimates that they got, and I'm trying to see how many they did; if it was just for msy point or the SPR value or other things as well. It is not a high. The question is, is it a medium or a low? Luiz made a good point; it is only a VPA so there is only so much you can do.

Dr. Barbieri: This is a rough scale, but I don't think you can compare that, for example, with vermilion snapper, which in my opinion is a much more thorough characterization of uncertainty in that modeling approach.

Dr. Crosson: If it's scaled and this is some sort of absolute scale, these things are not relative to one another because I haven't seen anything yet characterized as low.

Mr. Carmichael: I think it is absolute toward what is possible, with high sort of dictated by the best that we have done is what we have talked about so far. That's my recollection of it. I was just looking back through the notes from yesterday to see what we had said and if there is anything that describes these categories. Maybe we should take a moment and come up with a statement for what each of these implies.

Ms. Jensen: How would this change over time if new methods are developed in the future?

Mr. Carmichael: Raise the bar on high?

Dr. Williams: Well, I don't think new methods are going to – you either can do the best job you can at characterizing all the uncertainty or you can't. I guess with models you could add – if we start moving into ecosystems considerations, that would be a big step and that would probably shift everything in the way we have been categorizing it.

I don't see us making that shift anytime soon. I think that for at least the foreseeable future the penultimate characterization of uncertainty is going to be some sort of Basian resampling Monte Carlo type method and everything will be measured sort of relative to that in a sense.

Dr. Belcher: Well, I don't think we'd ever go back and shift categories on it either. I mean just because you have a different method, it is kind of like, again, is we're evaluating these based on best available science. It is kind of what we find ourselves in relative to black and red. In theory we know we should be able to get a high assessment with what we're talking about in the future.

But currently with what we have in front of us, we're going to end up with a low to none because all we have available is a catch stream for us to progress forward right now. Do you know what I mean; it is kind of all relative to the time at which you did it. Like Erik is saying, all you can do is actually find yourself at a point where maybe you're getting into more of them being high in terms of how much uncertainty they're covering. The better the methods get; the better we're covering our bases on that, so the hope is we will eventually have all methodologies that will put us in that high category.

Dr. Neer: For king mackerel, in the report what they have listed under the evaluation of uncertainty, it says, "Uncertainty, 1,000 bootstraps were used or run using the index residuals of both base and sensitivity models to conduct the phase plots around." That is quote, unquote, phase plots around the variability, so they did it for all the sensitivity runs and they did it for the base models, but they only did it for a limited number of parameters. Was that medium or is that a low?

Dr. Williams: I think that is a medium because the only thing they bootstrapped was the index residuals, and I remember asking that question when we looked at it.

Mr. Carmichael: So can we come up with some phrases to describe these. I got Erik's comment there; the ultimate high would be full Basian resampling approach incorporating environmental variability in carrying forward uncertainty. And the practical high, what we have talked about is the standard from SEDAR 4, which is there a brief synopsis of what that entailed. Would you describe what was in SEDAR 4 briefly?

Dr. Williams: I guess resampling of most important input information or critical input information, so we bootstrap things like natural mortality, discard mortality, uncertain landings, and we had distributions on all of those inputs that were highly uncertain.

Mr. Carmichael: That uncertainty was carried forward in the projections as well, as I recall. The projections brought in more uncertainty in recruitment.

Dr. Williams: That might be a key distinction between what is typically done now versus that SEDAR is whether you take that uncertainty from multiple model runs and continue carrying it forward into the projection scenario or whether you just sort of stop there and then you restart the projections and re-estimate uncertainty.

Mr. Carmichael: So that perhaps is the distinguishing thing between the medium ones where you have had the bootstraps and Monte Carlo's as various inputs, but when it went into projections you started with one set of abundance at age and considered the typical recruitment uncertainty.

Dr. Barbieri: Erik, in terms of our ability to apply the P-star approach, how would that rank along that scale in terms of –

Dr. Williams: That's a good distinction, too, to consider. I mean I think under the high and the medium and probably even the low we're still going to at least get a distribution of Fmsy values, which is then the key piece to doing a P-star analysis is some sort of distribution on Fmsy or its proxy.

Mr. Carmichael: Is that a fair way of stating some of the difference between high and medium; they both give us a distribution of msy, but there are less parameters in that distribution for the medium. What I put in medium there was that the key uncertainty is they're addressed using statistical techniques, bootstrap, Monte Carlo. It could be Basian maybe for a few parameters. That would be sort of what has distinguished a medium from a low.

Dr. Williams: Are we thinking the low, we expect a distribution of Fmsy values out of the low or is that the key characteristic for a low is we have no distribution around Fmsy, and is that different? Then how is that different from no characterization of uncertainty? I guess the no characterization of uncertainty is just a single model run essentially and you just have a point estimate. But if you have a suite of sensitivities but you didn't produce a distribution that is still perhaps a low characterization of uncertainty. You just didn't come up with a formal sort of distribution.

Mr. Carmichael: You could have like a catch-curve analysis where you have some sensitivities explored but you weren't able to get distribution of msy and all that.

Dr. Williams: Right.

Mr. Carmichael: Does that help clarify it for people? Any other lingering questions?

Mr. Chester: I guess I'm losing the thread here for a minute. Are we capturing anywhere the situation where we have characterized uncertainty very well, but it is very uncertain? Where is that in this?

Dr. Williams: I think it is a good point to step back and remember what we're doing this for. We're assuming we're going to get some sort of uncertainty out of some of these assessment models. What we're trying to determine is how well it is characterized; so whether we need to

make an additional adjustment beyond what is already going to be done if you had the uncertainty characterized.

So, if we apply a P-star of 25 percent probability of overfishing, that is going to be a function of how uncertain that is, but it is also a function of, well, how well did we characterize the uncertainty? It could be highly uncertain and we characterized it well or it could be very certain but we didn't characterize it very well so we need to make an adjustment for that.

Mr. Carmichael: This brings us back to Spanish mackerel; clarified to a medium; low?

Dr. Williams: It might be a low because did they actually produce a final sort of distribution of Fmsy or was it just a bunch of sensitivity analyses?

Mr. Carmichael: Do you recall, Julie; the distribution of Fmsy?

Dr. Williams: King or Spanish?

Mr. Carmichael: Spanish.

Dr. Williams: Oh, Spanish, yes, that one was a fuzzy one because of the review that it received.

Dr. Barbieri: You know it might help if Chairman Belcher has a copy of our report to the council. There might be a blurb there about our sense of confidence in the basic results for each one of these assessments.

Mr. Carmichael: I think you did have distributions of msy in Spanish. Stock status; do you want to number these or do you want to put the specific status in there? It would be easier just to state "overfished" or "overfishing".

Dr. Neer: But remember in some cases it might be overfishing and then the overfished status would be unknown.

Mr. Carmichael: Did we end overfishing on golden tile? I think actions are probably in place that did that. I guess that would be the question, right?

Dr. Neer: But do we have a new assessment for them yet? We can't change the status until we have a new assessment.

Dr. Reichert: With black grouper and red grouper, we said we can wait?

Mr. Carmichael: That's the question. Perhaps there may be an opportunity that those can wait until the assessment is done. There has been talk of a waiver. Does Mark know anything about waivers for impending assessments?

Mr. Nelson: I am not sure if that will fly, but I'm not the final word.

Mr. Carmichael: That's probably a hot potato that nobody necessarily wants to be the final word on. Well, I think this golden tile perhaps brings up an interesting situation that maybe we should talk about because back when the assessment was done it determined there was a slight possibility of overfishing and some regulations were taken to end the overfishing as required.

So as we go about setting an ABC for the future, would you consider its status to be whatever the last assessment said or would you consider what the regulations are currently achieving even though we know that we don't have the assessment that allows the agency and the council to go in and specifically change the status? We do have approved regulations that intended to solve the problem.

Dr. Neer: But do we know if they have solved the problem? That comes into, I guess, looking at the other pieces of information that the catch has gone up, do we feel better?

Dr. Williams: That's the primary purpose for this additional buffer or whatever we're going to call it or additional consideration of lowering the catch rate is because it was overfishing. Now whether it has been solved or not, the point is it was overfishing. This one is below the 10 percent population threshold, snowy.

Mr. Carmichael: I was still pondering tilefish going a few steps out and thinking, well, you would set the ABC and then you would be comparing landings based on the regulations that are in effect against that ABC, so you probably would use the status it was back then, because you would be comparing it to, okay, the regulations are theoretically affecting the landings that you would then be comparing back to your ABC. Snowies, yes, snowy is the problem child there. Snowies biomass at the time of the assessment was – or MSP; what would we look at, SPR?

Dr. Williams: Well, I computed it as percentage of virgin, and it was around 4 percent.

Mr. Carmichael: So snowy is overfished, overfishing, rebuilding and below threshold, so it is a full house. For goliath, depending on the effectiveness of the moratorium, you very well were not overfishing the stock at that time. Now this is one that if you did establish status using projections by this point in time, even at the lowest effectiveness you're not overfishing anymore. I think it was unknown officially.

Dr. Barbieri: For goliath the status is really unknown at this point. If you look at the indices and all the other accounts, the stock may be actually at or above 50 percent SPR, which is the bar being held now, but we don't know, so at this point I would say –

Mr. Carmichael: Both unknown?

Dr. Barbieri: It would be both unknown.

Mr. Carmichael: How about mutton?

Dr. Barbieri: Not fished and not fishing.

Mr. Carmichael: Another royal flush.

Dr. Neer: Well, there was that comment that there might be slight overfishing; but if so, it is quite small, and that is the official line from the reviewers.

Mr. Carmichael: Any remember Spanish, not and not – not overfishing. This part should be easy and straightforward, but we haven't really discussed what you do with it. When are we going to talk about the degree to which you move your buffer scale based on all these decisions? That is where it is really going to be a bear; Column F when we say buffer equals.

Dr. Neer: And it is probably going to be a sum of all those different levels, right?

Dr. Barbieri: That's why I think if we try to resolve some of the things, then we could jump in the afternoon right into the world of setting buffers.

Mr. Carmichael: Right now we're still refining our categories and making sure they actually work, and they seem to be coming up fairly well, so that is kind of step two. We have got one more column to do. Carolyn says you have some PSA results. Do you have it for every fish?

Dr. Belcher: It is from MRAG's Draft PSA Analyses for the South Atlantic so there are actually some species on there. I'm just looking at the tables right now, but I see gag, red grouper, black grouper in the first group. I guess the questions are what do you want –

Mr. Carmichael: What is it?

Dr. Belcher: The information you can get; there is a productivity score, and it is on a scale from one to three, with low, medium, high; three being high. Then there are susceptibility scores and then there is a risk ranking that I guess is the overall – there is an overall risk score and then a risk ranking. That is done as high, medium and low as well. So for those three species, gag, red grouper and black grouper, they're all listed as high.

Mr. Carmichael: In total for all three or –

Dr. Belcher: Each one individually; individually is high.

Mr. Carmichael: Is there a susceptibility?

Dr. Belcher: That was their overall. I guess the question is how do you want it? I can give you the score values if you want scores. The productivity score for gag is 2.14; total susceptibility is 3.

Mr. Carmichael: So they have a total risk score and total risk ranking, a numerical risk score. We could record that. That's the essential bottom line and everything, the PSA values.

Dr. Belcher: Okay, and the overall risk is 3.69 for gag. Then red grouper is also 3.69. Black grouper is 3.77.

Dr. Barbieri: Carolyn, what is the scale there and maybe we can put that up?

Dr. Belcher: With the overall risk, I would have to look that. I haven't gotten to that point. I had been alerted to the fact that there were results on their site. The next table they have, there is snowy grouper, which is 3.77; warsaw, 4.05; speckled hind, 3.86. Mutton snapper is on their list, and that is 3.69. Vermilion snapper is 3.39; red snapper is 3.53. They have got tilefish, blueline tilefish and sand tilefish; just tilefish, 3.77. Then they have got hogfish; hogfish is 3.69. Greater amberjack is 2.60. Red porgy is 3.39. Black sea bass is 3.39. That is the end of the species that they have.

Mr. Carmichael: They didn't do yellowtail; did they do snappers?

Dr. Belcher: Yellowtail snapper; they might have been there and I might have skipped it – it is not there.

Mr. Carmichael: Where did you find red snapper?

Dr. Belcher: Red snapper was in its own group. I don't see yellowtail.

Dr. Reichert: So, based on the criteria, except greater amberjack, they're all high. Do we feel that these numbers are useful? I mean they're obviously not –

Dr. Williams: No, I think they're very useful because I think that scale should be sort of not relative to within our complex but relative to sort of all fishes in a sense, and in general our snapper groupers would have a higher risk because of all the factors we keep bringing up.

Mr. Chester: I don't have any problem with that. I find it curious that red porgy and vermilion snapper have the same score, and they were pretty much fished in the same kind of way and in the same kind of areas, and yet one crashed and one was much more resilient.

Dr. Belcher: But there are differences relative to productivity, and that is what I'm saying is how do you want to report it because that is an overall but it doesn't really give you an idea of productivity susceptibility and where they're falling out. Most of them tend to fall in the middle category with some spread, but they're at the top end. So susceptibility, they're high; but when it comes to productivity, they all kind of spread in the middle around medium. Some of them are at the higher end of that medium category, but they're all relative high in susceptibility. That is just a general perusal of what was in the graph.

Dr. Williams: And I don't think we're stuck to using MRAG's ranking system. We could even develop our own if we wanted to.

Dr. Belcher: I thought it was just something that we could at least put it out there. Again, we've talked about the fact that there have been discussions in other places that said that this methodology does need a little bit more tweaking to it. There were concerns about some of the classifications and how they were assigned.

Dr. Barbieri: Well, as Mark brought up before, the NMFS Working Group Report on this issue will be released over the next 30 days or so, so this now is basically a placeholder to say we are incorporating this type of thinking into our framework and we're going to refine this as the NMFS report is released.

Mr. Chester: Yes, and this group may want to suggest thinking about a mechanism for perhaps a special working group or a subgroup of this committee or something to take this on or a group of outside people, whatever, for coming up with a process to do this PSA.

Mr. Carmichael: That's kind of the bottom line, isn't it? If you don't go with what MRAG has done and carried it through to an end value, you're going to have to do a lot of work yourself to get there. It would probably be worth some time to look at their report and see if you truly support it or think there are some things you would tweak. Maybe there are some things you could tweak, you may take some of their decisions and modify others and end up with a modified score.

Dr. Belcher: I found the scale but basically high is greater than 3.19; medium is 2.64 to 3.18; and low is less than 2.64; and there is a reference for it in terms of overall.

Dr. Reichert: And that was the scale that I was referring to in terms of if you look at that, then only greater amberjack is in the medium and everything else in the high scale. If we are satisfied with basically those three categories, then we are good. I am just wondering based on some of these numbers if we would ultimately be looking at something that is a little finer than that.

Dr. Belcher: Well, again, it is provided to you for both productivity and susceptibility. Now that is not saying that when you look at how they're setting up to evaluate each of those you may find that list is not as comprehensive as you would like it to be, and in that situation you would add more to it, which might actually tweak some of that out.

Again, that was kind of the suggestion yesterday if we were going to start looking at this matrix for those, at least look at what has already been put out as a draft and see what we would add, take out, enhance, subtract, to see if there was something that we could work similarly with that type of approach.

Dr. Reichert: And I agree with that.

Mr. Chester: Yes, I tend to agree in the sense that I would be happy with a much broader scale like high, medium and low, even. I don't learn much from 3.39 and 3.40 and 3.41. They're all high and I think that is what we're going to have to work with.

Dr. Reichert: That is what I was trying to get at with that.

Mr. Carmichael: It is when you move your buffer, if you start with ABC equals OFL, do you move it 3.39 percent to the left? Think about that, because even if you kick back to a high, medium, low, then you're going to have to decide.

Ms. Jensen: Under the stock status category, do we have something if we're approaching threshold? I mean you're not overfished, not overfishing, but you're getting close.

Mr. Carmichael: No.

Ms. Jensen: Is that something that maybe we should put in there?

Dr. Belcher: Is it worth it to separate out another column and look at the thresholds if we have a definition for whether we are talking SPR or the Bmsy issue; is it worth it to at least see what we have in front of us to see if we can even say anything relative to thresholds?

Dr. Barbieri: Well, I think the threshold is already – oh, you mean the definition instead of just having it listed on the stock status.

Dr. Belcher: We haven't discussed where the estimates are relative to thresholds, which is one of those points that we were saying earlier on, right, is one of those distinctions of stock status.

Dr. Barbieri: The threshold is 4 percent virgin for snowy.

Mr. Carmichael: Christine was asking about the approaching; in gag you are approaching overfished.

Dr. Neer: I think that might fit into if you have an expanded table; so when you have to go through and do this for each species, maybe you get for each species – that comes back to what I was saying; instead of just putting overfished/overfishing, you would actually have what the parameters values were, so when you actually come up with your actual numbers you have a table that feeds into this summary table, you know, with all the parameter estimates. You can look at them and see how close you are and take that into account when you're making your discussions.

Dr. Williams: I think we will take a look at this when we start filling in numbers, and we might realize that we want to steer clear of overcomplicating it. We want probably to have as few levels as possible in each of these because otherwise this is going to really become unwieldy, but we will see. I mean we can readjust.

Mr. Carmichael: That's why I think when you start applying it you might then look at gag compared to a fish that is similar except for not approaching and decide, oh, maybe I want – when it is all said and done and I look at my gag buffer and think it should have been a little more because it is approaching, in that case we could go back into this and say, well, let's add that in. Let's wait and see how it pans through. Keep it in mind, though, along with the other list 15 things from yesterday to keep in mind.

Dr. Belcher: We will now break for lunch. We will break until 12:30.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Tuesday afternoon, March 3, 2009, and was called to order at 12:30 o'clock p.m. by Chairman Carolyn Belcher.

Dr. Belcher: We were informed during lunch that the council is getting ready to do the Selection Committee portion of the meeting. They're going to go ahead and do their closed-door meeting portion and talking about personnel for the committee, but we need to go ahead and get some of that procedural stuff that you wanted to go forward to them, so I can take that in when they get done with their deliberations.

Mr. Carmichael: What topic do you want to talk about first?

Dr. Belcher: We can talk about the committee makeup. I guess that was the first thing. We were talking about the possibility of more committee members and having an idea on what we would like to see.

Dr. Barbieri: Well, right now it is just a conceptual discussion. As a group we haven't discussed this. The idea was floated but we haven't really discussed about having some additional members. The idea was, if we're going to get sort of a larger workload now, having some additional members may help us spread the load around.

Dr. Belcher: So how many additional members? I mean for some us who have been around – I guess our biggest was 22 individuals on the group at one point, somewhere in the 21 to 22 range.

Ms. Jensen: How many do we have now?

Dr. Belcher: Well, we had 16 and we're at 15 now.

Ms. Jensen: It is good to have more people, but on the other hand if you have too many people, then you've got a lot more disagreement. It is harder to make decisions.

Dr. Belcher: I know one of the things – well, actually John has it as number five – the other thing is that if you think about issues, right now our socio-economic folks, we're looking at, what, three people, Scott, Sherry Larkin and John Whitehead. So, we have got three there, but we have had the discussion about whether or not the socio-economic group should actually kind of have their own subcommittee to a degree; not that they wouldn't meet as part of the full group, but that they would have the ability to have their own group to discuss pertinent issues.

I mean we kind of tried breaking – in the past what we had done was everybody was assigned either to the biology committee or the socio-economic subcommittee, and we kind of ran parallel systems and then came back to the big meeting, but we ended up rehashing the same things over again as we tried to bring everything back cohesively.

What we were thinking is probably more of the chance that you all would just basically have your own separate meeting and then bring it back and report that portion either into the full report – it is kind of one of those things of I don't know how we best want to dovetail it, whether

it be in technical committee mode or – I think we're kind of open to suggestions on how it could best benefit.

I know the frustration as evidenced by Sherry and John with this meeting was there really wasn't a whole lot that they felt that socio-economic wise was pertinent to what we were drafting. I don't know what Scott's feel is since he is here and he is willing to participate with the biologists in this process. I mean is it something you feel is – it sounds harsh to say – a waste or your time and is it something that you feel that your time would be better served doing –

Dr. Crosson: Actually I think it is useful for me to be here. I took part in a SEDAR, which coming from a socio-economic – and the only reason I did it originally was because Andi asked me to because she didn't have anybody else and it was right there. They were meeting in Beaufort. But, I think it is quite useful.

I mean I have a different perspective than John and Sherry do, but I also don't have the – I mean do this full time. They're professors so they have other things, other demands on their time than I do. As far as having a subgroup, one of the primary things I think that a socio-economic perspective would add value to is any kind of policy decisions. I know John is somewhat reluctant to get into that, but when it comes to doing an analysis of different policy options, that just seems to me to be where a social and economic perspective is pretty valuable.

I mean as far as looking at this sort of stuff it is useful for me, but I'm not really contributing as much as I am just sort of keeping an eye on all of you and making sure that I understand what is going on. I think it is useful because if you can't explain it to somebody who is not a biologist, you're going to have difficulty explaining it to the public and to the fishermen and to the council members.

I do think it is useful for anybody who is a sociologist or an economist who wants to be involved with it to do it. I think it is useful for all of you as well. Those are my main thoughts on it. But, again, any of the work that a subcommittee is going to do, what is it going to do? It's going to have to look at some policy options and give some sort of scientific stamp on the analysis that goes into it. I don't know what else it could do.

Mr. Carmichael: I suppose it would do whatever sociologists and economists are expected to do on the SSC in terms of reviewing social and economic reports and analyses and commenting on those sections of the FMPs, but it just seems like 90 percent of the work are the biological factors, and the smaller percentages are the socio-economic factors. This might be more efficient. What do others think?

Dr. Belcher: Do you feel we need more participation, about the same; as far as socio-economics, if we were trying to bring more members on, if we were going to increase our numbers?

Dr. Crosson: You and Luiz just came from the trip out where you met with all the other SSC chairs; isn't it normal that there are more social and economic perspectives on SSCs overall than on this one? No, really?

Dr. Belcher: I think there are actually a few that don't even have socio-economic involvement.

Dr. Crosson: Okay, I didn't know that.

Mr. Carmichael: The more common pattern is they have a separate – several of them have a separate Socio-Economic SSC and some of them have just separate socio-economic committees. We probably have more sociologists and economists on our SSC than any other SSC, but no other separate committee.

Dr. Crosson: Yes, I am also on the Mid-Atlantic SSC, and now that I think about it, it's about the same proportion. I think there are maybe three or four of us on the Mid-Atlantic SSC. I also don't have any names that are popping in my head of people to suggest. I mean Sherry is in Florida and John and I are both in North Carolina. It might be nice to have somebody from South Carolina or Georgia that could give their perspective. The only name that pops in my mind even remotely is Ray Rhodes. I don't know if he was ever on this or not.

Dr. Belcher: We had Ben Blount for a little while before he moved to Texas A&M out of the University of Georgia, but as far as socio-economic folks in our neck of the woods, it is hard to put a name to that spot. Okay, I guess we just really don't have a feeling for what we would like to see for membership numbers?

Dr. Crosson: I will back up what Christine said. I'm not saying how you felt about this, but if you do add more members and it starts getting up into the twenties, it is harder to get a group moving and it is harder to come to consensus and it is harder to have discussions when you start really piling people in.

You have been here rather long term compared to myself; so when it was up in the twenties, was it more difficult to run things? On the other hand, I guess you have to take into consideration there are a lot of tasks that need to be done; so I guess if you have a larger membership, it is more likely that somebody will volunteer to do them, so that is the playoff.

Dr. Belcher: Well, I guess some it, too, is I was looking at it from where do we stand relative to a lot of these other SSCs as far as size, and we're actually pretty much spot-on with everyone else. I mean we're not too low, we're not too high, we're pretty much right in the middle. Everybody else is really running anywhere from 14 to 18 people.

The one big difference for us, though, which was interesting, especially as you start talking about whether or not people are going to be compensated in the future is we are one of the few SSCs that have more state people on it, as far as state employees and state managers, than any of the other ones. A lot of them are comprised mostly of academics and NFMS employees, which was kind of interesting for us to see that because Erik is in the minority on our committee.

As far as a NMFS employee represented on ours, we have one NMFS and everybody else is pretty much state or has a different affiliation. So as you start the issue of compensating folks, as a state employee we can't receive compensation for our duties on the SSC, so our take on that

whole – where everyone else is like, oh, yes, by all means; it's like, well, that works good for you but it doesn't work good for everybody.

So the division even on our committee, when we had a lot more academics, you know, you still were looking at probably two-thirds of the group were state employees. But, yes, I hesitate in the same way to say we really – from a working standpoint, I think we could use a few more people, but I don't know that I could set a number to how many people we could use because it is dependent on workload.

I mean I look at what we're getting accomplished today with basically half of the group and we're doing fairly well, but, again, we have one agenda item. As big as it is, we have one agenda item and we're able to give it some good work, but when we've got 15 items it's spreading people really, really think, and it is a lot of information to get through.

Dr. Williams: I don't think we necessarily need more bodies, but we need to probably get some more stock assessment expertise, if we could. We're definitely limited on that; especially when you compare our SSC to other SSCs across the country we're definitely limited on the stock assessment expertise.

The other thing is when you compare and contrast our function with other SSCs across the country is – you know, we're concerned about our workload, but part of that is a function of the fact that we only meet twice a year, and the reality is we're going to probably have to think about meeting more than a twice a year, maybe even every council meeting. I know the North Pacific meets as often as five times a year.

I mean that is part of spreading the workload out would be to meet more often instead of having it pile up every six months. Nobody wants to hear that, but, again, I'm just stepping back and looking at how our SSC functions compared to the other SSCs. Those are some of the glaring differences in my mind is we don't have as much stock assessment expertise and we don't meet nearly as often.

Dr. Barbieri: Well, I don't really have any answers either. My perspective here is like as far as the standing SSC, this is the point that Scott brought up, I think 16 is a good number; and like you said, spot-on with other SSCs. The way that the Gulf Council's SSC has handled this workload issue is to generate this – there is a standing SSC and all those specific SSC, you know, subgroups only meet for specific issues but still report to the standing SSC.

You don't have to have all of them as a great big family for the standing one. Maybe we can wait and see how we function over the next year. It is just a matter of seeing the increase in workload, if there is any, coming up with the Reauthorized Magnuson and are we going to be able to meet without meeting more often. We are going to have to meet our responsibilities.

Dr. Belcher: We're kind of hitting on pretty much all of your points as we go along on this, John. As far as our meeting with the council in concert with the council, we kind of talked about a little bit. There are obviously pros and cons to both. What would be some suggestions as far as continuing with the current setup; do we separate by a couple of weeks? I think that was one

of the discussion that we had before is the issue of what can staff do relative to information to us, because we still would ask for that two-week window, which would mean technically that is a four-week window before the council gets together?

Mr. Carmichael: It is already a six-week window before the council, anyway. Stuff starts getting put together and prepared and everything else well before that, so really the ideal plan is most analyses are done and due to the briefing book six weeks before the council, so we're already looking at that.

It would have to be backed up from that to start dealing with the same materials. Logistically how that would go, we're not sure. It would depend on whether or not this idea even begins to float; and if it does, then we will deal with when you specifically meet relative to the council meetings and what that means in terms of what you do and where your reports go.

Like, would you meet now for – would you have met a month ago and do stuff for the March and June meetings or would you be meeting a month ago doing stuff for the June and September council meetings? We can adjust at however we need to. I think the most important thing to focus on here is not that because your two-week deadline stands no matter what.

The materials have to be done; that is a given, but what is a better way of getting your input to the council? Do you think having the time for you to leave this meeting and polish your reports would be beneficial in terms of what you actually say to the council; and do you feel that you don't recommend things be changed or modified if those changes are minor for fear that it derails the whole process. A lot of times think, you know, I really think that change should be made, but the committee is going to act it tomorrow so let's hope you get it in for the meeting three months from now; or would you rather say make that change and take it to the committee in this way?

Dr. Williams: I think this is where meeting more often comes into play, as well, because I think if we met at the same time as the council, we could try to push the major issues on the meeting before the council meetings in which it needs to be addressed by the council. But because of this six-month schedule I think that is what is also causing this crunch of having stuff decided at that meeting for that.

Dr. Barbieri: I think that is an excellent idea. That would be the best of both worlds. We would meet with the council but be one meeting ahead of time in a way in terms of being able to handle issues for the following meeting and not at that specific meeting that we are at.

Dr. Reichert: I agree, but what I wanted to say earlier is the problem with meeting more times a year – and I think we need it; I agree with Erik – is that we may lose some members that are in academics who we already are missing at a lot of meetings because of teaching and other obligations. I think that is something we should consider in terms of membership and who we are able to recruit or not to the SSC.

Dr. Neer: Just one more point to consider if you end up meeting more often is that if you're meeting four times a year – the way it is now you meet twice a year and if you miss a meeting

for whatever reason, you're a whole year behind, so that one person is paying a whole year of catch-up when you're meeting twice. If you go to a schedule where you're meeting four times a year, but you can only meet three out of those four, you're still not as far behind now as you are when you're missing one meeting out of two a year.

Dr. Reichert: I agree but I think for people who are teaching that obviously will be more than just missing one meeting here and there.

Dr. Williams: I slightly hesitate in bringing this top up, but I know it is going to come up and it is going to be addressed a little bit in the NS2 Guidelines, but my position on this SSC. As a supervisor and a person who potentially conducts most of the assessments that come to this SSC, I have no opinion on this but I think you guys should weigh in on this, is whether that impairs the SSC with my being on there and having to sort of abstain from any votes that involve the assessments that come before this committee, having to step away from certain discussions because of the position I'm in.

It would behoove you guys to think about this and comment on it now because it is going to get commented on eventually, and I don't know what the future – there has been the discussion of possibly swapping SSCs within the Center that we would play a role in, so I might play a role more in the Gulf SSC and then we might have people at the Miami Center play more of a role in the South Atlantic SSC; I don't know.

There are pluses and minuses, because, yes, I come with all the background knowledge of what went into these assessments and having conducted them all and all that sort of stuff, but then the catch is I can't really vote on some of these issues. It is a weird position but you guys should think about whether somebody like me should be on the SSC or how many of me should be on the SSC.

Dr. Belcher: Well, not to inflate your head, but I would rather you be on the SSC only because of the fact that you do bring that. In the time that you have worked on the SSC in the stead that I have been here, if anything, you have actually had us pull back and pause a lot and think about it because of the fact that you're involved with certain things, but I don't really ever feel that there has been direction that has been pulled from your stead.

Do you know what I mean; I don't feel that there is any kind of bias that has been induced by your being on our committee. The fact that you do know them is one of those things that is integral – we can superficially read it and understand it, but there are a lot of times that what is in the ins and outs of that particular dataset; you know, if you don't have the answer, you're not that far removed from those folks who do have the answer.

If it's someone like Shannon or whoever from the Miami Lab, it is going to be two levels of removal for her to try to get the same information that you're privy to. I don't feel there has ever been a time that you've put yourself in on a vote that you shouldn't have been. I mean you've always been vocal about excusing yourself from those things. Now that is you; that's not every representative, but at the same time I would be hard pressed to say I would rather see you swap with someone from Miami, but that is my opinion.

Dr. Williams: I bring this up because I think you might want to actually say something along those lines to the SSC Selection Committee so that they're aware of your views on my position on this SSC because I know in the background there are other views that are starting to float to the surface, and they're contrary to that.

Dr. Belcher: Well, one of the points that came out of the national meeting is, again, when you look to a lot of these other SSCs, a lot of folks that are on there, they are NMFS employees and there are NMFS employees that are chairing them, and that has been one thing that has been excused from our SSC is having a NMFS employee actually chair. That is the kind of thing, when you start seeing that spin and that difference when you look to a lot of these other ones, we're actually pushing away from what a lot of others have gravitated towards; good, bad or indifferent.

Dr. Barbieri: This is an issue that I think we need to really think about very carefully, and we're bumping into this I think along the way with several of our sort of participation in the stock assessment process. To some extent, at times, I feel we are so overworried about independence – I mean the same thing happens with SEDAR – we're so worried about independence that we forget the benefits of having people who are intrinsically involved in that process and be here at the table and help us understand all of those intricacies.

The same comment, Erik, could be made about me at times because we handle yellowtail snapper and mutton snapper and we're going to be handling black grouper. Also, I have heard comments about us sitting on SEDAR panels and say, "Well, how can you sit on a SEDAR panel and then you come to the SSC?"

And look at the national meeting, I don't think all the other SSCs were not that worried. I feel if you're sitting on a panel, then you feel a sense of responsibility to bring that more detailed discussion to the table for the people who didn't have the opportunity to be there. I think it is a plus for us to have that. Sometimes I think we're too overworried about independence.

Mr. Carmichael: Yes, the SEDAR situation, the independence is only a concern when it comes to – at least from the SEDAR perspective, there is only a concern when it comes to the reviewer; is to not have a reviewer who worked on this assessment. That could mean the guy who did the last assessment couldn't be a reviewer for a fresh assessment. That would be fine.

There is an expectation that SSC members participate throughout. We're looking for any independence; we want to do just like you said, bring back that story, I was there, guys, here is what happened. You have got to be careful that it doesn't become, oh, it should be independent. I have heard that from other SSCs around the region especially that, well, I shouldn't be on that SEDAR if I am going to be on the SSC and deal with it.

It's like SEDAR requires SSC involvement; we never wanted to get away from it. I think it would be very unfortunate to have that idea spread and have us sitting there telling people like Erik can't be on the SSC because they might not be independent or you because you deal with the stock assessments cannot be on our SSC – that would be a huge blow to the available pool as well as the quality of expertise we have. Let's hope that idea gets nipped in the bud.

Dr. Belcher: Well, I think that comes back to that, which is another discussion during the national meeting, is the issue of what is the role of the SSC in that whole peer review? Most folks were like, well, I don't know even know why we have to review it because if it is coming out of an independent review.

We gave examples of how the SSC actually did drop, kick and punt a couple of assessments back, so that there is a necessity for that, so the involvement of the SSC at least as an observer during the review, I don't think there is anything wrong with that, and I don't see how that contaminates any of that. You're not at the table, per se.

Mr. Carmichael: People saying that kind of stuff I think are just looking for somebody to do the hard work for them. They're looking to go to somebody else and say, well, those guys approved that assessment, so here is the way it is. To have the SSC still have a role gives the SSC a bit of responsibility with the ultimate outcomes that come out of that; and to pass that off to a totally independent review body and this other group of people is irresponsible.

I think that is what some people would like to do and they say, well, that is what they gave me so I have got to deal with it. No, you get to interpret it and you get to make sure that those guys didn't go off the mark given our management system.

Dr. Belcher: Okay, the minutes, I guess this is getting back to how best to reflect the minutes in terms of – we have the verbal record.

Mr. Carmichael: Well, everyone continues to ask about the transcripts versus not the transcripts, and at the last meeting the council said you're still going to have transcripts. The Selection Committee is meeting now and if you like to add to that or if you would like to offer an alternative opinion, now is your chance. The state of affairs now is the status quo; you have transcribed minutes which you get in a couple of weeks and you can look at all you like.

You also have in this process an electronic recording that you can receive via e-mail, memory stick, CD, what have you, that you could take home with you at the end of the day and listen to as you fall asleep this evening or use it to write your ultimate report when you get there, you know, so we have that. That is the status quo.

Dr. Belcher: But was the discussion back on the last meeting relative to the transcript minutes or was it relative – I was trying to remember. Our biggest concern wasn't so much the fact that there is an audio of the meeting. The problem is the transcripts and the transcripts being taken and used out of context is where the problem I think was where we were all – like I said, to me as the chair and trying to go through and catch up on – you know, if someone asked me a specific discussion point that we have had, having the audio or having – transcripts for me are easy enough because I can scan through and find the section.

But, still it is a sense of having an audio at a minimum, at least it is that much more difficult for someone – they can hear our entire meeting if they want to, sit down and listen to it just like the rest of us are listening to it to pull our report together. I mean as the chair, I feel I can easily go

through an audio section because I would know by looking at what our agenda was where we had these discussions, and I can easily go through and cut through where the discussions were.

I mean I don't have an issue with listening to the audio. I know our greatest concern – at least that was my interpretation – was because of the transcript. So, when the council reacted, was it reacting to our request to say we don't want the transcripts or the fact that we have audio transcribed?

Mr. Carmichael: I think the council was reacting to some of the questions raised about the transcripts and how they were being used and whether you would be better served without them. They were looking at transcripts across the board as a way to reduce cost and not transcribe as much. The decision was with you guys just to continue doing this. Even if you said no transcripts, you're always going to have a recording.

To get a quality recording you're always going to have the microphones, so the idea of opening three microphones and you guys talking is not something that is really ever to be practical in a normal meeting framework. In fact, we're going to be going to more of these type things in SEDARs just help people hear better around these large rooms at times, so expect to see a lot of these little microphones.

Ms. Lange: Well, I'm really relatively new to the committee, but the people who have been on the committee for a longer period of time; knowing that what you say is going to be in print and be distributed all over the place, have you had times when you feel uncomfortable saying things or maybe not even saying things that you want to say because you're afraid, especially state employees whose bosses or supervisors or the public might take what they say as against their interests.

Again, the point is do people feel restrained in what they say? I mean that is the question to me. If people are open and are not concerned about what they say regardless of whether it is printed or not, then there is no reason not to have them printed. But if people feel they have to second guess themselves or to whether they're going to be open and respond the way they want to, then I think there is a reason to not have them printed.

Mr. Carmichael: Considering this is on the record, people who feel restrained probably don't want to go on the record and say that they feel restrained, but if there are some who feel that way, they would perhaps raise their hand and just – doesn't anyone feel that way; are there any heads nodding that they feel that way at times?

Dr. Reichert: I think it may have hampered a free discussion in the past about certain topics.

Dr. Neer: This is only, I think, my third SSC meeting, but in that short time I saw the difference from the first meeting to the second meeting where you guys were being quoted on Page 35 of the transcript you said this; and after that little thing, the meeting shifted. In my opinion as an outsider, sitting back watching, I thought it had an effect on how you conducted the rest of that meeting and the subsequent meeting.

Dr. Reichert: I agree, and I also saw the difference between the last day and the other days of our last meeting were striking in terms of interactions.

Dr. Belcher: That was my one concern when I first heard about what had happened, when John had brought it to my attention. That was my biggest concern was that in hearing this, it would shut the group down and I didn't want that to happen either. Still with what they're telling us, I don't know how we're going to get around that and I still don't want the group constrained. I mean we have had a lot good dialogue and I really don't feel we should be hampered by that working.

Ms. Jensen: What is the advantage of having the written minutes?

Dr. Belcher: The written minutes, it is –

Ms. Jensen: It is searchable, but other than that is there any other advantage?

Mr. Carmichael: When you don't have a clear opinion in a report and people are trying to understand what it is you intended, it is an easier way to go back and see what it was you intended without having to listen to a recording.

Ms. Jensen: Can we possibly split the recordings up into different topics?

Mr. Carmichael: We can split the records by minute, hour, whatever you would like now under the current system with electronic recordings.

Ms. Jensen: I think if we did electronic recordings, then if you could just split it by agenda items, then they could go to that specific item if they really wanted to – so they wouldn't have to listen to hours and hours of stuff.

Mr. Carmichael; Yes, there are a lot of options like that if you're willing to say we don't want that and if the council will say, okay, we agree with you, we won't do them. I don't even know that the council is not going to say you have to have these transcripts, so we're looking just for your feedback to them as they discuss it.

Dr. Belcher: The last two items is our role in the agenda and the public input. I personally would prefer – and this may be asking too much of staff, but to me the public input issues; if there is something that comes in – like what we had gotten in December was a lot of interesting information, but there was nothing we could act on.

I mean, we just kind of nod, thank them for coming up and talking to us, but there wasn't anything that it was pertinent towards. In terms of us making a decision, it wasn't weighing in from a standpoint that really helps us in developing anything. I know we have been hit with a couple of things. *The Alternate of Mortality Analysis* that came through was one that was proposed for us to see.

Those types of things – I mean we have had more requests relative to the current changes with MSA or the Magnuson-Stevens Act that was given to the council but we didn't see. That's the stuff we feel we need to be seeing where some of these other things aren't necessary.

Mr. Carmichael: This kind of gets at should there be a formal public comment period for you where somebody wants to come in and make a comment on anything, as they can at the council, or make a comment on your agenda items. Is that something that needs to be added to SSC agendas?

We're not sure what the natural guidance is going to be or we're not sure what the council is going to do, but issues have come up where fishermen perhaps or other constituents have wanted to come and say something to the SSC about something you're perceived to be considering. Is that something that should be done or is that something that should be filtered to you through the council where statements should be given to the council as part of their regular, ongoing comment process.

The council has a process for accepting written comments. Is that adequate? If someone wants to make a comment to the SSC, should they be directed to prepare it in writing and submit it to you, which you can listen to and read or would you prefer to have a half hour set aside at the start of your agenda where people can come in and tell you whatever they would like?

Ms. Jensen: Has that been done on other councils; and if so, how does that work?

Mr. Carmichael: I don't recall; I don't know that other councils have a formal public comment period.

Dr. Barbieri: The Gulf Council's SSC receives public input at the discretion of the chair.

Mr. Carmichael: And that is basically our rule; the chair could ask a member of the public to please come up and give a comment. If you see that as sufficient, then that can be your recommendation; don't change what you have.

Dr. Neer: John, that works when the public is already sitting in this room and wishes to be recognized. What about all the people who contact staff and say, "I want to come and give a presentation." Do you say you come to the meeting and maybe the chair will recognize you? I mean I don't think that solves the issue of putting them on the agenda or not.

Mr. Carmichael: They could be directed towards the written comment policies of the council. If someone in advance knows they want to comment, maybe you could state that you prefer to have comments in writing if that is how you feel as opposed to, yes, someone says, "I want to talk to the SSC," then we would say, "Yes, you come to the meeting and maybe they will call on you" versus the SSC is accepting public comment for this hour, this half hour, what have you. I think all your concerns seem to be that you might get a lot of comment that you're sympathetic to but you really can't act upon.

Ms. Lange: I think yesterday we talked about having additional agenda items for presentation, and I think didn't we say that if the chair feels that they're relevant they could be added? I mean couldn't that be the same? If the staff is getting information or we're getting questions or calls or letters from the public or a person who wants to make a presentation, the staff lets the chair know and the chair can decide whether or not that is appropriate.

Aside from that, I think the public is welcome here, but I don't know that we want to – our agenda is pretty tight usually and to open up a specific hour for general public comment, I think it would be better to have that go through the council and for them to say, "Listen, this is an issue that this group of people indicate they want covered and we want you to address that."

Mr. Carmichael: The council committees tend to do it as you do it now, at the chair's discretion. They don't have a formal public comment period before the Snapper Grouper Committee. They have a formal public comment period before the full council, and that may be the way to go. If you have something for the SSC or you have something for the Snapper Grouper Committee, you can come during that full council public comment period, and the chair can be there and it can get back to you that way. That's another way to go.

Dr. Neer: I think a combination of those is a good idea. If you have something, you can do a written comment, provide it and you have it; and if you feel that within that written comment you would like to have more as the chair and vice-chair, at your discretion you can try and add them to the agenda, but at least then you know about it in advance and can decide whether you have time.

So if get something in writing, first you also have a heads-up on what you're going to get during the presentation, which is now we have gone to having that all presentations that are going to be given are supposed to be in the briefing books for the committees to have in advance. So if you do the written things first, then you guys, as chair, can decide whether you think this is something that you can just provide the written comments to everybody or you can break it up.

Dr. Belcher: So basically the role on the agenda is pretty much summed up in that same public input deal. I am turning it over to Luiz so you can all start working on your examples.

Dr. Barbieri: No, seriously, that is what I'm thinking about because the reality is I think that we want to have – and this, again, is another one of those disadvantages of having the concurrent meetings that we have to have the chair bouncing back and forth for reports. I think John has played a key role in helping guide us through this process and his not being here either, so I would rather we forfeit our mid-afternoon break and have our break right now and wait for them to be back. If everybody agrees with that, I think that is the way I would to go.

Dr. Reichert: I agree. Would it be useful to look at that excel spreadsheet and continue with the species that were under that list; that we haven't gotten an assessment of yet, perhaps?

Dr. Barbieri: Actually, it might be helpful just to scan through – since all we are doing here is scanning through all the presentation, anyway, go over all the working groups. The purpose of Rick's presentation was actually not to explain any of this in detail but basically inform the SSCs

of the existence of these working groups and what the objectives were and what the timelines were.

Several of us, of course, were very anxious to see the reports and take advantage of the analysis that they are actually doing to help us through this process. The three working groups' method for ABC that accounts for uncertainty, I think Erik and Kyle, right, are members of this group.

Dr. Williams: No, Kyle is a member of Workgroup 1 and I'm a member of Workgroup 2.

Dr. Barbieri: And I'm not sure we have any representation on Workgroup 3; do you know?

Dr. Williams: From the Southeast Center, I think that is Todd Gedamke.

Dr. Barbieri: So here is some more general information on the working groups. The draft reports were charged by the end the year. That was the end of last year. Of course, they're running a little behind, but we're still hopeful that we're going to have something in perhaps 30 days or even 60 days at the latest would still be very helpful to us.

Of course, guidelines on the control rules, and here are members of the Working Group 1. Actually, Mike Prager, Kyle Shertzer and Victor Restrepo – I guess Victor is no longer with NMFS, right, but we have Mike and Kyle representing our region in Working Group 1. All of this we already are aware of and have already been discussed, and I am going to just be flipping through the slides, so you get to see why he presented basically just informational type of items.

By the way, Scott, that OY, the discussion there is something that they're hoping provides some more information on how to account for the socio-economic factors beyond the biological and ecological factors.

Dr. Crosson: Erik, were any of the members from any of these workgroups social scientists from NMFS?

Dr. Williams: I don't know about Workgroup 1, but Workgroup 2, yes, we had quite a few. We had Ron Felthoven from the Alaska Center. Yes, we had a few folks.

Dr. Barbieri: Since you're a member of Working Group 2, perhaps you can give us –

Dr. Williams: I can give you a quick rundown. We just had a meeting actually two weeks ago in Miami to basically write our first draft of the proposed rule, and that should be going out in April for comment. NS2 is essentially covering the topics of best scientific information available, the role of the SSC, SAFE reports. I think that is all of it.

Dr. Barbieri: And by the way, interesting there on the last one, definition of peer review process in relationship to SSCs, which was very much discussed there, this integration of SSCs into the regional stock assessment peer review process, which seems to be taking place quite a bit in the other regions.

We are involved as well and we do play a role, but I still see us getting at time overconcerned over independence and not being as participatory in that peer review process. Okay, now to the Working Group 3, vulnerability evaluation, and I don't think this presentation is be going into any level of detail, but it gives you an idea of the main topics that are to come up in this upcoming report.

In looking at that there and thinking about the scale that we have been using for MRAG Analysis, which I guess is also developed by the LENFEST Group, this one, the PSA actually ranges from one to three, so we're going to be working a little bit of a different scale.

Dr. Neer: I have a question and I'm not really very familiar with this, but I'm looking at the productivity attributes. Is it still able to produce estimates if you don't have all of that information like you can have portions – like for a lot cases we don't have von Bertalanffy characteristics, so we don't have an age-and-growth curve. I am just wondering – I'm not familiar with the analysis very well – how much of that information you have to know to get this tool to work or are these just examples of if you have some of this information you can get something out of it? I don't know if you're the right person. I am looking at you, but I don't know if you can answer it.

Mr. Nelson: If you noticed on a couple of slides back, it has the data quality, so that is actually ranked on a scale of one to five. That tries to get to the exact point that you're looking at. In the guidance I read one of the drafts early on, but it was a while ago, and it was fairly quickly, so a lot of these productivity attributes you can pull off alternate resources like fish based.

You can get estimates of some sort. By including them in and then assigning a data-quality attribute to that you can get some sort of relative – you know, you have a plane that you're plotting these graphs on, you can get some sort of idea of your confidence in that point estimate that you're making in the PSA Analysis.

Dr. Neer: So you come up with a number at the end, so you quantify that a little bit by the data quality.

Mr. Nelson: The data quality, yes. I do believe they go into your – you know, like just not even having an estimate at all and leaving that out for one reason or another and then assigning a low data-quality score to that.

Ms. Friess: My name is Claudia Friess, Ocean Conservancy. As I understand it, the original LENFEST Report was using the strategy that was developed for the Australian Pound Fish Fishery, and then MRAG modified that to fit U.S. Fisheries. The main difference between what MRAG and NMFS is doing is that NMFS, when they don't have a certain attribute from the list that you just saw, they just leave it out, and MRAG is assigning a high-risk score.

The MRAG scores are going to be higher than NMFS because NMFS is leaving it out, and in their plots they assigned little symbols to show how much information they had or not. They flag it that way and MRAG is pushing it off into the higher risk category.

Dr. Barbieri: So, Mark, just looking at that, and based on what Claudia explained, for the PSA, the 22 attributes, and if some of those attributes are missing, that species, if I understand correctly, would still be at a score there on this PSA, but that would be paired with the other score ranging from one to five based on the data quality, so we would sort of weight – they are weighting sort of a factor for the PSA; is that how it is done?

Mr. Nelson: We're getting into a level of resolution that I don't really feel comfortable answering that in the affirmative or negative. Unfortunately, I don't think I can really answer that specifically.

Dr. Barbieri: I think to us, in terms of gauging what we're going to be able to accomplish at this meeting, we're making some decisions about, well, are we going to complete as much of our framework as we feel it is possible from a theoretical or a conceptual perspective, and then wait to have this report, use this PSA scale that is aligned with the working group's recommendations, and then have perhaps our next meeting a more real applicable recommendation? Mark, again, we are using you as our default person to answer everything about this even though, of course, that wouldn't fair with you.

But, just another general comment from the National SSC Meeting is that at least a couple of people there were very, very critical of the PSAs from a quantitative perspective as being actually able to provide what they considered to be an objective analysis of this productivity and susceptibility for these species; something that would be actually meaningful and comparable you could be using across species.

Mr. Nelson: Yes, I have heard people make the argument – you know, some people say it is not a very good tool, that it works for some stocks and not other stocks. For data quality uses, the general argument is the less you know or the poorer your data quality, the more layers of uncertainty get layered on top of each other, which pushes your stock all the way up into the very highly vulnerable level and is very uninformative.

That is one of the arguments that is floating out there. Again, I haven't been involved in this at the intimate level like the people on the working group has been, and so I don't have the answer for that. Hopefully, it will be addressed in the working group document.

Dr. Neer: And once you guys get the document and get a chance to look at it, that might be something you brought up about using it across species, that might be something you need to decide is whether you can perhaps say the groupers can all be relative, but you shouldn't look at a grouper number versus a mackerel or something like that.

That is something that once you guys see the guidance and we start playing with this you might want to keep in mind because it may relative – you know, for comparison's sake you might want to keep by similar species or something. It may not be useful across species like the comments that you were making, but it may useful within a sort of grouping once we find out how to actually to do it.

Dr. Reichert: This may address what we were talking about, the fact they all seem to fall in that three-point-something range.

Dr. Barbieri: They didn't send this ahead of time but made available to anybody who asked for it. Some of us did and I can give all of this to Julie and perhaps she can make this available to everybody. I have the whole set of presentations for all the presentations that were given there. Most are already in the National Meeting Report; most of the presentations are already there.

Dr. Neer: So, Mr. Vice-Chair, do you want to take a break now?

Dr. Barbieri: Yes, I think it will be more productive if we wait for them and get started at that point, so let's take a 15-minute break.

Dr. Belcher: Luiz, I am going to defer to you to get us started on how we're proceeding forward.

Mr. Carmichael: I have up on the screen the version of the spreadsheet I guess as you guys modified while we were otherwise detained by the SSC Selection Committee. We have some columns for buffer add-ons. Luiz had mentioned Column E. I think by Column E he meant the PSA column.

Dr. Barbieri: Right.

Mr. Carmichael: So do we want to go and look at the PSA column as we had before based on the MRAG risk stuff?

Dr. Barbieri: I think it is worth us having this discussion on the record. Basically, we came to the conclusion that the MRAG PSA Analysis gives us a beginning, but it is just one of many systems available out there, and we want to wait for the NMFS Workgroup Report before we proceed. At this point we're not ready to address PSA. I think after looking at that MRAG Report, we came up with more questions than we could answer.

Dr. Belcher: Again, we were at the national meeting, so like you said, it was more for a placeholder and the fact that there is something out there that has been done for South Atlantic stocks, and it is just a start.

Ms. Lange: Well, I think part of the question on how useful it is and why it was so high was Claudia had mentioned that the difference between the NMFS and the MRAG numbers were that NMFS didn't use – if a value wasn't available, if the minimum age wasn't known or maximum age wasn't known, it wasn't included, but it was given a high level of uncertainty or susceptibility or vulnerability by MRAG. So if data were missing it was assumed to be high, so that may be why those numbers were so high all the time.

Dr. Barbieri: Well, in terms of next steps my take-home message, but I haven't really heard from a whole lot of other people, was let's leave the PSA Analysis really to be completed. Let's leave this as a placeholder and to be completed after we see the NMFS Working Group Report and we have more time to digest that and to integrate that into our thinking.

Dr. Neer: Just so it is clear, the report that is coming out is just providing the guidelines and the tool. It is not going to have done all the values for us. We're going to need to produce all those values for our species of interest.

Dr. Barbieri: Correct, we're particularly interested in their framework.

Dr. Belcher: What is our next step?

Dr. Barbieri: Well, the suggestion was we would go see the buffer values that Erik – you know, because that gives us a starting point to start the discussion on the buffer values.

Dr. Williams: Yes, and let me start by explaining what I did here, which is keeping in mind that the council has already weighed in on what sort of probability of overfishing they're willing to live with, which was 10 percent to 50 percent. The probability of overfishing equal to 50 percent is essentially setting ABC equal to OFL.

We want to back off from that essentially for various reasons, more uncertainty and so forth. Since the range is 50 percent to 10 percent, we have four categories. I just assumed, all right, we'll rate those four categories equal. The max penalty then for each one or max would be a 10 percent buffer for each category.

So if we were at the lowest end of each category, we would go from 50 percent all the way down to the 10 percent value, because we would get 10 percent for each category being at its worse level. Then I just assumed a linear relationship along the axis of the categories within a level. That is what I did here, so if we have four categories, then we start off – say, the characterization of uncertainty, if it is high, we don't change the buffer.

We start with a default of 50 percent and we just sort of work our way down. In the case of the uncertainty characterization, if it is high then we don't make any change. If it is medium then we drop it by 2.5 percent; if it is low, 7.5 percent; and none would be 10 percent and so on. So the total overall range, if we add it all up, the most buffer we're going to add is a 40 percent reduction in P-star, which means then we would be at the 10 percent P-star analysis for that situation.

At the top end we could have a situation, but I don't think we will ever be in that situation, if we were at the top level of each category, then we will a situation where ABC is equal to OFL, but I don't think we'll be there for any of these. That is a starting point. Now, the assumption here is that all these categories are equally weighted. We may not even want to make that assumption to start with; I don't know.

The other assumption here is that there is a linear sort of trend within the level. Maybe it doesn't have to be linear. Maybe we believe that there shouldn't be that much penalty for a difference between high and medium uncertainty characterization or something like that. But, this is a starting point as Luiz pointed out.

Dr. Belcher: I think I feel pretty comfortable with the idea of the equal weighting. I mean just from generalized ideas of what you do in situations where you're trying to apply a proportionality and you really don't know which way it is going to go, you always kind of start for what puts everything on an equal footing.

The linear thing, until you have a better way in which to assess what that relationship is, I almost have a feeling you can't – if you're going to say it's non-linear, then what is it? Most folks pretty much understand a linear depletion model. I don't think we're stepping out of the scope and the boundaries that we're working in and it is enough to understand for folks. Any other thoughts?

Mr. Chester: So these buffer add-ons are expressed in terms of absolute reductions in P-star?

Dr. Williams: Exactly.

Mr. Chester: Erik, I know it is going to vary from species to species, of course, but for something that you're familiar with like gag, what does this translate into? Let's say if you reduce it from 0.5 to 0.4 on your P-star, what sort of actual difference in catch are talking about?

Dr. Williams: Yes, that's one of the ten thousand dollar questions. It is species-specific. I think in the case of gag we looked at – I would have to look at the table. We have a table that had the various P-stars and the catch corresponding to it. I don't think it is much; like a 10 percent change in the P-star only amounts to about a 5 percent change or less in the catch.

Again, it is totally a function of that uncertainty distribution, too, and we have to realize there are going to be weird situations where you may have an asymmetrical error distribution and things like that. I know this makes it tricky to interpret because we are talking about probability of overfishing, but that is sort of how Magnuson is written is in terms of preventing overfishing. But we need to work in the metric of catch ultimately, so we're trying to translate probability of overfishing into catch and catch reductions like that, so we are going to going to be floating back and forth a lot of times.

Mr. Chester: So at least in the case of gag a relatively significant reduction in your probability of overfishing only necessitates a relatively small reduction in catch level?

Dr. Williams: Right, and in general that will be the principle because if you think of your production curve, it is a dome-shaped curve with the center being at Fmsy; and as you back off from F it is going to decline slower and then increase as you get to really low values of F.

Dr. Neer: I have a question on the stock status one, but you have for overfished and not overfishing as the highest buffer, but the system was based on preventing overfishing. If it is already not overfishing, why does it have such a large buffer? I know it was a linear down your four things, but that particular wasn't the –

Dr. Williams: Right, it was linear but I also thought that when you look at the sort of issues for the biology of a stock, that it is worse for it to be overfished than to be overfishing because you can address overfishing generally quicker than you can overfished.

Mr. Chester: Following on with what you said about being near the dome shape, that is probably true for P.5, but if we're at P.25 then probably a buffer of 10 percent may wind up, I'm guessing, with a proportionally much larger decrease in the catch level.

Dr. Williams: Well, again, it depends on the interplay between the level of uncertainty and your Fmsy estimate that comes out of your stock assessment; in other words, the probability distribution of F and how that range of F fits on that parabola graph. Maybe the uncertainty in our Fmsy, the lower end of that is only at – let's say our Fmsy was 0.2 but the lower end of the uncertainty distribution was only 0.1.

So, even when we're talking a 10 percent probability of overfishing, we're still within that range of 0.1 to 0.2 F, which on that parabola is still not going to be that much of a reduction in msy, so, yes, it is going to be tough to understand this. Each time we're going to need a table in front of us that basically has all the P-star values and the associated catch level with it.

Mr. Chester: And while this approach makes sense to me, I think we're going to have to be able to articulate it to the council very well because it is not going to be pleasing to see the same kinds of reduction in percentage probability of overfishing translate into much different reductions in catch from species to species.

Dr. Barbieri: And, Erik, I assume then here that for those cases in terms of the type and quality of the assessments where you cannot really estimate, because you don't have a probability distribution function for Fmsy and cannot really come up with actual estimates of P-star, you just start from that value – you assign a value?

Dr. Williams: No, that is a whole different situation and we're going to have to think about how we're going to handle that. Essentially one way we could is assume some sort of default msy to F relationship or catch to F relationship and then apply that using the P-star. And if we don't have a distribution, then, yes, it is going to get tricky.

Mr. Chester: One more question, please, and this comes back to my confusion earlier about the characterization of uncertainty. Where, if anyplace, do we take into account the fact that we have a high uncertainty characterization and that the uncertainty itself is rather high?

Dr. Williams: Again, if you have a high uncertainty; then for a given situation a P-star of 0.25 is going to differ in the catch that is associated with that depending on the uncertainty. A higher uncertainty, there is not that category, but more uncertainty is going to result – a P-star of 0.25 is going to result in a much larger reduction than a low uncertainty case.

So we're sort of assuming that scale is there. Now we're adjusting the P-star for other factors that don't play into that. So under the perfect system we characterize uncertainty perfectly

everytime, and it can be small and it can be great, but we're still characterizing it fully, and we have everything we need.

A P-star of 0.25 then is going to always give us a catch that corresponds to the level of uncertainty, but now what this is addressing is that additional uncertainty that maybe we didn't quite fully characterize the uncertainty. We didn't have all the niceties and so now we're saying let's adjust our P-star because things are incomplete. I fully expect that communication of all this is going to be very tricky. I mean it has taken me a while to even wrap my head around this whole concept, and I know it is going to take a lot of people some time.

Mr. Carmichael: Erik, did you take the next step of applying these numbers to our answers on the other sheet?

Dr. Williams: That is what I was going to start to do next. I figured you could do that. Actually if you're a really whiz-bang excel programmer, it would be easy to make it do it by itself.

Mr. Carmichael: I think so.

Ms. Jensen: Erik, did you have a presentation on the P-star analysis that you were going to give at one of these meetings?

Dr. Williams: Yes, I actually did have a presentation I never did end up giving that had a quick overview of how we can compute these probabilities. I would be willing to go through it people think it would be useful. It is just sort of trying to explain the Shertzer et al method that was written up in FishBul.

Ms. Jensen: I guess it might help me to understand a little bit about the background of that.

Dr. Williams: Yes, I would be glad to do that. All right, I will muddle through this because I put this together months ago. Essentially this is a description of the probability method that we're sort of talking about. Of course, I have the wonderful opening slide describing the OFL, ABC, ACL and ACT system, which ACT is now optional but really exists when you define it in terms of AM. Even though they say it is optional, it exists.

Here I was pointing out the fact that the likely relationship here between OFL and ABC, it is rare that OFL is going to be equal to ABC, so ABC is almost always going to be less than OFL. The reality is ABC and ACL are likely to be very similar, and then ACT will be something less than that. So, OFL we typically express in terms of fishing mortality rate, but ABC is in terms of catch. So here is where we get this translation from F to catch.

So, given an equilibrium setting or given a stock-recruit relationship and a fixed selectivity and life history parameters and all of that, then you can get a one-to-one correspondence between fishing mortality rate and the landings, and so that is shown here. This curve, it doesn't always look this way. In this case it happens to not come down – well, it does eventually. If the fishing mortality gets high enough, it will come back down to zero.

In most cases it will come down a little more rapidly. This is an example of vermilion snapper. Typically the peak of this curve, if it is equilibrium landings, is Fmsy. Where this peaks corresponds to the catch level that corresponds to msy and the fishing mortality rate at that peak is Fmsy.

So in this case you see here, as an example, if let's just say 0.4 was the peak, you could have a reduction in F by one-half, from 0.4 to 0.2 in your reduction in catch is going to be minimal at best, because the top part of this curve is rather flat now, but that is not always going to be the case.

So, let's look at two cases here where you have – here is the case where Fmsy is the solid black line and the blue curve is our estimate of uncertainty about Fmsy. This would be our probability density function or probability density distribution. In this case is a low uncertainty. You can see the peak is high and it comes down to zero sooner, closer to the middle.

This is a high uncertainty, fatter tail, sort of broader distribution, so this would be a case where we had high uncertainty and low uncertainty. So what you can see right off the bat is if you're using just some fixed reduction in Fmsy, that doesn't translate into the same probability of overfishing. In this case the probability of overfishing is much lower here because you are getting to the lower probability of being at Fmsy and here it is higher because of the uncertainty.

So, really, what we're talking about is this then becomes – once you choose a level of F, the area to one side of that in this case becomes that probability of overfishing or P-star. So in this case we have for a fixed F level, we have a low probability of overfishing here because we have lower uncertainty; but here even though we have done the same percentage shift in F, it is still a high probability of overfishing because of the higher uncertainty. I actually computed it down here, so, yes, you can see the probability of overfishing is 10 percent here and 26.6 percent here.

So, when we do a P-star analysis what we do is actually given this curve and given Fmsy, we find the F level that corresponds to an exact P-star; so if we want a P-star of 25 percent we just find where this line should be so that this shaded area equals 25 percent. I directed this talk also to talk about the use of 75 percent Fmsy, and for obvious reasons it is not going to give you same probability of overfishing.

Here is an example so that you visually see these have the exact same P-star of 25 percent, so you can see what the F reduction is. In this case where you have the lower uncertainty, your F reduction goes from 0.5 to 0.43. For a P-star of 25 percent here, the F has to go from 0.5 to 0.36 for the same P-star. Again, just illustrating the difference between low uncertainty and high uncertainty; that as you get higher uncertainty, for the same P-star you have to get a greater reduction.

This is just discussing what would happen if you would then account ACT as well, so there is yet an additional reduction. Maybe I don't need to go into this at this point; this is the complicated version of what the Shertzer et al paper examined, and that is if you carry thing through all the way, you have inferior distribution of management uncertainty as well, which would be the distribution about ACT.

If you do this in concert, then you sort of get this overlapping probability, so then you're looking at the overlap probability of two uncertainty distributions, and then you're trying to fix that at some P-star level, and that then results in an ACT that would correspond to a certain probability of overfishing.

Here I point out you can get into these problems if you have a non-symmetrical distribution, which actually is the more common case for Fmsy. It tends to be skewed distribution. You can end up in the unfortunate situation where the 50 percent probability may not actually be equal to your base run. Your base run may actually be already at 60 percent probability of overfishing.

Here are some real examples so we can actually – this is a table that Alex might be interested in. This is the case of vermilion snapper, so here are levels of P-star and here is the actual catch associated with it. So if we were talking about the difference between a P-star of 0.5 and 0.25, we're talking about 1,500 pounds versus a thousand pounds. Actually, it is a million because that is already in thousand pounds.

Then like from 0.25 down to 0.1, a further reduction down to 795. So, across the whole range, in this case we're only talking about a 50 percent reduction essentially; a little less than that, actually, catch. Now I don't think that is going to be the same for all cases. I think vermilion is a little unique. I think it was a rather flat top-to-dome curve. I don't know if I had another example. I think that was it, so hopefully that helps a little bit in understanding. Does anybody have any questions?

Ms. Jensen: Can you e-mail out that presentation?

Mr. Carmichael: You need to talk about, I think, your stock status criteria because overfishing and overfished gets a negative five. Overfished and not overfishing gets a negative 7.5.

Dr. Williams: Yes, I think we want to flip those two.

Mr. Carmichael: Does one unknown mean all are unknown? For example, we have vermilion where overfished is unknown and overfishing is yes. Would that be the score for overfishing and not overfished or would that be the five as an unknown?

Dr. Williams: I don't know. This is why we're going through this; we're finding the chinks in the armor.

Dr. Belcher: Well, an update on the black and red reviewer, I actually found one so you are off the hook now – Gary Grossman from UGa.

Dr. Neer: I think we have to tell the council and they appoint him, but at least we have a name to put forward to the council.

Dr. Belcher: While is still working, I can give you some updates. There was a motion made in the Selection Committee that we will be separating from the council meeting concurrently with the council. There may be times when we're overlapping some, but in general we will be

separated. I don't think that there was really a time division given, per se. Two weeks kind of got thrown out there, and that got killed.

The hope is that we will have a rapporteur type, because, again, with having that much separation in the past we have an issue with staff overlap between council, committees and us. So if we needed help with staff, we haven't either had it available or whatever. With us being separated, that now makes staff more available to us; so as far as report-writing assistance, the importance of a rapporteur for our report writing was recognized. That was another thing that came up. The frequency we didn't talk about.

Mr. Carmichael: For the PSA business, we started out with some productivity highs along with the relatively low categories. The only thing we filled in the blanks with were the PSA MRAG risk scores, so we may even need to go through these stocks and put some numerical scores or I mean fill in these productivity high and productivity low susceptibility type things, so we can then calculate the buffers.

Dr. Belcher: The MRAG doesn't account for vulnerability, per se. If it is in there, it is kind of wrapped around some of the other species productivity and susceptibility, I believe.

Mr. Carmichael: These are what we have for our scoring, and this is what we have for our value. We have these MRAG risk things. I'll take you up to where we are right now. I turned the assessment in and filled in the numbers, but I guess they were already there. I turned the uncertainty into numbers to make it a little easier for the formula, and then have a lovely excel nested "if" statement to work that out.

So we have got the stock status; I just gave it a score. So the stock status is interesting, and here is the one I was thinking about. I got the vermilion; overfished is unknown; overfishing is a yes. The scoring Erik has is, say, overfishing – not overfished is a two. Overfished and not overfishing is a three. Over and over is a four or minus 7.5. So I said, well, what about if an unknown in one of the categories; is that enough to call it a five? Maybe. That's what I did for now.

And another interesting one is, say, red snapper. It's overfished; it's overfishing; it's rebuilding. It's at threshold it becomes a four. So it doesn't get as much reduction, say, based on status as these up here with unknowns. And even something like spiny lobster, it says, oh, well, I'm giving you a five here because you have this unknown versus this stock we know in the royal flush and it gets a four. The same with black sea bass –

Dr. Williams: So that's why we have that threshold population size so that it would –

Mr. Carmichael: I think so; I think that shows it is worth having that. So if we can fill in numerical stuff in this column to give us information on the susceptibility, this column will fill it in, with one being the less buffer; five being the greatest buffer.

Dr. Williams: Put them all in three for now and just see what we get.

Mr. Carmichael: Three is medium. Three makes them all minus five. How does that look? Column O, that's what your P-star would be set at, right? So ABC for red porgy would be set at the P-star of 0.35?

Ms. Jensen: Is that with a P-star at 25 or 20; what is that?

Mr. Carmichael: That's a starting value of 0.5; all of these bring you down from 0.5.

Ms. Lange: N is what you're tracking for the 0.5?

Dr. Belcher: N is the buffer.

Mr. Chester: So in that scheme, if the council were to pick a P-star of 0.25, there are some species where you're actually below zero, like hogfish, for example, where you're subtracting 32.5.

Mr. Carmichael: This approach would not work if they said start at 0.25 instead of 0.5 and make 0.25 your maximum. We would have to reconfigure this because what Erik was start at 0.5, take the range, break it up into four and give everything in four categories and designed to get you either no changes and you stay at 0.5; maximum precaution applied, you end up at 0.1, so you stay within the range, but you don't end up at the same midpoint for each stock.

I don't know that the council will necessarily object. I mean look at it; you're saying that – for yellowtail snapper you're saying it would be okay to set an ABC that's only slightly below the msy, the midpoint msy, the 50 percent overfishing msy, which is the OFL, so you would be pushing that one pretty close.

Dr. Belcher: But I thought yellowtail was one of the few that actually there was no problem with it.

Dr. Barbieri: Right.

Mr. Carmichael: Yes.

Dr. Belcher: But I mean do you have downward adjust ABC then if you're not overfished and undergoing overfishing?

Mr. Carmichael: Let's look back at it and see why you're downward adjusting one that is in pretty good shape. Well, for one reason we're downward adjusting it is because we entered a 0.5 for the susceptibility of overfishing. So let's go over here to this thing and say what do you really think the PSA of a yellowtail might come out to be? And let's look over here; do you think it is – let's just do this one – is it high productivity, low vulnerability, low susceptibility? If so, then we change that to a one and now give it a score of zero.

Dr. Barbieri: Wait a second, right now you gave three to everything.

Mr. Carmichael: The placeholder we gave three to everything just to get a look at it; so if we say, well, you know, yellowtail snapper, that's a one. There are no productivity PSA concerns. Then that brings this up to 48.5. You would be pushing this thing right up close to your maximum allowable by law.

Dr. Belcher: But I guess my question comes down to if you've done the assessment and you have no reason to believe that it is having issues; are you actually going to be looking at changing your fishing levels? I mean are you going to do regulations on a fishery that has no issues? You're not overfished; you're not undergoing overfishing; it is checked off, so are you going to be still be putting regulations in place on it that would suggest a cut in ABC?

Mr. Carmichael: You're not necessarily doing that because if want to go down that path you have got to remember that the council is not targeting MFMT; and the yield at MFMT, that is the limit and that's where the 0.5 comes in, and that's the msy. The council, in a stock like yellowtail snapper, should be targeting OY, which is already somewhere down in this realm, anyway.

You're not fishing at Fmsy; that is not your target on yellowtail snapper. Your target is Foy. So we could look at what yield this gives you, this 48.5 percent of the maximum versus what they give at OY, but it may very well end up, by the time you go through ACLs and everything else, fishing at the current OY is absolutely adequate for yellowtail snapper. Remember the ABC is the overfishing point. This is where you're saying that it is adequate to prevent overfishing by setting a maximum harvest that is only a few percentages below your point estimate msy, MFMT yield.

Dr. Belcher: I'm just thinking about how you're going to explain to a fisherman why you're cutting a catch allowance if everything looks okay. I mean I'm understanding from a scientific standpoint.

Mr. Carmichael: I don't know from this that you are cutting the catch allowance.

Dr. Belcher: I guess I see what you're saying, because you don't know what the 48.5 actually is.

Dr. Neer: And remember we're also supposed to be now accounting for scientific uncertainty. We're never going to think our assessments are perfect, so obviously we're already saying that somewhere along the line if we come up with a not overfished and not overfishing, we may believe that but we don't necessarily believe those actual numbers. That is why you would also probably want to downplay it a little bit. Even in the best case you're not going to go, oh, yes, these are 100 percent correct that that's the number.

Dr. Belcher: Well, again, I'm just thinking about in certain situations where you might have where things look good, but in order to get where we ideally should be that results in a cut. I can just see a fisherman kind of having a tick because it is like, well, in the past if everything is in the smiley face zone there shouldn't be any additional things needed, right.

Mr. Carmichael: So what you're saying is you would come down 2.5 percent for your scientific uncertainty, and your scientific uncertainty is reflected in your treatment of uncertainty. Well, that's it, just the treatment of uncertainty because everything else across the yellowtail snapper is zero, so your characterization of uncertainty is not as good as it could have been so you got a slight reduction. What stocks come out with the biggest reductions; vermilion snapper, red snapper, hogfish and goliath. Hogfish creates a situation.

Dr. Williams: My only concern now, looking at this distribution of numbers, is we were originally talking around the 25 percent P-star and maybe 30, but if you look at the number of stocks there above and below the 25, the majority are above, and I don't know if that is a desirable maybe outcome for this given our previous discussions.

Dr. Neer: The council recommended 25, right, with a range of 10 to 50.

Mr. Carmichael: The council made that motion after significant advice from the SSC.

Ms. Coakley: Just a quick question, and I know Erik touched on this before, but I didn't completely understand. So, you got your P-star; and in the yellowtail snapper case, that is reducing your P-star by 2.5 percent. Now for yellowtail snapper if the assessment is relatively good and you have a lot of confidence in it and you have got that probability distribution, so you can slide down that probability distribution for your F rate and then relate that directly to catch.

Are there any up there that you don't have enough information to translate this to what the catch rates would be, or did you say that maybe you do it as some proportional to like the indices and then the catch rates and try to translate this P-star into whatever the actual catch is going to be? That is just the part that wasn't super clear to me.

Dr. Williams: No, that is a topic we have to still cover is what are we going to do in the cases where we don't have a translation from F to catch or we don't have an F function that we are dealing with. We're just dealing with catches.

Mr. Carmichael: We could rescale the 25 by making in this point zero and using positive and negative.

Dr. Williams: Right, that was actually the original way I was thinking of setting this up; or the other way we can adjust it is not have our upper end be 0.5. It could be 0.45 or 0.4 or something. I mean Mark made the point, and I think it is kind of sort of stated within the NS1 Guidelines, that there is no expectation that ABC will ever be equal to OFL or in very rare cases. I can't imagine where we're going to have stock in the southeast that is going to be in that situation, but with this we could, actually. It looks like there is a higher probability of that occurring than I would have thought.

Mr. Nelson: And one way that you could address that is by just changing the metrics. Instead of having like minus one or minus 0.5 or whatever, you could adjust those metrics. Like you said, you know, it is all workable at this stage.

Mr. Carmichael: Is it more defensible to recap from the midpoint; that 0.25 and go up and down?

Dr. Williams: When I started to think about it in those terms, what is the midpoint, in other words, each of those factors, then we have to say, well, what is neutral. It is hard to say, like, for instance, on the stock status one, what is neutral? It seems like really neutral is not overfished and not overfishing, in which case, then, you're looking at all – it doesn't quite work out very well there.

Mr. Carmichael: Neutral becomes like overfished and not overfishing.

Dr. Williams: The other thing we could do is still have the upper end be 50, but we shouldn't – maybe some of these there is no zero. Maybe there is always at least some reduction. That's another way to think of it.

Mr. Chester: Yes, like Mark said, you could increase your maximum reduction for any one factor at 12.5, which would add up to –

Dr. Williams: Well, no, we can't do that either because we don't want to get to the point where we could get below that 10 percent because the council did say that's as low as they would want to go. The sum of the max should not exceed 40.

Mr. Carmichael: Your uncertainty characterization, we only had four so you could give the ultimate zero, and then that would say, yes, if you characterized every uncertainty possible, then you wouldn't have to take anything. Otherwise, you're taking at least 2.5. I have looked at susceptibility –

Dr. Williams: Well, the other one is we have not overfished and not overfishing, but we could have – the zero could actually be another threshold or another condition which is unexploited. That would be the zero, and we don't have many unexploited stocks.

Mr. Nelson; Yes, or instead of unexploited it could be greater than like 1.5 Bmsy, some level of Bmsy where you're not really overfishing on any one year is not a concern. Chronic overfishing would be a concern, but overfishing in any one particular year is not a concern. That could be 1.2, 1.1, 1.5, whatever.

Mr. Carmichael: Is that kind of what we're thinking on the stock status, perhaps; you have a minimal F and a large biomass it would be a zero. If you're not overfished and not overfishing, minus 2.5; if you're overfished or overfishing, minus 0.5; if you're overfished and overfishing, minus 0.75; and if you're unknown, you're minus 10.

That is a pretty good penalty for the unknowns, but I don't know that that is contrary with the intents of all this business. That tells you something like hogfish, you could raise your catch rates by doing an assessment that gets approved, and I think that is very much carrot the agency is looking towards in this whole business with these laws.

Dr. Barbieri: In that case, then, you just did away with the threshold?

Dr. Williams: The threshold doesn't play into P-star because if goes below the threshold then it is in another realm. Then we're talking no fishing at all. There is no need to compute a P-star buffer at that point.

Dr. Neer: Does the unknown mean if either one of these parameters is unknown, then it gets the term? I guess we'd only not know biomass, really.

Mr. Carmichael: That's the way I ran with it, so that means something like vermilion you could increase your catch rates if you could solve your unknown problem. Will that put pressure on you to get more estimates out of some of these assessments? That could be one downside. It could lead to some posturing and influence to say, "By God, don't make that thing unknown; put it as known with great uncertainty."

Dr. Williams: That will be up to the reviewers ultimately.

Dr. Neer: They produce estimates; the reviewers just said we don't believe them.

Dr. Williams: We go charging into reviews all the time with our stock-recruit curve and half of them get rejected.

Mr. Carmichael: That is very true; that is where they do tend to get squashed.

Dr. Barbieri: And, there is the fact that we review all the reviews that get here, so we do have a chance to evaluate what calls were made by the reviewers and apply our best judgment there.

Dr. Williams: That last Productivity Susceptibility Analysis, it might benefit us to turn that into a five-level scale, at least. That would get us some more spread.

Dr. Reichert: I agree.

Mr. Carmichael: So how do we turn this into setting these nice values? Do the ends first?

Dr. Williams: I think once we get a PSA Analysis in our hands, then we can figure out how to convert it into a five-scale system, I think, once we have an analysis done. That is easy enough to do.

Mr. Carmichael: Would this ever be an unknown or is this something you would always force yourself to do?

Dr. Reichert: I think you can ultimately put a number there. I cannot think off the top of my head in each species where you cannot come up with a number.

Dr. Williams: Right, yes, even in the process of doing a PSA Analysis, if you run across a factor within that analysis that is unknown, you just assume the worse case or something like that.

Ms. Coakley: I have a question sort of on another subject, but it is something I had mentioned to Luiz and Alex earlier. You're developing this procedure for setting the control rules; and it is something that once you finalize this it is going to go to the council to vote on that. Is it your intent to then take these control rules and through like an amendment hard-wire these into the FMPs themselves or is it going to be sort of a flexible procedure that the SSC uses as a group; and that like next year, if you decide something is not working you can modify it – you know, that is not wired into there, because that is one of the things that we're debating sort of internally as the staff on our end is do these things have to be hard-wired into there or, you know, can we leave what is in the FMP and then have these as a process that the SSC uses? I am just curious about that.

Dr. Belcher: I think my general interpretation – and we can pretty much go around and ask the group – was that it was something that was external to the FMPs. It was a tool that we were using to come up with those numbers to be used in the FMP, and it would be a dynamically usable system in the sense that we can review it.

There may be cases like we've had those situations where we have named a case, don't have a specific example for it, so it is on the teeter-tauter of being tossed. It may come into play somewhere down the road, and we have to add it in and accommodate for it. So, by putting it in the FMP I think we would kind of be limiting ourselves where if we keep it as our external process it better serves us. It could be an external.

Mr. Coakley: One more followup. Based on what is in your FMP, do you foresee any conflicts like, say, if you have a rebuilding plan in an FMP that already specifies some sort of prescribed rate and then the ABC you recommend comes in, I don't know, higher than that or lower than that; do you –

Dr. Belcher: We have kind of already been faced with that, I think, but it is one of those things that one will supersede the other one. Scott, the Socio-Economic Subcommittee that we were discussing here, they did endorse for almost like an ad hoc panel; that it doesn't necessarily have to be made of a subgroup of SSC members.

It can be socio-economic folks from outside that sit on it, but the caveat is that it has to be chaired by an SSC member. That was one of the endorsements that came through from them. It can be done through conference calls. You all aren't required to meet where it would add anymore time to what you're doing relative to the SSC duties.

There would be other mechanisms to have meetings that would help do that process without adding more meeting time to what you're already doing. My guess is it would probably come through the council because they do ad hoc meetings for other committees that way, but they report to the SSC. The information would come through us and then we would bring it to the council through that mechanism, which I think is why they figured the SSC person being the chair because then you or whoever is the chair would bring the information to the SSC, and we could talk about it then.

They have also decided we're going to be on three-year terms, so every three years we're going to be reevaluated for our position. It is an unlimited time. You sit as long as you want, but just every three years we have to resubmit our resume and our request to stay active on the SSC. They're actually going to be working out the schedule on how they're going to divide us up, but there will be a third of us that are up for reevaluation in like 2011; and then the next group, 2012. Us older folks will probably be the first group to be reevaluated.

Mr. Carmichael: This will make you a little more formal and structured and not just sort of be whenever they decide to consider membership they will. It will give people a chance to say, "Do I really want to keep doing this?"

Dr. Belcher: In talking about the written record as well, there was discussion that Roy was stating that they would be more willing to get away from the transcription if the reports came up to a level that he felt that it captured enough and that everything was pretty straightforward and well understood with intentions in the report, then the transcripts would more than likely go away, but we have to show that we can write a report that meets that general satisfaction of whoever it is got to satisfy.

Mr. Carmichael: Or you may still have transcriptions in case five years later somebody wants to know what happened; but with a good report nobody will be turning to them in the immediate future. They would be looking at your report. The other thing along those lines is they discussed going more toward a consensus format. It is sort of at your pleasure, I take it, as you'd like to move away from voting and such, and they would actually kind of like it if it was more of a consensus like many of the other SSCs. As long as you make it clear what your recommendations are, we can away from this "I move that" type stuff.

Dr. Barbieri: Well, the discussion at the National SSC Meeting was kind of funny because we realized we were one of the few – I guess us and the Gulf were the only ones actually still using voting, you know, Roberts Rules. All the other ones operate by consensus, but I somehow cannot conceptualize how we will be able to do it in a real productive way without voting.

Dr. Belcher: And I brought that up because we tried it. When Jim Berkson was chair we tried to do it by consensus and we had reports, but what we did was pretty much answered the roadmap, and there wasn't a lot of the SSC recommended, supported, suggested. That language, which is where you and I saw relative to these other reports, when the SSC got to a point where they were making consensus, it was always some statement relative to what the SSC was asserting forward; the SSC recommends. You know, there was something that basically caveated it with the SSC did whatever the action was.

Dr. Neer: You guys sort of do that now. A lot of your motions say, Motion Number 1, the SSC recommends that this go forward," and then you vote on it, so you already are crafting that language. It is just a question of how you are deciding whether the SSC recommends it or not. I think it is what you're struggling with because a lot of your language – especially, I saw that at the Gulf already was doing that, too, the last time, but you're choosing that as being recommended or not recommended based on the vote.

Dr. Belcher: The main thing, too, is Roy said that he is not opposed to us having split views on things, but he, again, needs to see what the split is. You know, we move through with these motions that you end up with like, say, a seven-six split. Well, seven are for, six are against, it carried forward, but what was the opposition, what was their biggest reservation about the motion that went through.

Even though it carried and it passed, you're still dealing with that almost like having the idea of a minority report, which obviously if you have a minority report, are you really getting a consensus? That was one of the discussions that came up at the national meeting, too, how do you have consensus if you allow for a minority report? At least they're not completely opposed to transcripts going away. That was the main take home on that.

Ms. Coakley: In terms of our SSC, they operate by consensus. I am not the staffer assigned to our SSC so I haven't had a lot of experience working with that, but we have had monitoring committees for a very long time, and they operate by consensus. The way we have always put forward recommendations to the council is if the whole group comes to consensus, when I write my summary I say consensus recommendation and explicitly state what that was.

But if they don't come to consensus, basically say recommendations, and then say the majority of the group recommended this; however, there were alternative opinions which, you know, again, the minority report and made a real clear distinction that it was only consensus when everybody comes to agreement on an issue.

Otherwise, it was just going forward as recommendations; and for those groups we don't use motions, and we haven't operated with motions for a while. It seems to work for that, but it's again just giving you sort of the perspective of how we're operating on that, which each SSC and each council operates a little differently.

Dr. Reichert: So I guess that means that we, as the SSC, need to produce more comprehensive reports, so that may mean that we maybe during the meeting should have a little more time in actually starting the writing. Because, with everything else going on, after we leave, a lot of that will be increasingly difficult to produce, so maybe a standard couple of hours a day, set that aside to meet and start writing the report.

Even if we have a draft available at the end, then that is a lot better than actually having to come up with a report, and especially if we're not meeting with the council and a lot of the stuff isn't immediately needed as it is when we meet with the council, we are running the risk that that may fade away.

Mr. Carmichael: Yes, hear, hear, I couldn't agree with that more. We really tried to do that last, what, June we had an afternoon set aside. It was a great discussion and a lot of new members, and then in December our earliest agenda had a fair amount of time set aside for you all to discuss it, and somehow by the time we got to the meeting all of that got filled in.

We're going to have to have some restraint, and that fits into the business about meeting a little more often, perhaps. I felt like we have had a good pace at this meeting and we have been very

productive. I am wondering how much having things projected up on the screen as we discuss them will help you build consensus statements. I think that is something we should definitely work towards for the future.

I talked about with changing in staff and what we might do with new staff that gets brought in, if we can refill the position. One thought that I have had is that maybe I'll be the official staff even if we do fill the position, and bring the other person in as more of the rapporteur to the committee during the meetings to take notes and sort of be – their primary task would be to take notes and try to get consensus statements down and to work with people and the chair to get the report polished up and provide you with more staff support at that level.

I think that and then getting off of meeting with the council some so that staff isn't getting dragged off to go to some other meeting will definitely help the flow and make us more effective. A lot of these changes, if they come together, could make our reporting a lot better and just giving you all more support.

Dr. Reichert: I agree with that because me personally, I think it is very difficult to at the same time make very detailed notes and participate fully in the conservation.

Mr. Carmichael: Well, I took a stab at it and I just couldn't stand all those threes under the PSA so I filled in with some values. I said if it is greater than 3.5 it got a 4, if they're all in that 3 pointish range. If it is less than 3.5 it got a 3; if it was below 3 like the 2.6 on amberjack I gave it a 2; king mackerel and Spanish had nothing, I gave them a 2; goliath had nothing, I gave it a 5; spiny lobster is a bug so it gets a 1.

Yellowtail snapper we had put in as 1; that maybe could be 2; if bugs are going to be ones; bugs and menhaden-type critters would be ones. So that says yellowtail snapper, you would be fishing at 40 percent. The SSC would say ABC should be set at 40, so you would be coming down 10 percent from you have traditionally recommended as your maximum fishing level.

Then from that the council will set an ACL and potentially an ACT, and allocations and everything that goes under the sun; and if the council chose to be more conservative and could set its ACL at the 25 percent level, that would be consistent with your recommendations, which is something I think worth remembering. The council can always be more conservative.

You're providing an upper bound under the law to them. They can always be more conservative. The average of these across the board ended up being a 30. Goliath came out at the basement at 12.5, and the maximums are 40s, which is yellowtail and greater amberjack; king mackerel at 35; mutton at 35; tilefish at 35; sea bass at 35; red snapper is 25, but red snapper would be a threshold and would be a rebuilding. We also have rebuilding to deal with which would some changes for some of these, anyway, because they would be under rebuilding plans. That doesn't seem to be too bad, actually.

Dr. Neer: John, did you rescale to the 40 or did you just change this?

Mr. Carmichael: I just changed the value of the – we made the zeroes become – we just gave the zero reductions for the maximums on things. It is these over here; the ultimate uncertainty, the minimal F large B, and then the PSA would just be scaled to some low-medium, medium-medium, high-high, which as we said, well, this is just on hold until we get the details of all the approaches. We may have done as far as we could do right here. So, then, I guess Erik takes these, looks at distributions of F, gives the P-stars and we're home free?

Ms. Jensen: Do we need to take into consideration what I mentioned before about if we're not overfished and not overfishing but approaching the threshold; should we increase the buffer for that or is that something for management uncertainty?

Mr. Carmichael: Let's go back there. That one fish is gag, so it would be fishing at a 32.5.

Dr. Williams: I think the tricky think is then how do you define approaching, and then that gets into a messy thing.

Mr. Nelson: MSA does defines approaching if it is projected to become an overfished condition in the next two years.

Mr. Carmichael: What are we obligated to do in that instance?

Mr. Nelson: Basically you treat it as overfished, and you need to take action to prevent it from entering an overfished condition.

Dr. Neer: If it is overfished and not overfishing?

Mr. Nelson: Well, it is assuming the cause is overfishing, and so taking management action to reduce fishing mortality so it doesn't enter an overfished condition.

Mr. Chester: A question for Erik, seriously, if we really do expect numbers by June, is that something that we're not striving for or the council needs to make a request to the Science Center for?

Dr. Williams: The council will need to make a request for that because that is not forthcoming. It is not on my radar.

Mr. Chester: And some of these species concern Miami and not Erik's shop in Beaufort.

Mr. Carmichael: How could the P-star analysis be provided; could you provide a distribution of landings across P-stars from 0.1 to 0.5 by 0.01?

Dr. Williams: Yes, it could be that simple?

Dr. Barbieri: Because somewhere in those assessments you already have been providing those tables, anyway.

Dr. Williams: Right, I think in the last couple of SEDARs we have already done that analysis, anyway, so that already exists.

Dr. Neer: King mackerel doesn't have it.

Mr. Carmichael: Yes, but that is another branch of the Science Center that those guys are going to probably have to do that.

Dr. Neer: Well, I know it is a new term of reference and now they are going to have to do it.

Mr. Carmichael: It is not a term of reference; it is the management desired quantities that will go in the memo that they will have to do.

Dr. Neer: It is a new term of reference in the SEDAR 19 to request for a P-star.

Mr. Carmichael: It was in the terms of reference and it wasn't done?

Dr. Neer: No, no, not in 16; it is in 19, from now on.

Mr. Carmichael: I know, but I mean in king mackerel?

Dr. Neer: Yes.

Mr. Carmichael: It wasn't in the terms of reference for king mackerel but it would just be requested that they provide that analysis.

Dr. Neer: Right. You need that error distribution, so if that error distribution doesn't exist you need to create the error distribution before you can get a P-star analysis.

Dr. Barbieri: One other question here is just because we're all here and this is fresh in our minds is to make sure that for this part that we have already kind of sort of finished, make sure that we have everything already well documented of our decisions, because we are going to have to write this down.

Dr. Neer: And then there are all the species that are unassessed.

Dr. Belcher: We have four species under 17 that we don't have on our list for buffer adjustments, and that speckled hind –

Mr. Carmichael: They're done. Well, yes, speckled hind and warsaw grouper, they're done; ABC equals zero. What else does that leave us?

Dr. Belcher: We have got black and red.

Mr. Carmichael: A future assessment is coming; if not – well, let's consider that for a minute. What would do with something like black and red if there is no chance to say wait for the

assessment, come June, fill in an ABC; average landings until the assessment is done; a token reduction to make yourselves feel good about it? I don't feel that good about a token reduction.

Dr. Belcher: We did that, though.

Mr. Carmichael: We did that and got smacked around for it. If we don't have the P-star stuff, do we fall back to 25 percent of average landings; I don't know.

Dr. Barbieri: What are the consequences of not having all species?

Mr. Carmichael: I believe that Amendment 17 is proceeding forward and the Comprehensive will have all species, and I think you're okay.

Dr. Neer: I have a question about speckled hind. As Mark said earlier, we didn't want to set an ABC at zero because it automatically kicks in all accountability measures and that we needed to account for some level of landings, so maybe we should discuss that. How does the group suggest doing that for particularly those two species?

Dr. Belcher: I think that is something that we would have to talk with Jack McGovern, because in the past Jack has been the one that has provided all of the post quota bycatch mortality and such, and I don't know that he doesn't already have numbers for those two species. That would be a good starting point rather than us reinventing the wheel, I think.

Ms. Jensen: I wasn't here yesterday, but weren't we allowed to set the catch at zero, and that just wasn't including bycatch? That's what we were told the last time.

Mr. Nelson: I don't know who discussed that, but if you set your ABC to zero your ACL cannot exceed your ABC, so your ACL is at zero, and your accountability measures are triggered if you exceed your ACL; so if you catch one fish you have triggered your accountability measures. So, your ABC should incorporate all sources of mortality including discards, fishing mortality and so on and so forth.

I mean there is no problem with setting an ACT, you know, the optional ACT, you could set that at zero, and that would be an option; you know, prohibit retention, no directed fishery. That isn't incorporated in your ABC, and ABC is like just the acceptable biological catch and that should include all sources of mortality.

Ms. Jensen: That is what we asked specifically the last time, whether or not it needed to include the bycatch, and the answer was as long as you define it one way or another, you can say you set the catch equal to zero, but you're still allowing for some bycatch. That was our intent, so now you're saying that is not the way we're supposed to do it and that we have to actually put a number on the bycatch?

Dr. Belcher: Let me answer it quickly. Basically when we were talking about this yesterday, the issue is in the past we have given basically total allowable catch, and that number has gone forward. There has been work that has been done by Jack McGovern that has been given to the

council which has a level of post quota bycatch mortality or some bycatch number that they use to adjust relative to what we give them for that total allowable catch.

So what is going to happen now is basically we need Jack's input at our level, so we're really saying zero but we're going to give the number relative to what Jack has for that bycatch. Because what he is saying is you're starting at zero, the council has to, by the way the Magnuson is written, be lower than what we have said. They can't be lower than zero.

With bycatch you're not going ever be able to have zero, so we have to be able to have an idea of what that number should be, and that's where the input should come to us and we should be able to say we're trying to tell you it needs to be zero, but acknowledging that there is a bycatch issue given the estimate that we have gotten from an external source. Because that is how it has been calculated in the past, which would be Jack's numbers, it would be substituted in for that zero. It is just basically bringing the bycatch in at a different level than it has been brought in before.

Dr. Crosson: Or as a number or as just sort of an exception?

Dr. Belcher: It is a poundage, yes.

Ms. Jensen: How do we evaluate that poundage; we have observers?

Dr. Belcher: This is actually something that we've actually reviewed along through the times that Jack has supported. The information has come to us that way through an analysis. The original question we brought you in for was relative to whether or not you had estimates of the bycatch for speckled hind and warsaw from the PQBM Analyses that you've done in the past?

Dr. McGovern: I haven't done any PQBM Analysis for speckled hind or warsaw. I imagine the discard logbook and there are probably B2s for those species where we could come up with some bycatch information, but I haven't done it. I could try and do it if you want.

Dr. Belcher: It was just getting at some of these issues where we're dealing with that ABC of zero, and now we're talking about whether or not there is a bycatch adjustment. As we have said, our zeroes are basically total allowable catch, and then the adjustments have been made at the council level from analyses you have done as to how that number – their wiggle room relative to the bycatch mortality.

So, my understanding is what we're going to have to have happen is for us to give our numbers – relative to expecting a zero we have to fill it in to account for that so you would actually be telling us what the bycatch would look like, so that we could say we're aiming for zero, but accounting for bycatch this is what that ABC is relative to the bycatch because that's all we would be allowing for.

Our intent was setting an ABC of zero and saying no directed catch, and then assuming that the council would adjust for the bycatch, but under Magnuson we can't do that anymore. Because we set zero, they have to set lower than that and it doesn't account for bycatch; therefore, we have to shut the fishery.

Dr. McGovern: Amendment 17 does have actions in it to try to reduce the amount of bycatch of speckled hind and warsaw grouper. It has actions in it that would eliminate any take of deepwater species at all and things like that, and so if you set ABC equal to zero maybe some of that bycatch can be – the incidental catches occurring now could be further reduced by these actions in Amendment 17. We can monitor that over time and see what it is now based on B2s and discard logbook and headboat discards and then see how this action changes it over time, and then that information could be provided to the SSC at subsequent meetings.

Dr. Barbieri: I guess everybody understands the situation that we are in, but just to illustrate once more, what we're trying to achieve with that recommendation is similar to what has been recommended done for goliath grouper where directed catch is supposed to be zero, but we know that with the estimated incidental catch it cannot be helped even with just catch and release. So there will be some losses there even though the fishery has officially been closed for a number of years.

Ms. Jensen: So, just to be clear, there is a certain level of bycatch right now, but there are regulations in Amendment 17 that are going to go into place that may reduce that incidental catch and we could get additional estimates of that later. So if we're going to assign a number now of bycatch that we're allowing, it would be based on the figures that we have now, that you could do an analysis on?

Dr. McGovern: Yes, those actions are proposed in Amendment 17, but I think we could come up with some estimates. The Science Center could assist with this and come up with some estimate of what the incidental catch of speckled hind and warsaw is now with the one fish allowable take and then see whatever actions they take in Amendment 17, how those actions change that over time to see if it actually does reduce the bycatch.

Dr. Crosson: So then we would set the level, we would set a number that would take care of that incidental catch. The council would theoretically, if they wised to, continue whatever the current regulations are. If for some reason fishermen start doing something that draws in larger numbers than that and it exceeds that level, then they could do accountability measures or what have you to – all right, I follow. I guess we're all on the same page.

Dr. Belcher: It is the equivalent to no catch. It is just the problem is that, again, without shutting the fishery down because of incidental catch, it is giving you a little bit of a buffer, which, again, they set it at that level and if they exceed it, yes, it would trigger for the accountability measures.

Dr. Crosson: Well, it is not just that. It is also there other fisheries that might be affected by it, which is a bigger concern, I think.

Dr. Belcher: Everybody seems okay with that approach, then?

Dr. Williams: Other than the fact that discards are self-reported. If fishermen realize that their fishery is being impacted by how they report their discards, which I am sure most of them realize that, those discard estimates are about worthless.

Dr. Belcher: How do we get a better handle on it? I'm open to suggestions. I am just kind of just throwing it out there for discussion.

Dr. Williams: Observers is really the only way you can –

Ms. Jensen: That is what I was going to say; what is the current observer coverage like?

Dr. Williams: And this brings up an interesting point, which is normally we don't get involved in management decisions, but when a management decision is kind of blatantly ignoring something that is a real science issue, what do we do as an SSC? I mean sit idly by and let it happen or do we strongly encourage the council to not rely on discard estimates for managing a fishery when we have limited to none fishery observing going on in most of the sectors.

Dr. McGovern: Amendment 18 has an action in it to enhance data collection including increasing observer coverage and electronic logbooks and a number of other things, so maybe that can help with this, too, and not having to just rely on the discard logbook and that sort of thing, and maybe increased observer coverage can be tied to the logbooks to increase the reliability of that and that sort of thing.

Dr. Williams: I mean it is fine and dandy to put it in an amendment, but in the end if we don't have the money for it, it isn't going to happen and that is what we are ultimately relying on.

Ms. Lange: Erik, I guess I have a question. When you say we're not doing something or the managers aren't doing something to follow our advice. Are you talking about getting the funding for the observer coverage or are you talking about the recommendation should be to end all fishing?

Dr. Williams: Well, no, I am suggesting that a management method in this case still allowing a fishery to be open – I'm not saying necessarily we shut the entire fishery down, but allowing open access essentially to an area and relying on discard estimates from that effort that is occurring in that area as a way to manage a species when they're self-reported discards is not good. There are better tools. I mean if we don't have good estimates of discards, well, then, you move to other management methods, such as closed areas or something like that, where we don't have to rely on self-reported discards. That is my concern.

Ms. Jensen: But it is just our job to – I mean, that is true, that is a concern, but it is just our job to set the ABC and that sort of stuff should be taken into account in setting the ACLs, right?

Dr. Williams: I agree. I brought this up in the context, though, if you have a situation where the council is relying on these discards being somewhat accurately recorded but we know as scientists that they're not – I we could even demonstrate through a time series analysis that as soon as some regulation goes in place you see suddenly a drop-off on the number of logbooks that even report discards for Species X.

I mean that's where science starts to run into management and sort of where do we play a role in sort of evaluating management; or do we; or do we just put the blindfolds on and say, well, here

is your ABC; it's up to you guys. That's why I threw it out there and is that our sole role? I mean, that is fine if that's what everybody thinks.

Ms. Lange: I agree with Erik. Yes, it is not role to put the ACLs, but we're supposed to provide the best available science, and sometimes the managers may not be aware of a situation or they may need tweaking or prodding from the science as far as what the issue should be. It is not just the straight numbers that they ask for. If we know they're not asking the right questions, I think it is our responsibility to make sure they're aware that there are other questions out there that lead to better science, and we just need to make them aware of that.

Dr. Belcher: I agree with both of you on that. I think it is our job that, again, that is a science question. They're making the choice to use that as a management tool, but I think it is important for us that, okay, you want this measure, but we're going to caveat it and tell you while we're giving you this number, this is not going to be the answer to your problem down the road. You're introducing a whole nother issue that can happen and you need to be aware of that. I think we really need to start strongly putting that on there.

Dr. Williams: And one place where we're potentially going to interface with this is in the determination of – well, I don't know if we're going to determine ACT, but when they set an ACT and then the determination of – when somebody has to go back and measure whether we have met the accountability measures or not, well, you start to bump this back into the science realm.

For instance, if we're asked to look at the discards for speckled hind to see if we exceeded an accountability measure, well, my first inclination would be, fine, we'll take a look at that, but we're going to do a complete analysis of those trips that we had observers on, those trips that we didn't, do a full adjustment for the non-observed trips and bump that number up potentially way beyond the accountability measure, but the council may not have been thinking about that when they set up the accountability measure in the first place. This is why there needs to be maybe more of an interplay between where we're coming from and what they're planning to do with management.

Dr. Reichert: I was thinking about, okay, if we account for that, then in some instances we know that we will never get where we want to be so we're not ending overfishing, correct? Isn't that counter to Magnuson-Stevens? I mean how are we dealing with that? I was thinking back to when we made a decision on speckled hind and warsaw grouper to set the ABC at zero because we had enough information to set the ABC as zero because ultimately we want to end overfishing.

I realize the complications but I'm just trying to get to grips with how we approach this, and speckled hind and I think warsaw grouper are two examples where if we have good indications or good estimates of the bycatch mortality, that may put us at a level where we're not getting anywhere any time soon or ever.

Mr. Nelson: Hopefully, I can shed some light and help by an additional explanation. You can think of even in these cases where you want to prohibit take as much as possible and reduce

mortality to as close as to zero possible because of a low population; you can always think of this population, even though it is very low, you can think of it as having theoretically some level of sustainable – you know, sustainability, sustainable catch at a very reduced population.

Then you have uncertainty around that estimate and so that is really where the ABC is going to be set for these populations that are greatly reduced. Now, the ACL cannot be set any higher than that so you're saying, you know, like, okay, at any level above this ABC the population is going to continue moving downward.

So, you're setting the limit for the council; they cannot set the ACL above that. Of course, they can set something that we can equate to an ACT or a TAC or whatever at zero, but what setting that ABC at that level does is if we get the data that says discards and mortality – you know, fishing mortality from discards exceeds that ABC, then that is going to kick in additional accountability measures which means, okay, well, maybe a bag limit of one is too high or maybe we're going to have to take management actions on other stocks in order to protect a more vulnerable stock.

So, you really view this not very much differently from other stocks that are at higher levels and just set that line in the sand that anything above that overfishing is likely to be occurring or could be occurring, depending on your uncertainty, and then when that estimate of bycatch comes along, if it exceeds that, you know there are additional measures that going to have to be taken in order to make sure that you reduce that mortality further. I hope that helps.

Ms. Jensen: So our job is to account for the biological uncertainty and it is the council's job to account for the management uncertainty. I guess the question is if we set a limit on the bycatch and we're expecting the reported bycatch to decrease, the reporting rate essentially, is it our job to kind of set some sort of buffer increase? I mean is that biological uncertainty or is that management uncertainty? I guess that is where I am kind of confused. I mean are we supposed to increase what the ABC is based on some sort of reporting rate we're expecting versus what we have now?

Dr. Belcher: To me it is a double-edged sword because we have certain instances where bycatch has been built into models, so it has become part of the biological uncertainty. In other situations there hasn't been the information for it to be included in a model, but it is coming from outside sources as a measure of it. So, because it is coming external to a SEDAR process or through an assessment process, is it biological or is considered non-biological? That is kind of the question you're asking.

Ms. Jensen: Yes.

Dr. Belcher: So if it is embedded in one, is it, but if it is outside of it, it is not. Is that what she is getting at or what I'm trying to get at? We have built in discards into other models that have been accounted for in the stock assessment. We have had situations where it has not been part of the stock assessment, but we have had an external analysis that has come up. It's still bycatch; it is still some removal of the biological stock. Because it comes external to that process, is it now considered differently than biological uncertainty?

Ms. Lange: It is the data. I mean that is what we base our science on as part of the scientific process. How the estimates are derived, however Jack gets them or derives them, that is part of numbers, part of the data that we use in our analysis and our ability to provide the best available science. The degree of uncertainty, from what Erik is saying, you know, that's tremendously high uncertainty or low – however it is characterized. So, to me it is part of the data so it is part of the science, and it's our responsibility to provide that advice, to identify the uncertainty there.

Ms. Jensen: But I guess what I'm saying is the data comes from not just observers but reported from the fishermen, from the logbooks; is that where our data comes from? Yes, we have reporting right now, and the thought is if we set these catch limits, that the reporting maybe is going to change, so our data collection is going to change; do you see what I mean? So, in the future less is going to be reported; not because less is caught, just because they're not wanting to report them so they can catching them.

Dr. Neer: But reporting rate has already changed. As soon as people learned and started figuring out that what they report down as their discards, they'll start reporting zeroes. We already know that happens. There is no indication that it is going to get even worse over time, but it is all part of the fact that we know that there is probably underreporting of the discards, so you know there is uncertainty around those estimates. So how you guys, as a body, choose to handle the fact that you know these numbers are probably uncertain to very uncertain; where do you put your buffer around them?

Ms. Jensen: So is that management uncertainty or biological uncertainty?

Dr. Neer: It is data uncertainty; it's uncertainty in the data and the data that is going into your decision of what that number is for ABC. Whether it is built into the assessment directly or it is coming to you now, it is still going into that number of how well – you know, the management techniques to get you the data, but we are also using catches and landings and logbooks in the assessments, too, which we know are not perfect.

Mr. Nelson: And another thing to keep in mind as you're going along for these stocks and others is to be very careful not to double-count your – I guess I said this yesterday – not to double-count your uncertainties. So, if you have accounted for the uncertainty in your data, in your model or in your assessment or whatever you're using to set that, then you don't want to be setting it using that again when setting your management uncertainty, because you have already incorporated it and hopefully you have incorporated it correctly – I mean that is an assumption – so you don't want to then be using again.

Dr. Crosson: I guess this getting back to Christine's question. It also comes down to what you think of the current management policies regarding discards. You're asking if it was a scientific question, but it really is a management decision that you have an opinion on. If you think it is not sufficiently protecting those stocks to have the current, whatever, one fish per vessel or no commercial sale; if you think that is inadequate then I can understand you would be in favor of doing something more restrictive.

If you think it is adequate, then just – you know, what we were talking earlier where we would set a number with the understanding that the council is just going to keep the current rule in place; and if the situation gets more severe, then they will put some sort of accountability measure to take care of that. I guess that is what it really looks like. I mean if you are really uncomfortable with the current rule, then move forward; I don't know.

Ms. Jensen: No, I didn't say I was uncomfortable with the current rule. It's just is the reporting rate of these discards going to change from what it is now? I mean if it is already changed, then it is already changed.

Dr. Neer: It may continue to change as you become more aware of things.

Dr. Belcher: But, yes, I guess that is the question on how you want to account for that uncertainty. Again, to me it is still like you're saying, it is data, it is biological uncertainty; it is a matter of how you're going to account for that removal of those organisms from it. In one instance, by saying zero we're saying we don't want you to take anything, knowing full well that there is a bycatch issue in that. We're not giving them a lot of room but there has got to be some sort of accountability for it.

Ms. Lange: Well, I think Christine asked whether this was a management issue or a science issue, and to me it is both. The managers are supposed to be looking at where there are shortfalls, where their uncertainty is. They set the ACL at a certain level, but they know that there is bycatch, so they have to have their – and this goes to what Mark was saying, that we don't want to count it twice. But when we're doing the assessments and we're using catch, not just landings but catch, it should be incorporated in there, so it is a science question and it is a management issue as well. It comes under both territories. I don't think we can ignore it.

Ms Jensen: Well, I definitely wasn't suggesting that we ignore it, for sure. I want to make sure it gets accounted. It is just what is the appropriate way to do that?

Dr. Neer: Well, that's why they're always getting hung on labeling everything in the assessment documentation. Do these numbers you're providing include bycatch already or not? If they do then the council doesn't adjust for bycatch when it makes its allocations. If bycatch wasn't explicitly added in the model then the council needs to add it on after the fact.

So that's a very point you said before when you said, well, double-counting is when we go through this we're going to need to make sure if we're in a case where we're having a zero and having to just tack a bycatch on; was it already put in some other fashion. I think we're talking about species that we don't really have an assessment so it hasn't been dealt with already.

Dr. Belcher: Like I said, my concern is just more from the fact that we've operated under the standard that we set forward the allowable catch. The bycatch has always been something that is deliberated afterwards; that has just been an adjustment that has been made at their level. But the way that this is currently being worked, we need to be able to account for that if it is part of it, because it is part of the biological removals, so we need to be able to account for that.

Again, that's how we got into that dilemma; well, if you set it at zero, this is the repercussion of zero. We can't go above that number, you know, as in terms of the council as saying that we can't go above zero, so how do we account for bycatch? Well, we don't have those numbers to account for bycatch.

So, that's why I'm saying at this point that is where Jack has provided them numbers before; we need to be seeing those numbers to determine if that's how we're going to account for it, to give them that number of ABC where they might actually bring it back to zero, but they can at least say zero but there is this allowance for the bycatch. Right now there is no allowance. They would be trying to write in for an allowance but under the current Magnuson we set zero, they can't ratchet above that.

Ms. Jensen: But we set zero with the allowance of bycatch?

Dr. Belcher: But what we're saying is that we're giving them a number of zero; they can't do anything above zero.

Ms. Jensen: Right, I understand what you're saying.

Dr. Belcher: Right, that's the problem.

Dr. Barbieri: At this point then we're not really giving any numbers, so we can explicitly mention there that what we mean by zero is the allowable catch or take, you know, ask for those figures for bycatch to be added to that, and that's the best that we can do at this point. I mean that's what we know and correct for. We can put there some kind of recommendation to the council and say there is a high level of uncertainty about those numbers. But, you know, the same thing happens any time a regulatory measure is taken.

I can see that we point ourselves in a corner in a way. I mean I understand the intent of this, but I don't know how to get out of it other than saying, okay, here is our intent, zero take, directed take; of course, this is going to have to be corrected for the unintentional take for the other source of mortality, and this has been corrected to the best of our ability based on the figures that we have, but we want to let you know – and we document that in our report – that this number is uncertain, and there is a high probability that there will be error around this estimate and that the take is going to be higher than what we're projecting here, and let's see how they react.

Dr. Belcher: I think that is all we really can do. I mean that is what I was saying, we need to caveat that. And understanding, again, as Erik stated and as Christine stated like with the issue of that changeover, it has to be brought to their attention that you're going to end up with a behavioral problem where you may think this number is realistic, but it may be twice that; it could be four times that.

So, again, building in methods like they have talked about with closing of the deepwater species or prohibition of deepwater species, that in and of itself would probably take a large portion of that out of it, but that is an outside suggestion that they would have to kind of come up with, but we're telling them that we're accounting for it to the best of ability, but down the road this

number is not going to become more accurate without changes in data collection. You're not going to be able to shrink your uncertainty; you're almost actually looking for an increase in uncertainty over time as folks stop reporting the numbers.

Mr. Chester: I agree, Carolyn. Kind of as a new member, I am assuming the SSC has the ability to comment on amendments and give their scientific advice on best alternatives, so that we could make comments on alternatives that reduce bycatch and we could probably also state very strongly our encouragement for attempting to get programs in place that will give us better estimates of bycatch.

Ms. Jensen: I guess I'm still somewhat confused on whether or not we're supposed to build in some sort of fudge factor for that reporting, that behavioral change you're talking about, where we set our limit.

Dr. Belcher: I don't think we can do that. We can't forecast what that response is going to be from the fishery. About the best we can do is at the time period that we're looking at, come up with our best estimate of what it looks like relative to the data at hand, and then just say, you know, we've given you this number, but we have a pretty strong prediction that you're going to find a behavioral response that this number is going to be drastically underestimated in the future.

You know, we may see that they're well below that level, but because it is self-reported, that is just a hazard of the way that data is collected. If you want to make sure that uncertainty gets closer and closed in more, that the only way to do that is to do supplemental data collection where you're dealing with some sort of validation through observers or some other methodology in which you can get – again, we're going in the opposite direction.

You're starting with a number with a degree of uncertainty, but knowing that there is going to be a behavioral change you're almost looking for an increase in uncertainty the next time we have to produce this estimate. It will be looking like it is lower, but it is going to be a higher degree of uncertainty.

Dr. Barbieri: For the lack of a better suggestion, this is also something that could be done in terms of a directed study, you know, a short-term, two- or three-year study that could be done just to come up with some kind of an estimate based on observer coverage. It would be less expensive and easier to implement than a broad-based increase in the observer coverage for the southeast, which we know probably we will not get anytime soon, but a directed study from the Science Center perhaps, Sea Grant, whatever, that would be trying to get some estimate that can guide the level of no reporting and provide a correctional factor for that level of no reporting.

Dr. Belcher: And a sidebar to that, we have been working with a Blue Crab Cooperative in Georgia. We actually have a state observer that goes out on commercial crab boats. Commercial crabbers are required to self-report their landings and turn them into the state. Believe it or not, we have actually been able to validate the reporting of what they're turning in, which they have to do mandated under the law relative to what the observer is actually seeing on the boat, because he is documenting all of their catch for every trap.

You would be surprised at the discrepancy even with what they report relative to what they observe. So you would think that their behavior would be better with an observer on board, it is not. I mean you do get a good measure of that. At least we have seen it.

Dr. Neer: That was my point is that we can't necessarily assume that the rate of reporting is going to get even worse than it already is now because it is already horrible in self-reporting. To try and build in a fudge factor assuming people are going to change and become worse then they are now, we don't have any evidence to indicate that. The observer stuff, the same thing with the shark stuff, they don't write down what they're catching if there is an observer on board or not. It already happens.

Dr. McGovern: So what I'm hearing is you're saying like the ACL is zero for speckled hind and warsaw, and then you come up with like a second bycatch ACL that you would expect to decrease with new management measures imposed through Amendment 17?

Dr. Belcher: No. Right now all we can give is total catch. What we have given in the past, that zero we gave was total allowable catch assuming that somewhere there was an adjustment. We have been told because of the way the new definition of ABC works, that we can't give you a zero. We have to account for the bycatch portion of that.

What we are saying is that rather than your numbers be given to the council and the council does their adjustment, it would come to us so that we could say this zero reflects your numbers. So if you told us it was 45,000 for speckled, we would now change from zero to 45,000. That ABC would be reflective of your estimate for that bycatch. We got a lot done. I don't have to badger anybody about black and red; they're taken care of.

We will pick up at nine o'clock tomorrow, and I guess we will continue on with our other species that we have kind of avoided. Well, we're on that balance point. We have got two species that are going to go through assessment, but if we have to put numbers forward we're looking at catch streams, so what are we going to do in that situation I think is where we are at. That's kind of where I think we're going.

Dr. Barbieri: And perhaps while we're fresh in the morning, we can go over the actual tier system and just make sure that we have all that documentation because I'm sure that it is going to be easy to forget why we made this or that decision and come up with where we can report this very well when asked.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Wednesday morning, March 4, 2009, and was called to order at 9:00 o'clock a.m. by Chairman Carolyn Belcher.

Dr. Belcher: Let's go ahead and get started. I just wanted to give you an update. I talked to Jack McGovern this morning, and they do have some numbers in Amendment 17 relative to discards as the bycatch mortality stuff. The only thing that he asked was that rather than he be the one that had done the analysis, that we put a request through the Science Center to get those numbers just so that it is more – not that it necessarily isn't valid but that it just had more

credibility.

But, anyway, for those of you who would like to see at least what the magnitude is of some of that bycatch in terms of numbers, it is in the back of Amendment 17, and there are three sources. There are the commercial discards, there are the B2s and then there is the headboat I think was the other one.

Dr. Williams: So what will be requested from the Center, just so I can take notes?

Dr. Belcher: As far as Jack has usually done that post quota bycatch mortality estimate, he has done that for the council. His only action is he asked that we as the SSC, if we want those numbers, that that is requested through the Science Center, for those numbers to be generated by the Science Center rather than coming from him.

Dr. Williams: And for which species?

Dr. Belcher: Well, the ones we were talking about yesterday were the speckled hind and warsaw. So, to continue on from where we left off yesterday, I guess we have two topics, if not more, left to talk about. One is those situations dealing with rebuilding and the other is those animals where we only have catch streams. What do folks want to do first? John is suggesting rebuilding. Okay, let's do rebuilding then since we have numbers, as John said.

Mr. Carmichael: Okay, since you want to do the rebuilding situation next, you've got black sea bass. Do you want to see how that panned out under the current plan and see if there are modifications required? It came out at a 35 percent level. What do we need to do?

Dr. Neer: Are we trying to figure out how to bump this up given the fact that it has been in rebuilding for a certain number of years since the assessment which we're basing these original numbers off of?

Mr. Carmichael: I don't know.

Dr. Williams: No, the issue here is the SSC is, in the NS1 Guidance, supposed to suggest a rebuilding target; and when a fish goes into rebuilding mode, then ABCs don't really mean anything anymore because it is the rebuilding schedule that then dictates the catches. Then the question is how do we adjust our rebuilding targets to account for scientific uncertainty?

Right now what we have been doing is we do a stochastic projection and we assume a 50 percent probability of success. A simple solution would be – and it would match what we're doing here – is take this P-star and take one minus that, and that is the probability of success that we would choose for our rebuilding trajectory.

Mr. Carmichael: So it would be 65 percent probability of success?

Dr. Williams: Right.

Mr. Carmichael: As opposed to now you choose 50 percent.

Dr. Williams: Fifty percent, right.

Mr. Nelson: I believe so, and it depends on how data rich this stock happens to be. If you can get into some elegant models, you can look forward and have – you know, project forward and calculate at Tmin, Tmax and Ttarget and set a probability of success to reach those and look at catches that must occur – or must not be exceeded in order to reach that target. So you sort of back-calculate from there. So if you have enough data to do that, you can use that 65 percent chance in this case of achieving your goal.

Mr. Carmichael: Is snowy grouper on a rebuilding plan or just a –

Dr. Williams: No, it is and so is red porgy.

Mr. Carmichael: Is goliath considered on a rebuilding plan?

Dr. Barbieri: Well, yes.

Mr. Carmichael: Technically, right?

Dr. Barbieri: Technically, yes.

Mr. Carmichael: Okay, I think those are the ones.

Mr. Nelson: I just am curious; goliath grouper, you said the status is unknown, but it is in a rebuilding plan; is that correct?

Mr. Carmichael: Yes, it is one of those where it had an assessment of some type earlier on; and we tried to do a more recent assessment to check its progress, essentially, and the status came out unknown due to certainty in how well the current regulations have acted. So putting this into practice, this means, say, goliath grouper, if you went through and we got an updated, approved assessment and still is requiring rebuilding, you would set your rebuilding target and select your rebuilding schedule based on the series of landings that gives you an 87 percent chance of getting there within the chosen rebuilding time.

Then we kick down to something like red porgy or snowy grouper and we can say one with a 67 percent chance, so it would a slightly more restrictive rebuilding schedule than probably what is in place now. Red snapper would go with the more restrictive rebuilding than we would with a baseline of 50 percent.

Mr. Nelson: This is more of a technical question for Erik. Now, the P-star for the ABC value, the value we have up there is a probability of preventing overfishing in any one particular year. Now the rebuilding probability success is the probability that – according to this is the probability that overfishing will not occur, you know, your successful management, you're keeping it below in any one particular year.

But when you add those years up together and searching for that Ttarget, that is actually a different number. It is not necessarily equal. Would you agree with that assessment? I don't want to be comparing apples to oranges.

Dr. Williams: I don't think those two are related, really, other than just in the probabilistic sense. In other words, in rebuilding you're worried about the probability of success; and calculating ABC you're worried about the probability of overfishing. They're not necessarily related. In rebuilding you presume that you're going to be below the overfishing, anyways. In order to rebuild you have to be by definition.

You did bring up another point; that P-star, we didn't clarify whether that P-star is calculated on whether it includes the time component or not. For a given year you can compute landings that has the probability of 25 percent overfishing; but if you do that in a projection setting – let's say we're setting five years of ABCs and you want the cumulative probability in all five years you're not going to exceed overfishing by 25 – or 25 percent probability of not exceeding it, that's a different sort of definition of P-star. It does result in a different landings' stream.

Mr. Nelson: Yes, I agree, and so when you're calculating rebuilding times and you're creating a rebuilding plan, when your Tmax, Tmin and Ttarget, you're not necessarily going to be – you know, your Ttarget isn't going to necessarily be at – in the case of goliath grouper or whatever, you know, setting your Ttarget at 87-1/2 percent – I believe that is what the number was – but you would approach that as what is the acceptable amount of risk of reaching that target, let's say 25 percent, and then you can back-calculate – depending on how much information you have and how good the assessment data is and the model is, then you would go back and you would calculate the landings' levels that you would need over that time in order to achieve that probability. I just wanted to make sure that was clear; that isn't necessarily going to be the probability of achieving a rebuilt population by a certain time in the future.

Dr. Williams: We are stating that that is what that probability is. That is what we're saying that probability or rebuilding – that's exactly what we're defining; that is defining that there is a 65 percent probability that you will achieve the target by the target date.

Mr. Nelson: Do you think that is correct in this case or do you think that should be changed?

Dr. Williams: I'm not following you now.

Mr. Nelson: Well, I mean if that is the case; do you think it is an appropriate metric for this or do you think we should calculate it in some other way such as for all stocks to need to have a certain percentage of – in a rebuilding plan they need to have a certain probability of success in the long term and not in any particular year leading up?

Dr. Williams: I think so because the way we have been computing it now is a 50 percent probability. That is the way we determine the rebuilding trajectory, because almost all rebuilding analyses are done in a stochastic format, so it is a probabilistic analysis. What we have done up to this point is always assumed 50 percent.

And if I'm interpreting this whole Reauthorized Magnuson Act, we now need to adjust for scientific uncertainty, and the obvious way to do that is adjust that probability away from 50 percent to something more precautious, and that amount of precaution should be based just like we went through this whole analysis for the P-star. The exact same criteria, we would probably come up with the same percentage, so that's why I say simplistically just one minus the P-star makes sense.

Mr. Chester: I am not sure it makes sense to me, Erik. I would like to hear a discussion of the underlying rationale or philosophy of why we're hooking the probability of success to uncertainty. It is a little troubling to me that a species, for example, that we know very well and we have a lot of confidence in – let's say yellowtail snapper – that we would accept a lower percentage probability of ending overfishing than we would for a species that we have less certainty about. It's sort of like we're establishing that 50 percent probability of ending overfishing as the gold standard almost.

Dr. Williams: Again, I'm having trouble following everybody's train of thought on this. I'm not understanding what the issue is. In other words, right now we assume a 50 percent probability of success in our rebuilding trajectories. If we're gong to add precaution because of uncertainty due to other factors, which we have gone through in this whole P-star analysis, then we would want to go to a probability of success for rebuilding that's higher than 50 percent. Is it the directionality that you're concerned with?

Mr. Chester: No, it is not directionality. I understand that, but it seems counterintuitive – or not counterintuitive but maybe beside the point that because we know a species very well, we would accept that existing standard of 50 percent. Why wouldn't we want to have a higher standard for ending overfishing, just as a baseline?

Mr. Carmichael: Part of that is because you're saying you're willing to accept more risk and to push that stock closer to the line because you do know more about it. And we're saying the stock that we know the least about, goliath grouper, we're not willing to accept a lot of risk. Because it is so uncertain, the information is so uncertain, one thing we can increase is our probability of success. We increase that to offset all the uncertainties we don't know.

Yellowtail we know a lot about, if we think we have characterized the uncertainty well, we can push it closer to that 50/50, middle-of-the-road central bias approach. This is just a set of projections from red snapper from one of the various versions that have been produced. It has no bearing on where red snapper may go when we get new projections in a couple of weeks. It is just an example, now that the caveat is appropriately stated.

The rebuilding SSB is 5184. This is the Frebuild projections. It gets there in the year 2040. The 50 percent chance then that fishing at 0.109 from 2009 through 2040 and given the presumptions about recruitment and steepness that you will rebuild this stock. So under this scenario red snapper came up with like, say, what, 67 percent.

So these would be redone; and instead of getting what F gets you to this in 2040, because that is the rebuilding time period that has been determined, so that is fixed – instead of the F that gets

you there and the landings that gets you there at 50 percent probability, all of this will be bumped up and it will be what gets you there with a 67 percent probability that you reach 5184 by 2040.

The F will go down and the landings will go down for every year in this rebuilding schedule so that you get back to that 5184 but with a greater probability. It seems like the other way of looking at this would be to take an individual year's landings – maybe instead of the probability – instead of the landings equating to 50 percent at an F of 0.109 you look at landings equating to 67 percent at an F of 0.109. It's similar things; different ways of getting there.

This fixed on the rebuilding schedule is maybe the little bit easier way to get it and then to come to the entire time series of the situation, which seems to be one of the things we have been concerned about, about that uncertainty that grows.

Dr. Williams: I think by focusing on the probability of success, too, you open the door for other analyses like adding uncertainty in other factors that we're not doing now, essentially, because really all you're after is that probability of success. How you model it, what stochastic processes you put in there is up to you; whereas if you were to do the method you were talking about, then depending on what stochastic processes you put in there, that calculation might get a little tricky.

Ms. Coakley: Just in line with what John was saying; I mean, for things like summer flounder and some of the species that the council uses, we do our projections up to a median, whatever F rate will achieve that median projection rate, and then we start in a given year at that 50 percent likelihood that a given TAL will achieve that F rate, and then our council – you know, it is sort of the opposite of what is proposed here.

We back off from that each year and then maybe pick a TAL that has a 75 percent probability of achieving that target F, which in effect does the same thing that you're doing by adjusting your probability of successfully hitting the target, because then once you lower that TAL and they will have that higher likelihood of an F in that first year; you're actually bumping that trajectory up, anyway.

So it is just a different way of approaching it, but I think it is interesting to tackle it that way because you're basically up front accepting level of probability of success you'd like to accept rather than dealing with it on a year-by-year basis, because, you know, the council makes a decision in one year and may go with, say, the 50 percent; just stay with that, and the next year they may say, oh, we're going to go with 75 percent this year, and it is sort of a series of individual decisions that are adjusting that trajectory as opposed to one up front.

Mr. Carmichael: It gives you a nice, fixed rebuilding schedule to work with, which we have now, and a relatively easy way of determining how that should be modified over time. You have been thinking about this? I'm warming up to it. I think it is a pretty elegant solution to this whole rebuilding situation.

Ms. Coakley: Just a quick question for Erik; do all the rebuilding plans have stochastic projections; do you have any rebuilding programs that you're just projecting forward, you know, like an index value or something that you don't have the distributions about them? I know for

some of ours we have done that for the ones that we haven't been able to get into an analytical model.

Dr. Williams: At this point, no, we haven't gotten to that because we have been dealing with most of our data-rich species, but that is in a relative sense. We always have stochastic projections because usually you can always at least come up with some way to stochastically project recruitment at least. Even if you assume a standard deviation on recruitment because that is a common thing to do anyways, I can't envision a situation where you would have projections with some sort of stochastic incorporated in.

Dr. Belcher: Further comment and discussion relative to the rebuild?

Mr. Carmichael: That was easy. I don't see anything in there that makes it not make sense given the stocks that we know. It gives you a whole bunch of new projections now. But if you do this in advance, go through that exercise, then maybe in our process – typically the base projections come out of the SEDAR process – the SSC gets it when they get the assessment and there is the expectation that then you'll refine those based on what it is you kind of choose to do and what sort of management things you might want to have evaluated, unless you want to change some of the going-forward projection assumptions. So the SSC could go through that exercise, come up with that critical P-value, and then they could go back and do the projections with the adjusted chance of success. It would be pretty straightforward. Next.

Dr. Belcher: I guess next is the all-dread, all-avoided what to do with just the catch stream. Luiz has something to say.

Dr. Barbieri: Well, I'm usually not that well organized, but just to make sure, because I think that this is another concept, Erik, is going to be difficult to explain, right, and I completely agree with you that all of this is going to be difficult to explain to some people, and I just want to make sure that we have good documentation of all of our decisions here, you know, just make sure that – because later on when it is time to write that report, we're just like scrambling to find out.

Dr. Belcher: Okay, again, now we have got to go to the situation where we're dealing with just catch data. We could punt and just do as the North Pacific does, 25 percent. They set the precedent. I mean, obviously, our 5 and 10 percent we were told we were being too conservative. Again, if our number of where we picked the 5 and 10 was leaving them with an issue, there is a precedent set for 25. Now I'm just that putting out to kind of kick around the table, but I mean that is almost the easiest bandaid on it right now.

Dr. Barbieri: Well, in a way I think the problems that we had before were more relative to our ability to explain the rationale that we felt this committee was comfortable with and could be well justified than the actual values themselves. I think we could explain why we made this or that decision, I think folks would feel a little more comfortable with them.

Dr. Williams: The only concern with a flat percentage rate is then we lose this whole concept of going through all this process of rating the stocks, and maybe we should have a range from 25 to something; I don't know.

Dr. Belcher: Well, I was just thinking in that same vein, what if we did actually try to walk – I mean we have this theoretical PSA that could be applied to any species, correct, so that kind of gives us one particular weighting. If we look at the other categories that are up there, they're going to be on the high end of that. So in essence you can technically apply a discount from this same table to them. It is just a matter of how you're going to apply it to the landings. The fact it is that simple kind of scares me again, too.

Dr. Williams: Well, I think the key is to keep it simple. Certainly, my first thought, when thinking about this, was, oh, we need to simulate the hell out of every type of steepness, parameterization and look at life history characteristics and assume error distributions on F and then look at the yield curves and what the reduction is based – and then I realized wait a second this is way overboard. We need to keep this very simple.

Dr. Belcher: So is it possible to actually walk through for something like red or black right now, through that table to see what we get for a reduction and see what – I mean, obviously, to me the main question would be what lengths of time would we be trying to set it to; what would be the catch time series that that it would apply to; average catch over the entire fishery, five years, I mean –

Dr. Williams: Well, I think when you're presented with just the catch time series, the first step is you have to figure out what are you going to use as your proxy for msy essentially, and that is not always just going to be an average of the entire time series. With some careful thought, you can maybe pick out a part of the time series where you think the stock was near msy and then use the average from those years.

So then we at least get a proxy landing for msy, and then it is just a matter of some percent reduction from that, and that percent reduction would come out of this hopefully PSA analysis or whatever we do.

Dr. Belcher: And the nice part I think about that idea, too, is the fact that, again, it is not, like you're saying, a raw applied – you know, a standardized applied rate across everything. You would actually be able to look at each individual catch stream to determine where that is. Instead of saying from 78 to 95 and then having to justify why you picked that, we would have a more rudimentary quantitative approach that would let us say, well, this is the range that we feel best represents an msy situation, and that would change from fish to fish. Is it that simple or am I oversimplifying it?

Dr. Barbieri: Well, I'm just thinking about all of this and I agree we should keep it simple. At the same time it would get complicated a little bit in terms of – your know, for a species that you're going to have multiple gears, multiple fisheries, I mean this would involve a number of choices. I just wonder if we can do sort this, quote-unquote, you know, simply –

Mr. Carmichael: Yes, we can, sure.

Dr. Barbieri: Okay, John is saying yes we can.

Mr. Carmichael: Up here are the stocks that are in the trends report, so theoretically we have landing for those. We have a little information on mean weight, mean size, and in some cases we have got some rudimentary, perhaps we could call them VPA estimates. We could go through these stocks and try to apply our framework and see where we get, and it will identify the pitfalls, I think.

Ms. Coakley: In the MRAG LENFEST document, in one of their appendices they have – is it McCall's DC/AC approaches that are in there. When we I was up at the Science Center, we had a data-poor workshop, and they were applying to some of the state information; I mean, really data-limited situations where they were able to input the catch series and go through and identify, you know, where you think "K" might be, where you think your Bmsy time period might be in that series and have it output what your sustainable yield might be over that time series. For some of these, is there enough information to do something like that? Is that something you guys have thought about? I was just curious.

Dr. Belcher: The short answer is I think, no, we have not thought about that yet.

Mr. Carmichael: This is an example of what is in the trends report. This is white grunt. You get landings by sector, sector being tied to datasets, really, commercial, headboat, charterboat; other recreational – I presume that is MRFSS but I can't recall exactly. I would expect that is probably the MRFSS landings, plus the charterboat because you know how that region is – and it gives you the landings, the mean weight, the number of fish landed.

The headboat has the most thorough data. It provided CPUE in numbers and weight for both North Carolina and South Carolina and then Southeast Florida and the Keys. The charterboat has landings, mean weight in numbers, recreational landings, mean weight in numbers. I guess every fishery has the mean weight characterization.

As you can see, we have commercial landings starting in '91. The headboat is the longest time series, of course, it goes back to '72. Then we have the other recreational and the charterboat kicking in in the early eighties. I'm not sure why the other recreational doesn't start in '81. Maybe that is '81; it is kind of hard to tell – 82; maybe they just didn't see any in '81, but early eighties you get those other data series kicking in. So here is one like white grunt, I wonder how we go about interpreting the landings trend.

If we were to pick, say, the early seventies, mid-seventies is saying a time when you were at msy, we would probably have to do some headboat to other fishery scaling to get complete landings or look at the CPUE trends or something. We have looked at those in the past and get a lot of heartburn about dealing with these straight-up nominal CPUEs. At least this is within one fishery and it might be fairly straightforward. If we can get a landings' time and then we can get a probability susceptibility value, we might be able to move ahead.

Dr. Barbieri: John, I don't disagree but this raises some of the points I was thinking about of us looking at nominal landings and us not having really these indices developed or properly scaled in a way that we can actually look at this. Sure, we don't have a stock assessment; sure, we

don't have anymore analysis, but I think that in this situation we might need to do a little more cleaning up and standardization of the data.

I am not saying it is going to be difficult task. I am just saying if this is standard for most of the SEDAR processes we go through, I just wonder if this is something that we can do right here on the fly without having a little more support. Again, just to follow up, this is to generate discussion on whether we choose this approach or how we intend to proceed.

Ms. Jensen: What is the feasibility in the future of getting some of these indices standardized? Perhaps we could just kind of come up with a methodology right now; and if we can get more standardized CPUEs in the future, then adjust for that.

Mr. Carmichael: I don't know what the feasibility is. It requires a request to the Science Center and fit in with the workload there. I think we would have to make sure we thought it was really what we wanted before going there unless someone else around the committee wanted to volunteer to, you know, members of the committee take ten species and do them.

You know, 70-some species to do, everybody on the committee does five species, then we're done in a week. If it all goes into the Science Center and they have got to do 70 species, then it is going to take one person six months. It is hard to say. We definitely would have to know exactly what wants to be done and what you expect to see done, how you want it standardized, what you want considered, what data series to include.

When we talked about doing the workshop when we get to basic landings, this would be sort of the pre-processing that gets you to that workshop; the first workshop being you get together and do the work, maybe; the second workshop being you get together with the fishermen and representatives and interpret and try to get an understanding of the trends and the landings and the CPUE; the third workshop being you get back together to make recommendations. That is what we talked about.

Dr. Barbieri: Again, I'm not trying to overcomplicate this. The idea is to generate discussion and see what we may or may not be comfortable with. I just feel that my expectation is that we would have some way to see the basic landings' data and all the indices developed the same way it is done before we get into a SEDAR Assessment Process. No, we're not going to crank an extra SEDAR assessment. We're not going to run stock assessment, but at least we have got to see the data properly treated so we can actually identify real trends and not just be dealing with nominal landings and effort.

Mr. Carmichael: I just have no idea of how much time it takes to, say, take white grunt and run it through the index-development process to get an index that is reasonably satisfactory to people. Erik, do you have any sense of how much time that these guys are putting into doing that work? I sense it is not trivial.

Dr. Williams: It's not usually, but then again it depends on how many simplifying assumptions you're willing to live with. You can trim it down to the point where it could be a turn of the crank.

Mr. Carmichael: And is it something if the SSC were willing, you could get together in a weeklong workshop, Erik share the tool around people, and six people sit around the table and everybody run ten species. You know, if you've got more people working on it, you're going to get through twice as much. I think the problem would be if we want this for all of these species that only have landings and effort, one person doing it, you know Kyle or Rob or somebody doing it, it is going to be a Herculean task for them.

It's probably going to take six to nine months would just be my first thought based on all the other stuff we have going on. Every species is going to have something; we all know that, for fish data. Every species is going to have something, but with eight people digging into it, maybe you get through it in a week. If the SSC is willing to do something like that, that is a pretty divergence from how SSCs have typically functioned in the past, to come in and do something like that, but we're in a unique situation and maybe that's not such a bad thing.

Dr. Williams: Again, I don't think, though, that the SSC should be doing that kind of work. I mean we need to be careful about generating our own science here.

Dr. Barbieri: And, again, John, I'm not trying to overcomplicate things, and maybe we just want to go for the simpler approach and we come up with some reduction there from average landings that we feel comfortable with and say, okay, this is what we're going to use and develop our justifications and we are done. I'm just thinking about all the possible alternatives here that we might want to consider to make sure that the committee is comfortable with it and we can stand behind it and say this is what we did, and we're through.

Mr. Carmichael: Well, let's focus on this one stock with white grunt. This is a pretty good summary of what you have available. This is the landings. How would you go about taking what you have before you and pick its time period over which you would average landings for this species alone?

And, if you're not comfortable with doing that with what is before you, let's get an idea of what is required to reach that level of comfort so then we start working on a list of what kind of extra information. I think white grunt is a stock that is fairly common in all the fisheries. It has really not directed regulations toward it, so there is probably a good expectation that these landings may indicate abundance.

I don't they have been significantly impacted by at least white grunt specific regulations; maybe general things in the fishery that would affect where people go. You know, the headboat, though – this is kind of a nearshore fish, so it might not have been overly affected by regulations that limited how far out the fishery was operating; like we have been concerned with some of the more deepwater fish – is the patterns in the headboat fishery have changed over time and they took more shorter trips; would that affect a fish like this less than it would something like a red snapper or a grouper? Perhaps.

So given this for white grunt; can the group say, yes, I can pick those years, use the full time series, use some fraction thereof, recognizing that you're going to have these blanks for every

stock we deal with. You can see right off looking at the headboat fishery, mean weights dropped.

The CPUE is really high the first couple of years and then kind of drops, but after coming off that peak it kind of goes up and down over some of these years, you know; 1.4, 1.8 and here I dropped to about, what, 0.4; now I'm coming back to 1; 0.93; I dropped to 0.5 and went to 0.7 and I am back to 1; hitting 0.73 there in the end, 0.83, 0.77.

The last year data, the last two years are 0.93 and 0.92. That's probably in the upper 75 percent of observed CPUEs. That is pretty fortuitous. The mean weight, though, is significantly lower – well, they're not that significant, I don't know, but it was 0.9, 0.9, 0.8, 0.7; it drops pretty regularly and never really goes up, does it? One year there, that could very well be a sample size thing, but in general the trend in mean weight seems to be downward. What do we make of that? Does that gives us some concern about where the overall abundance is heading?

Ms. Jensen: Is this available in excel at all? I have an easier time looking at actual lines, graphs, tables.

Mr. Carmichael: No, I agree with you a hundred percent; no, it's not. I mean theoretically Jennifer or Ken probably have it. It's from 2003; that's six years ago, and hopefully somebody still has a file, but we don't have it in excel format. It is an old PDF; it is a scan so we can't go in and take numbers out of this either.

Dr. Reichert: Do we have more recent data?

Mr. Carmichael: No, this is the last trends report. Do you think more recent data would affect your interpretation?

Ms. Jensen: It would give you a better idea of what is going on now.

Mr. Carmichael: Is six more years of data relevant to a 30-year time series and trying to pick a period when the stock operated at msy, knowing that the regulatory burden is much greater now than it was in those earlier years? Let's pretend it is 2003.

Dr. Crosson: Well, I would like to know if the mean weight has continued to drop or if it is stabilized. Forgive my ignorance, what is the maximum life period for this grunt? I mean how long do they live?

Mr. Carmichael: Say eight, ten –

Dr. Crosson: Eight to ten years, okay.

Mr. Carmichael: I don't know much about them, but being a grunt. I kind of think worrying too much about what is gone on in the last years is focusing on the trees and not thinking about when did msy occur in this fishery and what period of landings would you use to be the starting point for this scaler. We have got '72 to 2003; we've got 30 years of landings. If we can't pick

anything out of 30 years of landings, knowing how the fishery developed over the last 30 years, then six more years I don't think are going to solve the problem.

Dr. Williams: Well, that is the question you have got to ask yourself first is do you think that within in this time series msy is somewhere in there; did this population pass through msy. Maybe it has been overexploited since Day One, but probably not.

Mr. Carmichael: I am sort of more concerned about the earlier years than the later years because I think most likely most all of these snapper grouper fish are probably beyond msy. We have probably already passed through it given the fishery development. At least sometime by 2000 we were there.

We know now with declining effort and a lot of the headboat effort, for example, pulling out, but that is being offset by increased recreational effort in recent years, so I think our trend is that a lot of these fisheries were overexploited in the sixties and seventies, if not sooner. So, maybe it is the earlier years that we are more worried about.

Dr. Williams: Going back to what I said earlier about us doing original work, again, I don't know if we should even be taking this step. I mean if there are species that we want an msy estimate from, we need to put it to the Center we need msy estimates for X, Y, Z, and just put it to them.

Dr. Reichert: Especially in species where we do have sufficient information because there will also be species where we probably won't even be able to do that. White grunt I think is an example of a species where potentially we have enough data to actually do that.

Mr. Carmichael: And I think that is the kind of maybe discussion that we need to have here because a lot meetings we have looked at landings' data and we have thought about it and we have not made it any progress on it. If the bottom line is the committee is going to say we're not going to pick the year of stability from landings and average it – you know, I think we saw at the national meeting some places they're doing that; you know, they're just picking 30 years of average landings and that is what they're using.

We can see that from the tier system of the North Pacific; they're doing that. If we're not comfortable doing that here, then, yes, like Erik said, it just needs to be you know what, we're doing it for the stocks that have been assessed and the others put it to the Center and say analyze this and give us the period of landings when – give us msy, give us the period of landings when msy was being taken and move from there. Then we can put this to bed once and for all and not have to keep trying it.

Dr. Neer: John, has there been any move on the council's side to remove some of these species, these 73 species in the snapper grouper complex? I'm trying to think if we're going to put a request to the Center, do we need to request 50 species or should the group request 15 species as the ones we want to focus on initially.

Mr. Carmichael: Well, there is the possibility of ecosystem species, but then in this multi-species fishery they get kind of tied up. You know, earlier on there was a discussion about things like tomtate, which you might first glance look at and say that could come out of the management unit, but it is so tied with other species, maybe not.

There are a number of species that are fairly uncommon in the landings. There is a good number of species that don't even show up in the landings every year. At first glance you might want to throw those out, but then when you consider the ecosystem situation and that they get encountered by the fisheries that are operating, you might not. So I think we have to look at it as these are the species we have.

Dr. Williams: Well, actually there is probably a species we should add and that is spottail pinfish. It is a major component to the headboat fishery off the Carolinas now and it is not in any fishery management unit.

Mr. Carmichael: I think MARMAP is often talking about the blackbelly rosefish. You guys have done some work on that, right?

Dr. Reichert: Right.

Mr. Carmichael: The hole gets deeper.

Mr. Chester: It seems to me that when we did this discussion for the first 12 or 15 species, we started with the science and then we developed a methodology for how to reduce it. I think we could adopt – at least to make progress today we can do the same thing. We can make the assumption that we will get some science in terms of msy estimates and what would we do with those numbers when we have them in terms of developing a mechanism. That may be a way to make progress today.

Dr. Williams: I would hope that if there is a big list of species for which we need just some basic information from, that the Center could look at its priorities and realize, all right, do we really need a full-blown benchmark assessment for species X and Y or can we cover 20 species with simple surplus production modeling and just throw it at all 20 of them and we get a heck of a lot more information, more bang for the buck as far as what the SSC needs in that scenario.

Mr. Chester: And along those lines, just to point out, when we first started with SEDAR – and I think John can verify this – we said all along that not every species would necessarily merit, warrant or have space and resources to do a full-blown SEDAR and that some assessments would be done probably outside of the SEDAR process, and it may be for some of these species these are good examples, and that would reinforce what Erik is saying.

Mr. Carmichael: Well, let's talk for a minute because that is the one thing that comes to mind when you look at this particular dataset and think about here is, what, ten species in here, and every species that is in the headboat set we have a potential index, So one of the concerns, when we get into these less sophisticated models has been saying, well, you know – and it is a question I tend to throw back when I wear my SEDAR hat to the councils is what will you accept –

because, you know, SEDAR has got to do more and we have to have these things come out for everything, it is like, okay, will you accept the lesser model, so maybe that starts here.

I think if the SSC could make a statement that says we will accept a production model for these remaining stocks as a way to get started and deal with the Comprehensive Amendment and the ACL situation, we will accept a production model for giving us msy or we will at least consider it and not reject it out of hand.

And, you know, there may be some where you decide there is no contrast and there is not enough data and it is completely uninformative, you still have that right, but would you consider and be interested in having a production model run for 50 stocks? And if you feel that way, then I think that could open the door us through SEDAR and with the Science Center finding a way to make this happen perhaps in lieu of another benchmark of something like black sea bass, which has already been benchmarked and updated.

DR. Barbieri: I would feel much more comfortable with that; even knowing the limitations of production models, much more comfortable with that than us having to go just through the landings and coming up with something that later on can be picked apart and be deemed not to be scientific. It is just much more defensible. I think it is a logical approach to be taken; the steps to be moving us forward when we have the data limitations, but much more meaningful for us to adopt as a scientific body than just looking at landing streams.

Ms. Jensen: I agree with Luiz. How much time is that going to take to be able to do something like that, because then you might want to create – you standardize your indices of abundance to use in a surplus production model. Is that something that we have that we can do within our timeframe and we're still meeting the goals of 2010 and 2011?

Dr. Williams: I have devoted probably too many brain hours thinking about this whole problem partly because I have always been asked to think about this, too. I think that you take this system and you say, all right, we have 30-40 species we want to triage. It is a triage is what we're looking at. We want to get the most that we can out of them in the shortest amount of time.

And you say, okay, we're going to pump 40 species through a SEDAR cycle and you say we're going to get something – you guys need to decide – and that will just be the terms of reference of the SEDAR – what can be done in the time that you have, with the man-hours you have. This is a triage situation. You just do what you can in the time that is given.

You will have to make assumptions here and there. You will have to live with certain quick assumptions or quick GLM models that will be applied to the CPUE data just to come up with a quick CPUE estimate and just live with it and run what you can. That's what you accept, then, because you realize you're in a triage mode and you just say this is what we will do, the best we can with X amount of time.

Mr. Carmichael: I pulled up here the SEDAR schedule, and we will take a realistic eye here of what our South Atlantic Team, as it is, have to do and say 2010 and 2011 with an eye towards saying by mid-2011, by June 2011 and by the September council meeting in 2011 have this done,

and that gives them a chance to potentially get something in place. So what we have going on in 2010 and 2011 – because 29 is underway and it's not going to change.

That's the black grouper and red grouper; well, we need those. Those are overfished and overfishing species, we need those done. Now looking ahead we have menhaden and croaker review; that is ASMFC related and that will tap into one of our Beaufort people a little bit, but they have the ability to kind of play hardball there and say, you know, I don't have time to play this game with you a whole lot on croaker and stuff and hopefully get out of that. It is a big commitment.

We have the Gulf, yellowedge grouper and tilefish. We have some Caribbean stuff. And in 2010, so you say, oh, well, 2010 looks pretty easy, but now let's look down here at the updates and realize that this block right here is the updates in 2010. We have Florida spiny lobster, Gulf, amberjack; South Atlantic, tilefish and snowy grouper; and in 2011, Atlantic gag. So I think the SSC should comment, right, what is more important to you, knowing something about those other 50 fish or having an update of tilefish and snowy grouper?

Dr. Williams: And be aware that the Center actually has a memo right now asking that we put black sea bass, red porgy and gag as updates in 2010 on top of snowy grouper and tilefish, so five updates in 2010 is the current discussion.

Mr. Carmichael: And I wonder what is the better bang for the buck, getting information for all of these stocks to do ACLs by 2011 or getting an update for something like snowy grouper. How much would it matter to get a snowy grouper update in another three years from now? You know, I understand that part of this situation is that the council has tied the rebuilding plans to fixed harvest until they get an update and then get to change it, but that was their choice.

We do have a rebuilding schedule. That was a choice. We're faced with having to deal with all of those stocks with no information. The SSC, if you feel like this is an important thing, then you can make a clear recommendation and maybe it will carry some weight to say, you know, these are really – this is a critical problem; and perhaps by not being willing to grab those landings and just pick a period of time for msy, presume that the stock was fine, and use that to scale from, saying, you know, we can't do anything until we at least get that. We want this production model approach; or you can come up with something even better, that will be great, but at least this production model approach before we're going to move forward on these remaining species, then maybe that will carry enough weight to change this.

Dr. Barbieri: I think that is a great point. SEDAR, by the way, is a council process, so here we are making a recommendation but also inviting the councils to weigh in and helping us determine the priorities. And if they change the priorities to address whatever is needed to be addressed for Amendment 17, well, then, great. If not, you know, they can't expect us to come up with something that we cannot just produce out of thin air. So, by putting the SEDAR schedule into the mix here, we give them the opportunity to weigh in on how much do they actually want to prioritize this analysis for the species for Amendment 17.

Mr. Carmichael: SEDAR has always been a council process, and one of the big things about creating it in the beginning was to give the councils an opportunity to have some say over what gets done and to make sure that all the councils in the region understood the obligations of the Science Center to the other councils. So they realized there were tradeoffs in what they asked for, and I think the council could go to the steering committee, which is where this stuff is supposed to be done, and ask for this change.

A strong statement from the SSC could sway the council here this week to say, "You know, if we want this SSC to give us those numbers and we're required by law to have those numbers, these guys might have a good point here about all these unknowns that we must deal with."

Dr. Reichert: Would it be helpful to ask the council to weigh in?

Mr. Carmichael: To weight in –

Dr. Reichert: To ask how they see the priorities in terms of –

Mr. Carmichael: I will point you to the last meeting when we realized we had an open slot, and the council weighed in and they the picked the benchmark of black sea bass and the benchmark of cobia. I would say that is how they weighed in, and I think it would be much better for you guys to strike first and be very clear and explicit on what you think the top priorities are and even to address these other things that are on the schedule and say, you know, you recognize what is being asked for, you're not turning a blind eye to that, but you're stating this is a much higher priority. Don't ask them to weigh in because I think they're looking to you for this type of advice in a sense.

Dr. Williams: Yes, I don't think we want them to weigh in. We just need to say, "Look, you're asking us to fill in the ABCs for Amendment 17 and the next one. Given all the species that are in those, here is what we need, here is where we have information and here is where we don't," and most of it is we don't have anything and we can't generate it unless it come from the Science Center, essentially, or from somebody else. We just lay it at their feet and say, "If you really want to fill in all these boxes, we need this information."

Mr. Carmichael: I think if you're somewhat specific and you say, you know, we believe the headboat index has been used many times. It is worthy of consideration as part of the foundation of a production model; and that going through the process and doing that for the remaining species in the management unit that have to have ACLs and ABCs and all that by 2011, applying that and coming up with, as Erik said, the term of reference, do something to provide an msy with some quantitative foundation; recognizing that it is not all going to be statistical catch-at-age foundation, do something to give us something for every one of these stocks by mid-2011, you know, before the June 2011 meeting of the SSC or whenever that will occur, depending on how we change meetings, but essentially by mid-2011 so the council could have something submitted by the end of 2011.

Dr. Barbieri: And, Marcel, just to clarify, in terms of the council weighing in is that we would make a recommendation as an SSC, you know, to the council. We know that the SEDAR

Steering Committee and the councils are the ultimate decision-makers on how that schedule is determined. So, basically, if they accept our recommendations on moving forward this request, then they're weighing in in that way.

Dr. Reichert: Yes, that wasn't my point. My point was in terms of our priorities, if we can get a feel – and John pretty much answered that question – if we can get a feel for where the council thinks this process is going, then we can say if that is the case, then this is our decision because we cannot do this or we cannot do that based on their priority.

That is all I'm saying in terms of, okay, if we cannot do the surplus production model for a number of species, then we may have to make a different decision no matter what our recommendations are going to be. I understand maybe we should just go and say these are our recommendations and we cannot make the decisions that you're asking us to make unless this happens.

Mr. Carmichael: And then it comes back to the Science Center and the workload managers to decide can you accomplish this and get these other updates that are being asked for? That is a decision that is going to have to be made, which they're going have to do internally, but this stuff should be prioritized and you could prioritize and say the first order of business is getting something for all these stocks that we have no analysis done.

The second order of business is updates for these species and this list of priorities. Is black sea bass a bigger priority to update than snowy grouper and then golden tilefish? And that may very well be something where the SSC can say we think that is secondary to all these unknowns, but we don't have a strong opinion as to which of these fish should be updated first, which would be the top priority on this list; or, maybe you do; I don't know.

Ms. Jensen: How much of a time commitment is it? I mean is it going to take up one SEDAR slot and are we going to have to go through the whole SEDAR process as far as doing a data workshop and looking at all the datasets and then having the assessment workshop and a review workshop? Are we talking one SEDAR slot for 40 species or however many species we have to do or is it going to be much more than that?

Dr. Reichert: But I think what is also important; can we as an SSC make recommendations to that process, too?

Mr. Carmichael: Yes, I think you should make some recommendations to that because what this comes down to is really what you're willing to accept. The presumption right now is that anything short of a full-blown catch-at-age model is difficult to have it accepted. But you're saying, you know, in this dire situation you're going to accept these other evaluations; and if you think of a way in which it could work more smoothly, then I think we would be open to it.

I would imagine this would require a data assessment and review workshop. We would want the review. It may be a very different review than what they're used to. Where they're used to spending a week on a stock, they may have to spend an hour on a group of stocks that are similar.

They're going to have to go through it, but reviewers are used to working with all kinds of different situations, and I think they can get through this kind of stuff. The North Pacific did it and brought in their reviewers and they would go through 10-12 catch-at-age assessments in a week, so going through this number of less sophisticated models should not be impossible.

Perhaps you do it in two cycles, one starting in late 2009 and the other starting in 2010 so that you split the workload up in half. I think that is kind of the logistical thing we can work with the Science Center and think about how much can you really do in a week. Yes, I think putting it in SEDAR and following that process is probably the approach, though.

Ms. Jensen: Also, what is required – I mean we were supposed to come up with these limits by 2011, so does that have to go through a whole amendment and that whole amendment process; so, do we need to come up with our recommendations? You know, just thinking backwards, if it needs to be finalized in 2011, when do we have to have the numbers?

Mr. Carmichael: Well, the Comprehensive Amendment, one of the council's desires was that you would be providing them initial ABC recommendations by this June. The intent was to submit that in early 2010 so that it was in place by the start of 2011. Now, let's also recall that the hope was that they would have had ABC recommendations for Amendment 17 a year ago, and Amendment 17 would have been submitted in December.

I think now, looking at the current schedule, if this can be done by mid-2011 and you guys can be acting on it by the summer of 2011, that still leaves the opportunity open for the council to get this in with the numbers by the end of 2011. That isn't ideal but it might be best that can be hoped for. The initially desired deadline is gone, so now we're working on – as Erik said, we're working on triage and how do we get something out of this.

Dr. Neer: We're not the only council that is behind on these deadlines, are we? Just so everyone knows, we are not the only ones that are not going to make everything perfect.

Dr. Crosson: There is a time pressure and if we're behind in the process, they will just do some sort of interim measure, won't they?

Mr. Carmichael: I don't know; no one really knows how that will go. The guidance now is you need to get something in. If it isn't implemented by that deadline, you need to have something being submitted or darned close. The downside of that is potentially the Secretary takes action to meet the deadlines established by congress. As I understand it, one of the major consequences is that. Anything coming up your way, Mark, that you all have any better sense for what –

Mr. Nelson: I mean anyone will tell you that nobody wants that to happen. I can't really speak to that. Nobody is hoping for that and everyone is trying to avoid that. Really, what it comes to, if it isn't in by the statutory deadline, it leaves NMFS open to litigation, and that is really what comes because we're out of compliance with the law; and so if that happens we're open to litigation.

I'm not a lawyer so I can't tell you what happens from there. Of course, everyone is trying to avoid that. Most of councils are working their little fannies off right now and some of them are further ahead than others. It is going to be difficult for everyone, so we will see what happens. From a biologist's point of view it is hard to tell what will happen.

Ms. Coakley: At our last council meeting we had our ACL/AM Committee meet, and the regional office gave us a little bit of guidance on the timing of all this. Our stocks, they're all subject to the 2011 deadline, and there is concern about us getting our amendment through. Even if we submit it August/September, it won't be implemented until after Fishing Year 2011 starts.

The regional office had suggested to us, well, if these things are already in the works and you have an idea of what is going to be implemented, when those amendments go through, that you might want to consider taking action at that August meeting or October meeting to ensure that those measures get in place through the specifications' process even though they won't be implemented fully through an amendment until further down the line. That was some guidance they did give us at the committee meeting. At some point we will have our committee meeting transcribed if it is something anyone is interested in seeing.

Dr. Belcher: Okay, let's go ahead and take a 15-minute break, and then we will try to craft something together relative to a recommendation.

Dr. Belcher: Okay, for everybody at the table Luiz has his recommendations from the SSC up on the board.

Dr. Crosson: Can I pick up a little quick side topic. It is a technical suggestion and I don't know who we would request this from, but maybe if the South Atlantic staff could draw up a ListServe for the members of the SSC. I tend to get e-mails that have lots of different addresses and sometimes Christine catches something that I miss or vice versa. It might be easier to send e-mails out to the whole group that way.

Mr. Carmichael: I don't have the ability to set up a ListServe. I don't know what that means.

Dr. Crosson: Well, you all have a fancy website so I know there is somebody there who can set it up. It means it is one e-mail address that you send something to and then it goes to everybody that has signed up for it. You can restrict who can sign up for it and you can restrict can send e-mails out to the ListServe.

Mr. Carmichael: You can ask for that and we can shuffle it up through the administrative hierarchy and see what sticks to the wall. I can't promise anymore than that given my past success in achieving any sort of IT outcome. I would love to get an FTP one day and I'm still holding my breath for that to happen. Yes, this is on the record, yes.

Make the request and we will see if it can happen, but don't hold your breath, unfortunately. We're still hoping to get one common contact list so we didn't all have a different distribution

list for the SSC. That's why some people get things from other people because around the staff people have apparently different names on who their SSC contact list is.

Dr. Belcher: I am just going to pose the question did everybody get an e-mail from me relative to this meeting? Okay, Christine was the only that I knew who had to get it from Scott. Yes, Julie Neer, I will add you to my list. I think it would help John's request and put that we would like to have a ListServe and an FTP site.

Dr. Neer: Actually that is a good thing because you guys are some of the people that have the largest documents that we need to shuttle around such as the datasets; and if you get all this stuff, you will have even more.

Dr. Belcher: Okay, Luiz and them are still crafting, but this is where we are thus far for the recommendations.

Dr. Williams: I don't know if you want to get that kind of detail, and I wouldn't call it a "streamlined SEDAR process", for sure. It is not going to be streamlined. It might have to be a yearlong process, because we cover 60 species.

Dr. Barbieri: Because this is what we mean in terms of streamlined – Alex made the suggestion and I think it is a great suggestion. Of course, the committee itself hasn't heard it yet – that we provide the review, and instead of sending this out for a CIE Review, we review this ourselves.

Dr. Williams: I don't know; I mean maybe you guys disagree but I would try not to be too prescriptive as to how this would proceed, but just focus on what we're after and let the powers that be decide how we're going to get it.

Mr. Carmichael: We want to be kind of adequately prescriptive because they have sort of a tendency to not describe it, so I think if there are things the SSC is willing to accept in terms of making this happen, if we can list those it will help them to say, okay, we will let it run that way versus saying, well, you know, SEDAR has these three steps and if you don't follow these three steps, the SSC is not going to accept. So if we can kind of lay out how this could be done, they might be more willing.

Dr. Williams: Yes, I agree with that concept.

Mr. Carmichael: Try to be somewhat prescriptive but general enough to not tie our hands.

Ms. Jensen: We're not required to have CIE reviewers, are we? I mean it is okay for us to be the reviewers on this?

Mr. Carmichael: That will be a question the steering committee will have to consider. The process requires independent reviewers. It doesn't require that they be from the CIE; they typically are. But for a standard SEDAR benchmark, it requires independent reviewers. This is a different beast. This is closer and in some sense is procedurally to how we do updates. We do updates and the SSC serves as the review. That is the direction we're heading here.

Dr. Reichert: And this is a decision that is going to be made in June?

Dr. Neer: We want to actually bring it to the council now so that it could be a recommendation. If they approve it, it can go to the steering committee in May. The steering committee meets in May, so we need to get the council to look at it today or tomorrow.

Mr. Chester: I agree with Erik's comment about streamlining it and suggest that maybe we just call it a modified SEDAR process instead of streamlining.

Dr. Williams: Again, thinking about this, really I don't know if you need multiple assessment workshops. You might need multiple data workshops because that is where the massaging is going to occur and it is where you're going to have to make some tough decisions and then have like an assessment workshop where you decide on the methods that are going to be applied and how you're going to simplify those and then another assessment workshop where you actually apply it all and look at the results, and then you're done. Yes, I would think two data workshops and two assessment workshops might do it. The assessment workshops, one would be a methodology and then the next would be the actual crunching of the numbers.

Mr. Carmichael: How does that look; we're getting ready to read it? Okay, so we will be looking for volunteers from the SSC to participate in these workshops.

Ms. Jensen: If we participate in the workshops, so then we're not independent reviewers?

Mr. Carmichael: The review will be treated as an update review in which case we understand that people are going to cross over.

Dr. Neer: If we want the work to be completed by December 2010, does that really mean that we need to shift the 2011 benchmarks already scheduled? I'm just asking. You have delaying the cobia and black sea bass benchmarks until after 2011. They are in 2011 already, so that doesn't necessitate moving those. It just necessitates canceling out the updates, I think, scheduled for 2010, to get the work by the end of 2010.

Dr. Reichert: Well, that actually affects the entire SEDAR schedule because of the tilefish and snowy. And, again, that may be part of this discussion, but is there any indication of how the decision will fall in the SEDAR Steering Committee in terms of the work that is currently going on for black sea bass, tilefish, snowy and gag? We are making a considerable investment in trying to get life history data. If that is going to be moved, then I would rather not spend the money on something that is not going to be used.

Mr. Carmichael: It is going to be done slightly later. The production model may not necessarily require significant changes on behalf of your program.

Dr. Reichert: I am thinking about in particular – well, golden tilefish and snowy grouper we have already invested in getting the data, but we are currently starting to collect gag; and if the decision is going to be made in May, that's like three or four months of buying fish for life history studies that we may not have to do.

Dr. Neer: I think you're still going to have to do them. You're still going to do them; you just may not do them in 2010. The essays are still going to have to happen and the council is still going to want them. I am thinking that if we're asking the council to drop an update of three species – two species and the inside rumor is maybe they want more – do we also want to push for the canceling of the updates in 2011. I mean are we asking for more than we actually need?

Mr. Carmichael: No, you're not because if those were the first SEDAR cycle to be conducted in 2011, work is going to start on those in mid-2010. So, if you were going to start with a data workshop in February of 2011 for black sea bass, you're going to be cranking on black sea bass by September; and we're looking at this saying to get this done, you're not going to be able to do that, so that is going to have to be delayed; that you could maybe, if you decided to continue to do that cycle in the South Atlantic stock, that guys could then begin working on that maybe in February or March and have a data workshop in June or July. It is going to have to be delayed until late 2011.

Dr. Neer: Right, so it won't completed in 2010.

Mr. Carmichael: And we're asking for 2010 and we know in reality there may be some cleanup that is going to have to be done on these stocks early in 2011. That is sort of what we're allowing for is say a quarter of final wrapup and cleanup following the SSC getting into the review, because we know there is always work after a review. If it gets to the SSC by 2010, hopefully this whole thing is buttoned up by March 2011, and we're rolling on it.

Dr. Neer: I guess I didn't understand that 2011 was to have the entire SEDAR completed in 2011.

Dr. Reichert: I'm still a little confused. This is like one year out of the SEDAR schedule in which no other assessments or updates are going to be made?

Mr. Carmichael: For the South Atlantic. There is work continuing on –

Dr. Reichert: For the South Atlantic, which means that the current schedule, either species need to be dropped or the current schedule will be moved up one year, correct?

Mr. Carmichael: Yes, that's roughly what would have to happen; species would have to be moved ahead.

Dr. Neer: It will give you an extra year to collect more data.

Mr. Carmichael: On the one hand, though, the steering committee and the SEDAR process in general are still coming to grips with what is meant by this whole ACL/ABC business, and there is an awful lot of effort underway to try and get more assessments out the door, more updates done more quickly.

So I think doing this kind of fits into this whole underlying current of changing SEDAR and it gives us a place to start again and say, all right, moving into 2011 and 2012 on forward, what are

we going to attempt to do and how many updates are we going to attempt to do in a year, and how are we going to manage updates versus benchmark? We need more rapid assessment information and I think a lot of changes are underway.

Dr. Barbieri: If the group is satisfied we are ready to read it. I can read it out loud, anyway, just so we can kind of have a sense of what the message is and we can still adjust it as needed.

Dr. Belcher: I am going to ask a quick question; is this our first attempt to move away from a motion? I am just asking this because in the past this would have been something that we would have put a motion forward now to discuss. Okay, I just want to make sure.

Dr. Barbieri: As an emergency interim action, the SSC recommends that the SEDAR Schedule be adjusted to accommodate development of basic assessment analyses – example, surplus production models, et cetera – that will generate estimates of msy for South Atlantic data-poor unassessed stocks. The SSC has developed a process for determining ABC values as required under the Magnuson-Stevens Act, and these basic analyses are essential for applying this process in developing more reliable and scientifically defensible ABC values for data-poor stocks.

The SSC requests this analysis be completed by December 2010. The SSC recognizes that this request will necessitate the currently scheduled SEDARs for black sea bass and cobia benchmarks and updates for spiny lobster, golden tilefish, snowy grouper and gag be delayed until after 2011.

To facilitate completing this work within the available time, we commend a modified SEDAR process as follows: 1. Two data workshops addressing multiple stocks; 2, two assessment workshops; one to develop methods and a second for refining preliminary models; and, 3, review provided by the SSC.

Dr. Belcher: Comments or further wordsmithing?

Ms. Lange: I think this pretty well covers everything and it is put forward as a recommendation from the committee. I think it is a good idea and a good approach.

Dr. Belcher: Do we have a consensus on the recommendation? Seeing that no one has any objection to the wording, we will go ahead and approve that the recommendation go forward as a consensus item.

Do we have other recommendations at this point that we need to put into this or along with it, I should say, that we're putting forward recommendations from the group. We talked about a few others, a request from the Science Center, the request about a ListServe and FTP Site.

Dr. Williams: Well, what is the status of this whole ABC Control Rule we have come up with; is that all going forward at this meeting or not or are we going to take some more time to still write that up and pass it among ourselves?

Dr. Belcher: That's a good question; where are we? We've addressed the majority of the main issues. We have acknowledged that for certain things to proceed forward, we need more information. Have we covered every base that we can put our head around right at the moment relative to the ABC control rules? Have we covered every current scenario, anyway, relative to this rule, understanding that there is going to be room for this change over time, whether it is adding things as they come up that don't quite fit into the guidelines, as we have them?

Dr. Williams: I think it might be a good idea for us to sit on this ABC Control Rule, pass it among ourselves, make some edits, because we do have to write it up and explain it. And as we have talked about the communication of this is going to be critical, that's worth spending some time on, and then allowing some more time might make people think of some scenarios that might come up or things that don't seem to be addressed in our current plan.

One thing, though, we did all agree on was this idea of a population threshold, so maybe that simple concept ought to be passed on today to the council because that has ramifications for species right now.

Ms. Jensen: Are you talking about the 10 percent SPR thing.

Dr. Williams: Yes.

Ms. Jensen: Well, I would feel more comfortable if we knew why the – I mean we picked 10 percent because the west coast picked 10 percent, but why did the west coast pick percent and is that appropriate for our fish? I'm not saying it's not; I'm just saying I would like to have more reason for selecting that. I mean why not 5 percent, why not 7 percent, why not 15 percent? I would like to see some sort of reasoning.

Mr. Carmichael: Yes, I agree with that. I just think it is probably going to end up being one of those questions like why 30 percent SPR – because it was the judgment of those who were in the room. Why 25 percent reduction?

Ms. Jensen: Well, I think we need to have as much of a good reason as possible. If we're talking about a threshold below what you're going to shut down a fishery, I think we need to have a good reason for that threshold.

Dr. Williams: I don't know if we need a good reason. In most cases if a population gets that low, the rebuilding requirements are going to be such that it is going to have to be a near shutdown anyways.

Ms. Jensen: And I don't disagree with that; I'm just looking for something that is defensible, that we can stand up in front of fishermen and say this is why we chose it, because they're going to question why we picked 10 percent and then say we picked it out of thin air.

Dr. Williams: We didn't pick it out of thin air –

Ms. Jensen: Or because somebody else checked it.

Dr. Williams: It is expert judgment. NS 2 says anything that comes out of here, even if it just expert judgment, is best scientific information available.

Dr. Belcher: I was just going to agree with that is that it is a scientific precedent that has been put forward. Again, I'm sure that they had a reasoning on that. We had talked about, again, at what point is scientific opinion not considered a scientific judgment. We talked about that with our 5 and 10 percent.

They were saying they were not scientifically chosen. Well, based on what? Sometime you have to use your best feel for that. It is like we talked about relative to ESA Guidelines or threatened species status. If that is what they're looking at to move animals into those particular categories, maybe that is as much of a precedent as we really need.

Dr. Barbieri: However, I see Christine's point and that generating this discussion here basically we sort of document our level of comfort with that 10 percent. It is basically just discuss the issue. I think the better justification, even though the example came from the west coast, is that this committee has evaluated that initial value and is comfortable with applying it for southeast species. That way that is our recommendation, and I think it is much more defensible that way as we move forward.

Mr. Carmichael: My sense of it is like that as well. The west coast was cited as supporting evidence in an example, but much of the discussion centered around at what point do you just say, "Wow, it is low enough that directed fishing doesn't make sense." Endangered species were discussed and the point was made that as fisheries management you should end directed fishing before you get to an endangered species classification level.

So, that provided sort of a floor, looking at endangered species classifications. You would want to end directed fishing before you got there. That was the discussion that the group had on Monday in getting to that. So the 10 percent is, well, that is what they used; after some supporting evidence and all these other reasons, the committee felt that 10 percent is a reasonable place to set that threshold.

Ms. Jensen: Should we look at the stock-recruit graph and the replacement line, which is spawning stock biomass per recruit, the inverse of that, putting a slope on there and seeing where we fall, different percentages just to have some evidence?

Mr. Carmichael: Someone could if they were so inclined to do that for the 20 species assessed, but I think it was one of those situations where it was felt like it is easy to attempt to overcomplicate it when the point is what, going around the room, do people think that is enough to end the directed fishing and 10 percent came out of that. So, yes, you could analyze, you could come up with something.

Ms. Jensen: I don't disagree with the 10 percent. I'm just saying I would like some evidence because if you end up actually shutting down a fishery, especially something like snowy grouper as an example, we're going to hear about it and we're going to hear why did you pick that, what is your reasoning behind that? I am just looking for some supportive reasoning behind that.

Dr. Williams: To put this all in perspective, this is just a recommendation from us. The council may disagree with us on this. They could and I could easily see them viewing that as largely a management thing and we have no business saying anything about a 10 percent threshold anyways. But, it doesn't prevent us from at least putting it forward and just seeing where it goes. The council still has ultimate say on all of this stuff.

Dr. Barbieri: I think this recommendation can be seen, really, in perspective of other types of biological benchmarks; you know, 20 percent SPR, 30 percent, 40 percent SPR, so it is not a number completely without reference to other things. We can say, well, when it gets to 10 percent, you're getting into a zone of risk that we believe is unacceptable relative to how this has been developed over time compared to other reference points that are commonly used. In that sense I think it is very defensible.

Dr. Belcher: Further discussion? Do folks want to put together a recommendation?

Dr. Neer: Are you looking for a recommendation on that threshold specifically or are you looking for a recommendation on how the group wishes to proceed in writing this up and reviewing it?

Mr. Carmichael: I agree with what Erik said about the overall process, and I think given the intent of this meeting, which was to develop a process, I think we've made great strides in that, and it would be worthwhile to get it written up carefully. I have got some notes within those sections like this morning about the rebuilding thing.

I think Erik can probably write a great paragraph better than what I have for my notes about why that makes sense, and that is going to be so critical. Maybe it would give us chance to do some better tables and stuff that puts this together. It comes to the SSC at the June meeting in a document format as here is the framework ABC process, everybody has a chance to look at it and review it and get a really good document that then the SSC can endorse in June and take to the council. I think that is where we should leave that.

And to the extent that we can agree to components of that and get them out of the way, then that is good. I think the framework is agreed to; that's clear. Do we want to come out on this sort of global thing, this threshold, and make a statement here? If you don't want to do that and people aren't comfortable, then you can just wait and do that in June. It is not going to make a big difference.

Mr. Chester: Are we meeting in June? I had heard some rumblings that perhaps the SSC would not meet until December or September, something like that.

Dr. Belcher: I had not heard that.

Mr. Carmichael: You are meeting in June and you're meeting in December and arrangements are already underway. Any changes in you meeting not with the council would take effect in the next calendar year, anyway. The council plans their meetings at least a year in advance.

Dr. Reichert: So that also refers to us not meeting with the council; that doesn't occur until next year?

Dr. Belcher: Right.

Mr. Carmichael: My expectation is that we are already locked into our meeting requirements through the December meeting of this year and that those changes would take effect, at the earliest, in 2010. Plus for your own planning purposes, I think it is important to maintain at least the continuity through this year.

Dr. Belcher: My question is going to be with this report, who is ultimately responsible for writing the reports?

Dr. Williams: That's the chair's duty.

Dr. Belcher: I think all of us in some vein, you should have a hand in what they feel is the synopsis. I am little bit hesitant to say wait to discuss it until June. I mean as far as us recommending it and endorsing it, I don't disagree with that part of it, but I think that we really need to have an idea on how complete that document is along with a list of things that we have to do to make it more complete for June rather than wait and then say, well, it is not what it should be so what are we going to do now?

Mr. Carmichael: We want to approve this puppy in June, so that could mean that a month from now we hold a conference call to see where the documents and see how the committee as a whole feels about it. I think we should look as the target being a complete, final document that all you have to do is say amen to come June.

Dr. Williams: And that it gets put in the June briefing book in time.

Mr. Carmichael: In the June briefing book, in time for the June council briefing book to go to the Snapper Grouper Committee as the SSC's recommended ABC Control Rule and telling them the SSC's intention is to formally adopt that at the June meeting, which means basically stuff done by the 1st of May.

Ms. Jensen: So this document is to talk about everything we have talked about this whole meeting as far as the framework for ABCs and all that?

Mr. Carmichael: This document is to specify the ABC Control Rule and how you apply all the concepts within it.

Ms. Jensen: Okay. I like the idea of sitting on it and letting us all ponder it before making a final decision.

Dr. Belcher: My only concern is just relative to the recall issue. If we've gotten stuck in that situation in the past, I don't want us to have six months go by or three months go by or –

Ms. Jensen: No, not six months, I like the idea of having a conference call.

Dr. Belcher: Yes, that is what I mean is I think we need to have some sort of timeline come out of here as well as to when we're going to have a final draft, because, again, my hesitancy is just if we get caught on something as it comes out and we have to defend it again and we get to be three or months out of it –

Ms. Jensen: Let's have a conference call in a month.

Dr. Barbieri: Well, the council, as we present this to them – I mean after we finalize our draft or finalize the document – the council is always able to ask us for clarification questions on whatever. We will work at their pleasure and we can always clarify and explain any issues. We are not in the same position that we were before the December meeting.

I mean we made a conscious decision as a committee to come to this dedicated meeting and generate our framework. We have, in my opinion, a very well-established rationale for every decision that we made. You know, we always make recommendations to them and they're always more than welcome not to accept them, if that is the case. I don't us being in the same situation that we were before, and I think that our decision to rescind some of our previous decisions before was us not being on the same level of comfort with the process that we are now.

Dr. Belcher: But my point is relative to writing the report. If we give a little bit of a time window on when that report will come back relative to what you're putting into it, then we're waiting for an audio record or a transcription record in which to fill in the gaps. That is what I'm talking about is that – you know, I understand what you're getting at with answering questions and I'm not disagreeing with that.

We were able to do that before, but what I'm saying is the farther away from it we get and as we're trying to formalize it, we may not be as clear in our ability to have tangent recall in terms of – again, Joe's record and our audio record may not be as immediate, so there might be a lag on top of that.

Mr. Carmichael: How about we have a draft of the ABC Control Rule Document by March 27th. That is approximately three weeks from now. We have a conference call to review that draft, give you two weeks to review it, have a conference call of April 13-17. Part of that is because the week before that I am completely gone; so if you wanted me to participate, I would be out. The week before that we have a bunch of other stuff going on, so that's really the next available time.

We have a final draft, then, available by May 1st, so that any comments that are in there, incorporate them, and we as staff are willing to incorporate the final edits and everything that come out of that document and to get out to you next week a framework of the document, formatted and ready to go with blurbs pulled out from the various notes that I have taken and on the spreadsheet and everything that will specify that in hopes that people will help to flesh that out. You can e-mail and exchange back and forth pieces that people want to work on.

Recognize by all these cooperative efforts that people need to pony in and write a paragraph or two to really get the report to document what it is you have talked about. And as I say all the time to the SEDARs, if you have an opinion and you have a feeling on something, your responsibility is to make sure that gets in the report and documented and not to rely on others.

I will put together what we have and what we have talked about from the notes and stuff and lay out the framework and hope that other people will step in and fill in the blanks and such that are inevitably going to exist. I will try to get that out to you before the 27th. I will get the initial framework out to everybody next week and let people start working on it.

I will serve as the person to put all the pieces together as people send them in, which tends to relieve a lot of the burden of getting this done. We will have a reasonable draft together for the entire committee. Those who aren't here this week are not going to be able to add a whole lot to writing this report, so I think the group sitting around this table are going to have to be the ones that are really going to serve as the writing panel to get this done and get it out to the other members. I think with that maybe we can keep it fresh in everybody's mind and get it done, and it will be done by May 1st. That meets the briefing book deadline so we're good to go.

Dr. Belcher: I think the good thing in the sense that there is only a partial SSC is at least our peers can be that first litmus test as to how well we're explaining it. I feel better about that.
Ms. Lange: When did you suggest the conference call, the week of the 13th?

Mr. Carmichael: April 13-17 if that works for people. We could do it the week before; I'll just do it from Hatteras, so that would be okay.

Dr. Belcher: Okay, back to the recommendations from us; again, we have had some things that we've kind of circulated around that I think we really need to capture relative to what we're asking from the Southeast Center; the PSA Analyses being one of them, because obviously that is a component of what will happen with generating ABCs; the issue of the bycatch mortality that in the past has come in from the council side that should be accounted for someplace.

We need to have some recommendations. Jack, again, requested that would be formal request to the Science Center and not that it come out of his office – that generation come of his office. I am just kind of throwing some ideas out there.

Dr. Barbieri: I was just going to get clarification. When you mean PSA Analysis, you mean us getting that report, the report from Working Group 3 so we can kind of – because this is another issue – I just thought about – is the fact that we decided to have our PSA values there now just as sort of like a placeholder and to wait for the working group report and sort of re-evaluate all that PSA.

Dr. Belcher: My point is at some point we are going to have to have a request for that analysis; and as that document breaks, if it is somewhere in that time interval I think it would be nice to have the request out there that they're at least providing an alternative set of replacement values. It has to come from somebody.

Mr. Carmichael: Should in June we plan to discuss; we should have that stuff by then? Should we plan to discuss how to go about populating the PSA values? It is the kind of thing that would seem to lend itself to a workgroup of SSC members wearing their state biologist analytical hats and perhaps the Science Center to fill in that blank; you know, not as an SSC because that would be the SSC doing it, but a workgroup or sub-group as we have done in many other situations to deal with that kind of thing. We can talk about how to do that in June. Maybe we will have the information in hand to know what it entails. Does that seem to make sense?

Dr. Neer: Carolyn, were you looking for a specific request, what you were talking about for Jack? He suggested that a request go to the Science Center; you're specifically talking about speckled hind and warsaw grouper right now. It's the species that are in Amendment 17 that we need to do right away, right? Yes, that's probably a good idea.

Dr. Belcher: Mark, who is not here now, raised an interesting point earlier today. The problem that we have is – and Christine brought it up as well – in some ways it is management uncertainty because what they're doing is an afterwards assessment of what bycatch is supposed to look like based on whatever management scenario they're putting forward.

But, because of the way that the Magnuson is written, we give them an ABC. Our ABC is basically biological removals. We're saying it should be zero and in the past they have been able to put the wiggle on it. We can't do that. To me it is still a biological removal, which means it should be part of our scientific uncertainty.

Somehow we need to get it brought back around to come into our process, so that is where Jack was saying that because of the way their numbers have been done in the past, he was not comfortable with –

Dr. Neer: And the other thing is what Jack has been producing is the post quota bycatch stuff, which we don't need just post quota; we need total bycatch, which is sort of a different thing than what Jack has been providing the council for, anyway. So what you just need is estimates of bycatch for speckled hind and warsaw grouper for review in June, essentially.

Dr. Belcher: The other can of worms that opens, too – and this is where Mark came up and speaking to me – is how are we accounting for the uncertainty in those numbers? Right now it is an uncertainty bubble that should be part of a bigger bubble and it doesn't join. It is just kind of appended to it. We haven't adopted it fully into the framework. That is one thing that I don't know how we're going to address that. Right now you'd almost think it would have to be something additive, but knowing that is not the best way to do that.

Ms. Jensen: Are there any confidence intervals around those estimates of bycatch?

Dr. Belcher: I would assume so; he provides the averages, so I would imagine that there is some sort of confidence interval that goes with that.

Dr. Neer: Wouldn't it be possible to request information on bycatch estimates over some timeframe for those two species, and then in June, when you finally have some numbers, that is

when you can have your discussion on, okay, we have this number now; what number do we actually recommend. I am just trying to think of things. You can't really have a discussion until you see what the confidence intervals are. Until you get some information, you can't really take that next step.

Dr. Belcher: To me, ideally, that is something – and, again, I know it is putting the cart in front of the horse because of how some of these are generated. To me it almost needs to be inserted somehow into SEDAR, and we have been able to do that for certain species, but it hasn't been for all.

I am assuming this is more of a special case than something that is going to occur with high frequency, but I still think it is something that for right now our best foot forward is assume something additive and just put it in as a placeholder, knowing that is not the best approach. Otherwise, how else are they going to –

Dr. Neer: But you can't do that until you get the estimates of the bycatch, so you need to make that by recommendation or request – the request be made to the Science Center to provide you this information. I didn't know if you needed to officially do it.

Dr. Belcher: Well, that is what I'm kind of asking is I guess as we're forming this recommendation list, I think anything that we want as a formal recommendation – again, even if it is something that is as simple as ListServe and FTP Site – at this point capture those recommendations. Do you agree, John?

Dr. Reichert: In terms of the bycatch maybe we should then, again, look at the list of species because it may be there are a couple of other species than speckled hind and warsaw that we need to make our decision in June or the next decision in June.

Dr. Neer: Are the only species that you have to provide numbers for in June those for Amendment 17?

Dr. Belcher: I think so.

Dr. Neer: So then you really only it need for – you have a framework for everybody else – the four unassessed species right now, black and red, speckled hind and warsaw.

Mr. Carmichael: Take an example like golden tile, we have come up with a probability of overfishing and critical value for golden tilefish of 35 percent. We don't have any analyses of golden tile that cast landings' levels in terms of that probability, so we could need some analyses to get that. Is that what you need to request for the Amendment 17 species, and would you want to trust that you're going to stay with that same value or would you like to request the distribution? Is that something that could be done?

Dr. Williams: That request was already made to the Center, and we produced that table. I don't know what happened to it. I don't know if you guys received that or not, but, yes, we had the P-star and landings for golden tilefish. We had that done.

Dr. Neer: I guess we need a P-star analysis for all the species that don't have it yet to be requested by June; is that correct?

Mr. Carmichael: So, basically, Erik, I can read this off – what is it the quantiles of msy table?

Dr. Williams: Yes.

Mr. Carmichael: So, golden tilefish, quantiles of msy. The 50 percent quantiles of msy – I'm pretty certain I'm looking at golden tilefish and I'm looking at msy in thousands of pounds, 336.4, and then the 35 percent is 307.3, so that gives us about a 30,000 pound, 10 percent change by going from 50 percent to 35 percent. So, then, we could get this for the remaining species in Amendment 17 that aren't under a rebuilding plan and have in June, and then we could pick the values, just as we did here, based on whatever final P-stars come out of SSC stuff. We will have to request of the Science Center.

Dr. Neer: So we're requesting a P-star analysis for those that haven't been done?

Mr. Carmichael: The rebuilding species open up a little different can of worms. Will they require new rebuilding projections with different endpoints?

Dr. Williams: Yes, that I was thinking; no, because they still fall under the old system at that point because they are under rebuilding.

Mr. Carmichael: That's a very good point.

Dr. Williams: We could but that would be a lot of analysis.

Mr. Carmichael: So that addresses the things that already have an approved rebuilding plan. The SSC has given ABC recommendations to the council at the last meeting that said use those approved rebuilding plans, so that took care of sea bass, red porgy, snowy. Black and red grouper are coming. We're going to deal with that when they come.

So that means for gag, vermilion – golden tile we have from the memo – by my recollection, then, that leaves gag and vermilion as species that have been assessed for which we could request that table, and then it leaves the speckled hind and warsaw grouper situation that we're discussing.

So we would have a request to the Science Center first for a table similar to Table 3 in our last memo addressing golden tile, that addresses that for gag and vermilion. Really, what we're asking for specifically is quantiles of msy.

Dr. Reichert: Is this part of an official request?

Mr. Carmichael: This would be an official request that the council will make to the Science Center on behalf of the SSC. Is there anything you're going to request on behalf of speckled hind and warsaw grouper; have we worked that out, so it will be the two that remain?

Dr. Williams: You have to refresh my memory on gag, though. That is not under rebuilding, but it was approaching?

Mr. Carmichael: It was approaching an overfished condition, but if you ended the overfishing it then return back to – it would solve itself in like two years; so, considering all the passage of time, it probably already has turned the corner.

Dr. Williams: Well, are we requesting just discards or really is the request that we want what would be the total removals under a moratorium, because there are landings that are occurring? So if you shut the fishery down, which is ABC equals zero, then the one fish that is coming in every now and then gets reverted to the bycatch, so you have to sort of look at both the landings and the discards.

Dr. Belcher: Discards and bycatch.

Mr. Carmichael: Under a moratorium and then under a moratorium with a total closure on deepwater fishing; just another option that they're looking at.

Dr. Belcher: The statement that I have as far as another possible consensus recommendation is the SSC is requesting that the Southeast Fishery Science Center provide the following analyses: quantile tables of msy values for gag and vermilion; total removal estimates for speckled hind and warsaw grouper under a species-specific moratorium and under deepwater species prohibition.

Anything else that we need to ask for? Okay, anybody have any objection to that statement; any modifications to it? Seeing no objection, we will go ahead and approve this as a consensus-approved recommendation. Do we want to put a recommendation on there about the ListServe and the FTP Site?

It is requesting a ListServe and an FTP Site be made available. So, a simple recommendation that the SSC is requesting that a ListServe and FTP Site be made available; anybody have any objections or any modification they would like to be made to that statement? Seeing no objection, that statement will also pass as consensus-approved. Any other recommendations that we need to capture while it is fresh on your mind and before we break for lunch?

Dr. Reichert: Did we ask for P-stars?

Dr. Belcher: That is the quantile table. It was for two species that we didn't have them is my understanding. By John's notes, it was vermilion and gag.

Mr. Chester: Do we have them for king mackerel?

Mr. Carmichael: We're not there yet.

Dr. Belcher: This is relative to 17.

Mr. Carmichael: I think if this goes out of step, then you approve this process in June, and then you could develop the request for the remaining stocks that have been assessed to be applied and have that available in December and that will spread the work out a little bit.

Dr. Belcher: Is there anything else that you want captured before we break for lunch, or do you want to take the hour and think of something? If there is anything additional, we can catch it then.

Ms. Lange: Will you e-mail those to us what we have done so far, the other recommendations?

Dr. Belcher: We can. Are we at a point that we are done? Do you feel we have unfinished business?

Dr. Williams: We never did discuss ecosystem component species; and whether we need to or not, I don't know. The other one is NS1 Guidelines talk a lot about indicator species and species assemblages. I don't know if we want to revisit that topic again. It feels like we have beat that dead horse many times before.

Dr. Belcher: Okay, we can talk about that after lunch.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Jekyll Island Club Hotel, Jekyll Island, Georgia, Wednesday afternoon, March 4, 2009, and was called to order at 1:42 o'clock p.m. by Chairman Carolyn Belcher.

Dr. Belcher: Okay, we're going back on the record to discuss the issues of the ecosystem species and the indicator species. As Erik said, it has been on our record many, many times before about our general view on indicator species, but it probably needs to be stressed for the record yet again. So, with that said, which one do you want to start with? I guess indicator species is probably the quickest, so let's discuss indicator species.

Dr. Barbieri: Well, while you wait Erik to get to that part of guidelines, having made that recommendation to have the additional analysis and adjustment of the SEDAR schedule, that will give us the ability to look at so many species that I wonder do we really need, at this point, to cross that bridge in terms of indicator species? And to add to that, perhaps as we go through, as Erik mentioned, the triage, after the triage we might have a better idea of what we might need to find indicators for or which species are more suitable for that purpose.

Dr. Belcher: So basically we're reserving the right to discuss it at a later point pending what information we're asking for. Okay, anything else need to be said relative to that or does everybody kind of feel that is – okay, so then on to the ecosystem component species. Erik, I would appreciate if we could – I know I read it, but I just don't remember what they're actually considering; how are you defining it. I know we talked about the issue of the fishery and what is included in the fishery.

Dr. Williams: I don't know if anybody has printed this out or not, the NS1 Final Guidelines, but in the Federal Register it is on Page 3205 of the Federal Register Version. They have four

criteria to describe an ecosystem component species. A is a non-target species or non-target stock; and then non-target is defined up above; B, must not be determined to be subject to overfishing, approaching overfished or overfished; C, it must not be likely to become subject to overfishing or overfished according to the best available information in the absence of conservation and management measures; and, D, it should not generally be retained for sale or personal use.

That last one sort of starts to eliminate a lot of our stocks from falling into this category. But it does go on to say that occasional retention of the species would not in and of itself preclude consideration of the species under the EC classification. There is more detail, but the thing that I kept seeing in the guidelines is that the council makes the determination of whether they're going to put a species into this category or not and not the SSC. I would presume that the council would want our advice on that, but it doesn't say that they have to seek it in any way. In fact, it doesn't mention this as a duty of the SSC at all.

Mr. Carmichael: Presumably they may ask for some input?

Dr. Williams: Right.

Mr. Carmichael: Other technically related things.

Dr. Williams: I was thinking something we could discuss is, is there information we need to see that we don't have or we don't have in our brains to make these determinations for some of these species or are there certain species we know for sure we could potentially put into this category?

Dr. Belcher: Any thoughts from anybody?

Dr. Williams: I think Luiz raised a good point about waiting to see the outcome of this triage approach because that will probably provide us some information on a potential list of species that might fit into this category. Maybe we could even make that part of the triage, I don't know. I would hate to add more to that particular SEDAR, but I think it will sort of fall out anyway. If we're trying to tabulate the landings, it will become pretty obvious which ones we can barely even get any landings' estimates for.

Dr. Belcher: So that is another that we want to go ahead and say we'll defer comment on until June.

Dr. Williams: The reason for bringing this up is maybe we want to basically ask the council would they like us to weigh in on this; you know, how do they want us to act on this? Do they want us to consider a potential list of ecosystem component stocks or not?

Dr. Belcher: So is that something that, again, as we formulated recommendations, is that something that we could put down as a formal request to them as far as additional guidance on how – you know, our current understanding as a group is that we're not necessarily part of the determination for ecosystem species, yet we understand that there is a chance we'll be asked to advise on that and could they provide us some clarification to that.

Dr. Barbieri: I am not sure we want to ask them for their guidance. I think we should assume that regarding the NS1 Guidelines that all of those issues that have a scientific nature to them, they would expect us to be ready to provide some input and that we can kind of be a little further ahead of the actual request. I cannot see how – you know, perhaps working with council staff, but otherwise I cannot see how they will be able to develop anything meaningful, really, on this without input from the SSC.

Dr. Belcher: I know this is going on record, but we have that happen in the past. I mean we have definitions of "deep water/shallow water" breakouts or complexes that were not discussed with the SSC in how those determinations were made. Erik and Kyle have looked at situations of how you try to put together assemblages, and it is all relative to the question you asked on that.

I mean it has been done in the past without our advice. Assuming that we would get a cut at that I think is – if we're feeling it is something that we should have some input on, maybe we need to say something like that; not that we're saying we have anything to add to it right now, but with further knowledge we may be able to provide them with scientific guidance on that, if that is what they want. That's the problem that we have is that maybe they haven't thought about that.
Dr. Williams: I think one way to say it is we can just say that the NS1 Guidelines mention ecosystem component species, and that the choice of these will fall to the council. The SSC views this as a larger scientific issue and suggest that we be consulted when this topic comes up or something along those lines.

Dr. Neer: Just along those lines, they're already making moves to discuss moving species in and out of fishery management plans. This came up at the mackerel meeting yesterday. There are five or six species in the Coastal Pelagics Joint Plan, and three of them, sero, little tunney and Atlantic bonito, are currently in a fishery management plan but are not actively managed.

This issue of ecosystem components came up, and Monica had suggested, from her interpretation, that the council needs to make some decisions on whether they should either be moved fully into the plan and managed or removed entirely. The council is already starting to talk about these issues; so if you guys feel you should be able to weigh in on that, they have already directed staff to come up with options of what to do for the next meting.

Dr. Belcher: Anyone else have any comments to that, concerns?

Ms. Coakley: In the guidance where Erik was highlighting, if you read down a little further – it is in the middle column on that same page – Section 6, reclassification, and if you that Section 6 there, it leads you to believe that it is expected that this ecosystem classification is kind of a fluid process where the council should be regularly evaluating what species are classified as ecosystem components or not and if previous classification criteria are appropriate.

So, whatever the criteria are, maybe if you're going to weigh in on something, if there is sort of a standard process for that that at some later point can be reapplied to the stocks that you have, to see if those criteria still hold true at some later point, if there aren't things shifting from what

would be an ecosystem component species to a non-target stock or a target stock, but that Section 6 talks about that a little bit more.

Dr. Belcher: Okay, the general statement that I have drafted – and it is just matter of what we want to say, that our action is going to be relative to that is I have the sentence that states "The NS1 Guidelines mention that ecosystem component species will be determined by the council. However, the SSC feels that these decisions should be made with scientific input." Then I have something that the SSC is suggesting/recommending something – is that kind of in the veins of where we want to go with that? So what are we suggested?

Dr. Barbieri: We are suggesting that the council request our input they deem as appropriate.

Dr. Belcher: Say that again.

Dr. Barbieri: If they feel that is appropriate to request – you know, we're basically asking them to ask us and that we're making ourselves available to provide that input; isn't that basically what you had said?

Dr. Belcher: So the SSC suggests that the council consider this request in the future. "The NS1 Guidelines mention that ecosystem component species will be determined by the council. However, the SSC feels that these decisions should be made with scientific input. The SSC suggests that the council consider this request in the future – that the scientific input be considered that request."

Dr. Reichert: So that refers to the species that should be included in the ecosystem component species, so we start making a list when that request comes in? Should we discuss the species earlier?

Ms. Jensen: I think once we get a chance to look at what sort of data we have in these future SEDARs addressing data-poor stocks, then we can get a better idea of what needs to be considered ecosystem components. Those that we don't have a lot of catch information obviously aren't part of the fishery and those might be considered ecosystem component species. If we have a lot of catch information on a species, it can't be considered to be an ecosystem component.

Dr. Belcher: Okay, to tighten some of the language, maybe, the first sentence still stands, but change the wording to be "The SSC suggests that the council consider consulting with the SSC as species are being added or removed from the ecosystem species grouping" – or recommends. I don't which verb is better.

Dr. Williams: Well, one thing is use the term "ecosystem system component species". That's the language used in NS1.

Dr. Belcher: Okay, so "suggest" or "recommend", which one do you think is a better verb?

Ms. Jensen: "Recommend"; we don't just suggest, we recommend it. We need a little bit stronger word.

Dr. Belcher: So, the SSC recommends that the council consider consulting with the SSC as species are being added or removed from the ecosystem system component species grouping.

Ms. Jensen: It sounds good.

Dr. Belcher: Okay, any further modification or concern over the wording? Everybody in agree with that statement standing as a consensus? So we have consensus relative to that recommendation coming from the SSC. Any other recommendations or items we feel a need to discuss? We have kind of hit on the two that Erik suggested before lunch. Anyone else have any other business they would like to bring forward or any other recommendations they can think of from the group?

Dr. Barbieri: Just as a matter of clarification, what is the timelines or due dates for the report?

Dr. Belcher: John gave us the draft document and the report, he is going to work on the framework, and he will have it out to us next week with a hopeful first draft stab for March 22nd. We will have two weeks to review it. We will have a conference call somewhere in the week of April 13-17. Then May 1st is when we're going to have a final version. So, March 22nd for the draft, two weeks to review, conference call for the discussion week of the 13th, and May 1st for a final document.

Ms. Lange: I thought it was the 27th?

Dr. Belcher: Was it the 27th or 22nd?

Mr. Carmichael: 27th, 13-17 and 1st.

Dr. Belcher: It is the 27th, March 27th. Okay, so seeing that no one has any other business to add, any other comments or clarification relative to what we've done or any questions? Everybody feels pretty good about what we have done? I know I am very pleased with the progress we made. I feel a lot better about it. So, with that said, I can adjourn the meeting.

(Whereupon, the meeting was adjourned at 2:10 o'clock p.m., March 4, 2009.)

Certified By: _____ Date: _____

Transcribed By: Graham Transcriptions, Inc.
April 7, 2009

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SSC Committee Meeting
Jekyll Island, GA
Monday, March 2, 2009

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Sarah Hagerdorn	919.881-2916	4000 Westchase, Raleigh, NC
Mark Nelson	206-755-0509	3304 Chestnut Hill Ct, Williamsburg, VA 23185
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SSC Committee Meeting
Jekyll Island, GA
Tuesday, March 3, 2009

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Karla Gore	727-551-5703	NMFS SERO

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SSC Committee Meeting
Jekyll Island, GA
Wednesday, March 4, 2009

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