

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE WEBINAR

**SAFMC Headquarters
North Charleston, SC**

June 3, 2015

SUMMARY MINUTES

SSC Committee

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Bob Mahood
John Carmichael
Dr. Mike Errigo
Dr. Brian Chevront
Myra Brouwer

Gregg Waugh
Chip Collier
Amber Von Harten
Dr. Julie Neer
Kim Iverson

Participants:

Rusty Hudson

Jason Didden

Other Attendees Attached

The Scientific & Statistical Committee of the South Atlantic Fishery Management Council convened via webinar at 1:30 o'clock p.m., June 3, 2015, and was called to order by Chairman Luiz Barbieri.

DR. BARBIERI: Good afternoon, everybody, and welcome to the June 3, 2015, South Atlantic Fishery Management Council SSC meeting we are conducting via webinar. If you are connected to the webinar and you have good reception of video and audio, you can probably see our agenda posted on the main webinar screen. Before we go into any of our other agenda items, I think we are going to go around for a roll call of SSC members present.

MR. CARMICHAEL: We have the list on the webinar and we will save it, so we can probably skip that part since we have it all here.

DR. BARBIERI: Okay good. Anything else that we need regarding introductions, John?

MR. CARMICHAEL: No, I think we're good.

DR. BARBIERI: Then we have our next agenda item being approval of the agenda that you can see on the main webinar screen. Are there any comments, suggestions, or modifications by any of the members regarding the agenda? Hearing no comments or suggestions and seeing no raised hands; we are going to consider the agenda is approved as presented. We will move on to our Agenda Item Number 2, Public Comment. Are there any members of the public who would like to make any comments at this time?

MR. HUDSON: Because I was unofficially involved with SEDAR 32 with blueline tile; last week when I was talking with Ben Hartig, he had a very good suggestion that has been on my mind where he indicated that the historical blueline data appears to be flawed with golden tilefish landings from '81 to '85; probably several million pounds.

I always found that my blueline tile was about 10 percent of my snowy grouper catch during that period. I would suggest – and he suggested this last week – that if we were to total the snowy grouper from that region for that time and then see if we indeed probably have golden tile instead of blueline tile in early history; that could dramatically change this entire assessment. I don't know how we can get about getting there, but I just wanted to throw that out there.

DR. BARBIERI: We can move on to our Agenda Item Number 3; Blueline Tilefish Stock Projections. Hopefully all of you have had a chance to read the overview document that was provided to us with some attachments and other background documentation. John just posted on our webinar screen the overview document pointing out some of those attachment numbers and some of the rationale for our discussion this afternoon.

As you may remember at our last SSC meeting, we reviewed some information regarding the blueline tilefish stock assessment and some new information that came out on the biology of blueline tilefish. A discussion came up regarding the projections that had been provided by the Science Center for blueline tilefish. During those discussions at our meeting, we felt that it would be valuable for us to reevaluate the science on this and look at the current projections for blueline tilefish and review them as needed.

We have a number of action items associated with this review. Our action items are review the blueline tilefish stock projections. We have a presentation. Hopefully all of you have received the presentation prepared by Mike Errigo that will introduce us to the topic and provide some information to help guide our discussions.

Identify uncertainties and discuss their impact on projection results and fishing level recommendations and management. Then determine whether projection assumptions such as interim year landings are met and comment on the consequences of these determinations for fishing level recommendations in management.

Determine whether the existing projections represent the best scientific information available and whether they are adequate to support fishing level recommendations for both the current and future years. Provide guidance for revised projections if necessary. Then, finally, provide revised fishing level recommendations including ABC and OFL if appropriate.

That gives you an overview of what we are going to have to be discussing this afternoon. Unless there are any questions or comments from the committee, I think we should be ready for Mike Errigo's presentation. Any questions or comments from any SSC members? Mike, I don't see any hands raised and I don't hear any comments from the committee; so whenever you are ready, we are ready for the presentation.

DR. ERRIGO: First I am going to over all the projection, the different iterations, why we reran them, what were some of the issues and stuff that the SSC had with some of the different projection runs and what we used for the final ABC projections. After that I am going to go over all the new information that we have; so the landings in relation to those that were assumed in the projections or estimated in the projections, as well as the established ACLs, also any of the regulations that affected the blueline tilefish fishery.

I also have all the updated length compositions for the longline fishery, the handline fishery commercially and then MRIP. I don't have it for the headboat fishery, though. We should at least get an idea of what is going on there. Just briefly to summarize the projections, I have this table here. The first projections that we got were the November 2013 projections. All we had then were landings for 2012.

We simply assumed that 2013 and 2014 landings would be identical to 2012. What happened there was we got extremely high estimates for F in 2013 and 2014 due to those estimates of landings for those years. Instead of that, we decided to ask for projections that had the actual 2013 landings or preliminary estimates of 2013 landings.

On April 7th that is what was done; it was rerun with the preliminary landings from 2013. Also the council in December had implemented an emergency rule which set the ACL for 2014 equal to the yield at 75 percent of Fmsy. That was assumed to be the landings for 2014 there. Those were the April 7th projections that came out before the April SSC meeting in 2014.

Now, coming into the April meeting, they had finalized landings for 2013, which were significantly higher than the preliminary landings were because of an unexplained spike in recreational landings; the MRIP landings in Florida. The Science Center also gave us

projections that had an average MRIP value from 2010 and 2012 to mitigate that huge spike in 2013; so that is what the April 28th imputed value is.

You will see the 2013 landings are much lower in that year; still holding 2014 at the 75 percent of Fmsy yield. There was a lot of discussion at the SSC meeting about what to do in this situation. The Access Point Intercept Survey had just been changed in 2013; and for some reason there are one or two intercepts of blueline tilefish in certain areas at certain times that resulted in really big spikes in the estimated landings for MRIP.

The SSC wasn't 100 percent comfortable using the actual landings estimate. However, they also weren't 100 percent comfortable using simply the average MRIP landings from 2010 and 2012. It was decided that instead they would use the MRIP website landings, which were much lower than the Science Center landings estimates but higher than the average imputed landings.

That is what was used – that May 15th interpolated projections; that is what we used there for the 2013 landings. We just interpolated what the projections would be in between those two projections provided by the Science Center at the April meeting. Those are all the projection scenarios.

The biggest problem stems from what to do about 2013 and 2014, from that earlier year, and the issues with the F being so terribly high. What we settled on were those interpolated projections; and real quick I'll just summarize what happened there. The SSC discussed all the uncertainties. There was that unusual spike.

The weight estimates were significantly different between MRIP website and the Science Center; and so the MRIP website, they were lower. The SSC decided to use those estimates, because it was based on actual 2013 data, and it fell in between the two projections that the Science Center provided to the SSC at the April meeting. It was basically kind of a compromise.

It took into consideration all the uncertainties that went into the two projections given to the SSC at that meeting. The actual P-star projection was just interpolated using the percentage difference between the other two projections that were given by the Science Center and the new landings estimates; and that was used for OFL/ABC.

The next set of graphs here is going to show 2013, 2014, and 2015 from each of the projection scenarios; what the landings were. The first bar, the blue one here is December. I'm sorry, I labeled them incorrectly originally. This is the November 2013 projection; the first one. The next one after that is the April 7th. The next one after that is the Science Center actual estimate of the MRIP landings.

The purple is the imputed average; and the light blue on the end is what was actually used for the ABC. That is the interpolated projections. The orange bar is the ACL in that year and the black bar is the actual landings from that year. There is a lot of information there; I will let you guys soak that in for a second. Basically, what this is saying is the projected landings were all over the board for a while there.

What we settled on was something kind of in the middle in 2013; but the actual landings were higher than all of the projected estimates. The next graph is 2014. Basically after the initial

projections which had just assumed that everything was the same as 2012 was, we just set everything equal to the yield at 75 percent Fmsy. That was the Emergency Rule.

However, the actual landings in 2014 were significantly higher than that; and that is because these landings include the landings in the Mid-Atlantic. Because since this is a coast-wide assessment and we're looking at the ABC here, I wanted to show what the actual landings were for the whole coast as best I could.

This includes like Mid-Atlantic and New England landings, as best as I can gather them. What happened was once we hit our ACL in the South Atlantic and closed the fishery down, landings continued to occur in the Mid-Atlantic Region, and so the actual landings were much higher even than what was predicted in the original projections from November of 2013, which is the blue line.

Then the last one here is 2015. This one does not include Mid-Atlantic landings because so far I haven't been able to locate any. Apparently their season is just beginning to start now, so they don't have any. These are all preliminary landings. However, as you can see, the ACL was set at the ABC value from the last set of projections, which is the blue here.

Then the actual landings that came in were again significantly higher than any of the projections had shown. We are significantly over any of our projections for the interim years and the first year of actual projections. The next couple of graphs I am showing landings versus what the F and spawning stock biomass projections were.

That has the projections as well as the historical, so what SEDAR 32 had, in order to put into perspective what we're looking at. Then basically what it shows is that the projections are predicting very high levels of F by 2013 and 2014. However, the F just seemed a little high to sustain the level of landings there for blue line.

It just seems that the fishermen wouldn't have continued to fish for blue line if it really was that difficult to catch them or they wouldn't have been able to achieve the level of landings they did so quickly if it really required that level of effort to obtain. Also there is a bump –

DR. CROSSON: I have a question for you. Is there any information about the CPUE from these commercial fisheries in either the South Atlantic or Mid-Atlantic region?

DR. ERRIGO: I don't have any of that recent information, no. I don't have effort information, no. I haven't been able to gather it. We can get hold of it but I don't have it for this, no, I'm sorry.

DR. CROSSON: I don't disagree with your statement. I just was wondering if there was any evidence to support it.

DR. ERRIGO: Right. Well, one of the other issues with CPUE in these areas is that we've heard that blue line can be fairly easy to target. One of the reasons why we didn't include this area and this time period in the CPUE indices in the assessment was that it may not be a good representation of actual abundance and things like that just because they are easily targeted and caught.

DR. SCHUELLER: Mike, you just made a statement that blueline are easy to target; therefore, the F could be high without changes in effort. I guess I have problems that the statement on here – they are sort of made but not necessarily supported.

DR. ERRIGO: Well, yes; this is just one of the possible scenarios. It is just one of the possible scenarios that could be happening. The other one is that, right, the F can be high even though abundance is low, but the abundance could also be really high. There is a lot of uncertainty in what is going on.

But there is other information that I have to get to that will show – like the length comps and things that will show that it looks like there is more fish than what this is suggesting – than what the projections are suggesting. The increase in the spawning stock biomass and the landings in the later part of the time series coincide with the shift in the fishery Hatteras north.

If you look at the logbook data for where people are fishing, the increase in the landings around 2006 and 2007 corresponds directly with a shift in effort from south of Hatteras to north Hatteras. What could possibly be happening is fishing is starting to occur in a new area that is lightly exploited; perhaps there is a higher abundance of fish or fish are more readily available to gear.

The model increases recruitment at that time period and also the spawning stock biomass in order to compensate for that increased landings; but then there is an apparent drop in 2011. The landings decrease significantly, which looks like a decrease in spawning stock in the recruitment failure. Since the model has nothing to inform recruitment in the terminal year; that is what is assumed.

DR. BOREMAN: Are you really saying it was a shift in the fishery to north of Hatteras or is it an expansion of the fishery that happened north of Hatteras?

DR. ERRIGO: For the longline fishery it was a shift.

DR. BOREMAN: You were seeing fewer landings Hatteras and south during that time you were seeing an increase north of Hatteras?

DR. ERRIGO: Yes. The longline fishery – in fact even the handline fishery shifted. There were more landings and more trips from Hatteras north, and then the handline fishery in the most recent year shifted back south, but the longline fishery has remained north of Hatteras.

DR. BARBIERI: Mike, just along those same lines, does this have to do with the fact that the South Atlantic Council implemented regulations in the South Atlantic that caused the fleet to only fish in areas north?

DR. ERRIGO: No; I mean, I have a list of what the regulations are affecting blueline, but there is nothing that affects fishing longline in the area. I can only imagine; unless it has something to do with – because I've heard some people say it had something to do with the shark longline fishery, them not being able to participate as much in the shark longline fishery; so effort moved into the blueline tilefish fishery from the shark fishery. The effort just wasn't there. The effort

decreased and almost disappeared in the longline fishery, anyway, from south of Hatteras and really increased from Hatteras north.

DR. REICHERT: Mike, you talked about handline and longline fisheries shifted north; that was in what year again?

DR. ERRIGO: Let's see, the longline fishery, it was very sudden and it was like 2007, I believe. The handline fishery was a bit more fuzzy; it was like 2005, 2006, 2007 and it kind of shifted over a couple of years.

DR. REICHERT: Okay, and then you said in later years handline shifted back to the south, but the longline remained north of Hatteras; but that was very recently; correct?

DR. ERRIGO: Yes; that was more recent. I have the length comps broken out by where the fish were landed; no, not where they were landed, where the fish were caught. Hatteras north and south of Hatteras you will see there are almost no handline trips sampled that said that they were fishing north of Hatteras. Then there were very, very few longline trips saying they were fishing south of Hatteras.

DR. REICHERT: You showed some of that at the recent SSC meeting; correct?

DR. ERRIGO: Yes. It seems that the longline shifted north and stayed there. The handline shifted north but has since shifted back towards the south. We can speculate on why. I can only imagine that the handline fleet is fishing for many other things besides just deep-water species like blueline; whereas, the longline fleet is either going to fish for like shark species or deep-water species. I'm guessing they will have to steam further out. They are south of Hatteras and there is probably less fish to catch is what I've guessed, but I don't know for sure.

DR. SCHUELLER: Mike, can you go back again. What is your basis for the statement in the last bullet of this slide regarding recruitment failure?

DR. ERRIGO: I guess I shouldn't have said recruitment failure. What happens is it is just assuming the average recruitment, because it has nothing to inform recruitment. In fact, there is nothing to inform recruitment for the last several years of the assessment; but because of the drop in landings, it shows spawning stock biomass going down and not hardly any recruitment there to help keep spawning stock biomass up.

DR. SCHUELLER: Well, it is assumed recruitment of Rmsy or somewhere near there, right, which is not a recruitment failure.

DR. ERRIGO: That was poor wording on my part, I guess.

DR. SCHUELLER: In particular some of this stuff is related to the assessment itself. I thought the point of this was to review the projections. I know this SSC has discussed the projections already many times. Have issues been raised in the past discussions that would have foreshadowed this discussion occurring with assumptions of the projections you have?

DR. BARBIERI: Amy, I think those are all valid points that we need to discuss; but if you don't mind, let us go through the presentation just so we can discuss those things after we've seen the – if there are specific questions about the presentation, by all means; but I think we're going to have time to open up the floor for a lot of this more extended discussion points.

DR. ERRIGO: Just as a point of clarification; this is lead-up to assumptions and lead-ins that are carrying forth into the projections, and are these assumptions that are moving forward into the projections – are causing issue with the projections as the projections move forward into time? I am just looking back to see where are the issues that may be causing the projections to perhaps go awry from what people are saying they think are actually going on.

That is where this is coming from, going back to the actual assessment. It is not to question the assessment. The SSC has discussed that, but it is moving forward with the projections; carrying those things forward. This is just a graph of the landings, F trends and spawning stock biomass for the SEDAR 32 time period, which goes from 1974 to 2011.

The black line marks the break between the assessment and the projection. After that line, you get the projection. You'll see these are the first set of projections, the November projections. Here are the landings. The landings are all the bluish diamonds. Spawning stock biomass is the squares, and F is the solid lines. In these projections, these are all the P-star equals 0.3 projections. The projections predicted F.

These are all standardized to the MSY levels so that they can all be on the same axis; but the F here was over 3 in 2014. Here are the landings; they were the same in 2012, 2013, and 2014, and then the projections started down here. That is the first one there. I didn't put all of them. I just put a few of them, because they all kind of show a similar picture.

This one is the imputed average MRIP landings from April 28th that were given. These were interesting. The landings go down, SSB also decreases, but the landings go down significantly by 2014; but there is quite a big jump from 2013 to 2014 in F, and then it decreases quite a ways down once the projections start in 2015.

I just wanted to show these are the projections that were actually used to get ABC and OFL. The red lines are actual landings. Here are the landings that were put into the projections, this bluish line here. The red are the actual landings. The 2015; those are preliminary, of course. The red are the actual landings.

They kind of match up with the end of the time series of SEDAR 32; and then the F values here. That is just to put it in perspective of the whole time series of the assessment and then into the projections. We are going to look at the recent landings a little more closely. I have just a couple of graphs for that. It is broken down into recreational and commercial.

The ACLs listed are for blue line only, not the deep-water complex, because in 2013 and previous blue line was in the deep-water complex, but I just took the blue line ACL. This includes landings from Virginia north for the 2012, 2014, and the 2015 landings are preliminary and do not include any of the northern landings, because there weren't any to be had that I could find. They both include SEDAR 32 landings. One has the whole time series and then one is just truncated to get a better look at what is going on.

Here is the table of regulations to try to help see maybe what is going on in certain years, what might be affecting some of the increases and decreases and things like that. Of course, 2011 we have the 240-foot closures; 2012, the Comprehensive ACL went in. Also in May of 2012 the 240-foot closure was removed. In September of 2012, the deep-water complex was closed commercially to fishing because the ACL was reached.

In 2013 Regulatory Amendment 13 went into place, which changed the ABCs and ACLs because of that transition from MRFSS to MRIP. There was an increase, I believe, in the blueline tilefish ACL. Then in 2014 the Emergency Rule went in, which removed blueline from the deep-water complex and set the ACL at the yield at 75 percent of Fmsy.

In that same year in June, there was a closure for blueline commercially. Then in 2015 blueline was closed in April because the commercial ACL was met. As of yet, the recreational component of blueline is still open, but I am not sure what they are doing about that. I think that one is probably going to be closed sometime in the near future.

DR. BOREMAN: Mike, that closure in 2014 and 2015; that is just from North Carolina, Virginia Border south; right?

DR. ERRIGO: Yes, that is right; that is a South Atlantic closure. We don't have the jurisdiction to close the fishery in the Mid-Atlantic Region or the New England Region. Yes, these are South Atlantic closures. I will talk about what happened. You will see some stuff like the landings in 2014.

They were limited to – well, we still busted the ACL in 2014, but not by that much; but you will see the actual landings are about twice what the ACL was, and that is because landings continued up in the Mid-Atlantic Region, which I added into the total landings. It was not closed there. Here are the landings. The dark blue is SEDAR 32; here is 2011.

The light blue are the recent landings; and the black lines for each year, those are the ACLs. We were under the ACL in 2012, and then we busted it every year after that. Here is 2014; the reason why we were so far above it is because what I just said, landings continued to occur in the Mid-Atlantic even though we closed the fishery in the South Atlantic. That is why we were so far above.

But you can see if it wasn't for that closure, the 240-foot closure, the landings are pretty much on par here; they were at the end of the SEDAR 32 time period. Then here is a zoomed-in picture of the end of that time series with a lot of these closures and things put in. You can see when they occurred and where they line up and all that.

The purple line at the 240-foot closure there and that orange-dotted line, there was that commercial closure in September; but the landings still got very high. It closed in September. In 2014 we put in the emergency rule and it closed in June. I think the South Atlantic's landings were closer to down here, but the landings still went all the way up; you know, total landings due to landings happening elsewhere on the coast; and then a May closure this year – I mean an April 7th closure this year commercially. That is what the landings trend looks like for recent years so far.

The length comps; for the length comps I was able to update them for the MRIP landings – not headboats – the longline component of the commercial fishery and the handline sector of the commercial fishery. They are nominal; they are not weighted. They are separated; they are broken up into 1 centimeter length bins fork length.

The MRIP data is from the intercept data, and then the longline and handline data is from the TIP sampling. Everything is broken out from Hatteras north or south of Hatteras, and then the total length comps all together. It should be noted that the MRIP length comps, I did break them out this way, but they don't report where they were fishing so I had to do it by where they were intercepted.

In North Carolina there were two counties where they were intercepted, Dare County and Carteret County. Carteret County was considered south of Hatteras and Dare County was considered Hatteras north. There may be some crossover there in terms of somebody may have fished south of Hatteras but landed in Dare County, it is possible; but from the people I talked to, it would be pretty good to make the dividing line there.

DR. VAUGHAN: Carteret is definitely south of Hatteras.

DR. ERRIGO: Yes. It is the Dare County that I wasn't 100 percent on; but that is all that there is.

DR. VAUGHAN: There is a wedge of Beaufort County there between Dare and Carteret.

DR. ERRIGO: Right; and there were no intercepts in Beaufort County. It was only Dare and Carteret. There was that space, a county in between. I thought hopefully that would minimize the amount of people fishing in one area and landing in the other, but I'm not sure. These are all South Atlantic length comps. There are no length comps from the Mid-Atlantic or New England. There are no age comps; there are only length comps.

What I did was in order to help give a little more information, I colored some of the bars red based on the Von Bertalanffy growth curve from the model. This is by no means as good as any age comps, but I thought maybe it might help to show these fish; you know, fish that were measured at these lengths are possibly younger fish.

The ones that I colored are according to the Von Bert curve, age classes 1 to 2; that has a 40 centimeters and less. I will just show – here is the Von Bert curve from the assessment. This is the graph that shows the red is the Virginia fish, and then the blue is North Carolina to Florida. Then this table just shows according to the Von Bert curve this age corresponds to this length.

That is how I calculated which fish might be Age 1 or Age 2, but there is a lot of scatter. Everything from 40 down, so 400 millimeters – I mean, the North Carolina to Florida fish are younger and the Virginia fish are a little older, but they are scatter, but just to give an idea. Here are the longline age comps. The ones over on the left are for all areas combined; and then 2012, 2013, and 2014 from top to bottom.

I list the number of fish that were sampled and the number of trips that were sampled. You'll see in 2014 there were significantly less trips sampled in the South Atlantic; and that I can only

assume is because of the closure because of the ACL. Even though the total landings are high, half of them are in the Mid-Atlantic, and I don't have samples from there.

The next slide I'll show by sex, male and female, just to try to explain this weird bump, why this has two modes here, two bumps; these are old males. Here you'll see Hatteras and north for the longline fishery. All those samples from 2012 came from Hatteras and north. In 2013, 24 out of the 31 trips were Hatteras north; and in 2014, 7 out of the 12 trips were Hatteras north.

DR. REICHERT: Mike, I have a quick question. On this slide; these are the age comps, you said.

DR. ERRIGO: No, these are length comps.

DR. REICHERT: Okay, I thought earlier you said age comps.

DR. ERRIGO: I may have by accident. The red lines are indicating these lengths correspond to age classes 1 and 2 according to the Von Bertalanffy Curve from SEDAR 32.

DR. REICHERT: Okay, just as a clarification.

DR. ERRIGO: Yes. No, these are length comps; these are centimeter bins on the bottom. This is proportion on the Y axis. In 2014 you see some smaller fish coming into the longline, which you don't see – in fact, if you looked at the length comps in SEDAR 32 for the longlines, back through the series, you actually don't see these sizes very much at all except in the years where there is a lot of recruitment.

I don't know if that really says anything or not, but the longline does tend to select for larger fish, and you are seeing smaller fish here; so maybe there is an abundance of smaller fish. I'm not sure what that means. It may not be anything, they are kind of small, but they're there. You don't see the big large fish in 2014, but that could be because in 2014 the commercial season was cut short in the South Atlantic due to the closure; and the number of trips is very, very much less.

Here is the length composition by sex for the longline fishery. I was only able to get it for 2012 and 2013, but you will see here for the males there is that second bump, so that is what that is in those previous length comps. That second mode is large males. That was just to explain that. Someone here asked me about it, so I figured I would check to figure out why those looked that way.

Here are the handline length comps. They don't have a lot of the smaller fish in them at all. You'll see that they are almost completely south of Hatteras. Two trips in 2014 were sampled from Hatteras north; everything else was south of Hatteras for the handline fleets; but there is those length comps.

Here are the MRIP length comps. There is a very large bump in the small fish in MRIP. Most of those are south of Hatteras here; but there they are, and they are pretty small, 33, 34, 35 centimeters. According to the data and the Von Bert Curve, they are probably Age 1 to 2 fish, but they don't necessarily have to be. There is some evidence that there might have been recruitment in 2012.

However, when the projections were being done, the Center did look at some age comps from the recreational fishery. I assumed those were from the headboat sector, because I don't think we get any from MRIP. These did not show up in those age comps or there were very few of them, very few fish sampled; but still these didn't show up.

But there is a very strong signal in the length comp so, of course, it is that divergence in signal, which caused us to drop the length comps in SEDAR 32 in the first place. But there they are in 2012, a big signal and small fish. I just explained here less large fish in 2014 that we saw in the longline length comps could be due to that low ACL and the shift in the landings – not in the fishery, but the landings shifted from the South Atlantic up into the Mid-Atlantic, because there was a closure down here.

In 2012 and 2013, longline and MRIP have a rather full range of sizes. This is one of the things that suggests – and the longline fleet especially is fishing from Hatteras and north; and most of the landings are coming from the longline fishery. This is one of the pieces of information that suggests that perhaps they are not fishing on such an awfully depleted stock if they are able to find fish, especially these giant males of such a broad size range.

You figure if a fishery is heavily depleted as the projections show, especially the larger fish wouldn't be as available as they seem to be here; but then again that is just speculation. Again, there is some truncation in 2014, but the season was cut short. There also seemed to be larger fish from Hatteras north.

If you look at MRIP and the longline length comps and compare north and south Hatteras, you are going to especially do it in MRIP, because there are significant numbers of trips north and south of Hatteras. You'll see less of the small fish north of Hatteras. In fact, in MRIP you don't really see any of those little fish.

Here is north of Hatteras and those little fish are almost missing. South of Hatteras you've got that huge spike over there. This is just going back to say maybe there might be evidence of recruitment. That 2012 MRIP length comp shows that nice big spike there. Of course, that is a length composition not an age composition, but they are pretty small fish and there are quite a lot of them.

I also said that they are missing from the age comps examined in the April 2014 projections. I assume those are only headboat ages, because I'm pretty sure we don't get otolith samples from MRIP. Some indication of some smaller fish starting to appear north of Hatteras in that longline length comp; so it is small but, of course, longlines selects for larger fish according to the information we have from SEDAR 32. The fact that we're seeing any of those smaller fish in the longline fleet is interesting, to say the least.

That is pretty much all I have. Here are some questions to consider that relate back to the terms of reference. Have any of the assumptions made in the assessment or for the projections – assumptions made in the assessment that carry forward into the projections or any of the assumptions made for the projections themselves been violated in terms of the landings, the assumed landings, assumed levels of recruitment, projected biomass F value feasible given that the landings have been so high. Are the assumed levels of recruitment in stock productivity

appropriate given that there is evidence that there might be some recruitment in those length comps, and that the level of landings have been sustained pretty high over the recent years?

Given the uncertainties in the updated information, are the last sets of projections still the appropriate information for setting catch level recommendations for blueline? Then given the uncertainties in updated information, what projections or what information would be appropriate for setting catch level recommendations for blueline? That is basically your terms of reference there, for the most part. That is all I have. I would be more than happy to try to answer any questions I can. I have some ancillary information that I used to create the presentation if anyone has questions.

DR. BARBIERI: With that, I am going to open the floor for questions from the committee.

DR. REICHERT: Mike, looking at the Von Bertalanffy Growth Curve, those 60 centimeter males can still be 3, 4, 5, 6 year old; I mean, they can also be over 35; but there is a lot of variability even in those larger males. That may be important in terms of recruitment that it is not necessarily true that those fish were spawned decades ago.

DR. ERRIGO: Right; just because those fish are big doesn't mean that they are terribly old. Right; it is hard to make inferences unless you have more information. I was hoping that if I at least showed the smallest fish, hopefully most of them would be young. But, of course, given this much variation, even at 350 millimeters you can get all the way out to nine or ten years old at 350 millimeters, which is pretty amazing.

DR. REICHERT: I don't disagree with you. I just wanted to make sure because of the high variability in size at age that – anyway, I just wanted to indicate that.

DR. ERRIGO: Right; and the other thing is that even based on the information that we had at SEDAR 32, fish from the northern parts, like from Virginia, seemed to be older at a given size, like the Virginia information, so a 400 millimeter fish would tend to be a bit older if it was north like in Virginia than if it were caught, let's say, off South Carolina; according to the data that we have. Then, of course. If you just run the Von Bert Curve, I'm not sure exactly how far off they are. If you look at the data, it is obvious. You can see the difference. The Virginia data is shifted a little to the right.

DR. GRIMES: I have a comment. If I remember from the SEDAR 32 assessment, this discussion about variability in size at age, some of that is probably aging error. My recollection is that when they look at agreement between ages, it wasn't very good.

DR. ERRIGO: It was not; I did double check on that as well. The percent difference got up pretty high, almost up to 20 or more percent in some cases. There was a lot of aging error between regions or between labs, anyways.

DR. BARBIERI: Okay, folks, any additional questions for Mike before we get started on discussing more specific action items? Hearing none; I would like to draw your attention to Page 5 of our overview document. We have our action items listed. We have reviewed the discussion points in Mike's presentation, an overview of some of the issues.

We are being asked to review the blueline tilefish projections, identify uncertainties and discuss the impact and projection results in fishing level recommendations in management; determine whether the projection assumptions were met; issues such as interim year landings as well as comments on the consequences of this determination for fishing level recommendations in management.

Then evaluate, of course, given some additional and new information has come to light, whether those projections can still be considered the best scientific information available and whether they are still adequate to support fishing level recommendations for the council or whether some of the assumptions did not hold, scenarios were not met; and despite the high technical level of care put into those projections, perhaps the data inputs did not pan out as expected and things had a different outcome.

Anyway, with that I am going to open up for discussion. We can start from the top and come down if anybody wants to jump in and talk a little bit about the uncertainties and some of the assumptions. Amy, you were raising up some points and I cut you off to see if Mike could finish his presentation. Would you like to bring those up now?

DR. SCHUELLER: I'll just say what I think about all of this. Based on the methods that are used, I don't see any reason why these projections wouldn't be considered best science information available. They meet the assumptions of the projections as well as any other projections that are done for any other stock assessment.

There isn't anything glaringly different here from another assessment that would cause concern. The one thing is that the landings have been over what was "guestimated" to be the landings for those intervening years; but that is not a science issue; that is a management issue. I guess I fall in line with there doesn't seem to be any problem here scientifically. It again falls into the management realm just like the assessment discussion we had a couple months ago.

DR. BARBIERI: Any comments or reactions to what Amy just brought up?

DR. REICHERT: I have a quick question mostly to refresh my memory. Was one of the assumptions the percentage of landings from north of Hatteras, because in the assessment that was a relatively small percentage? In further years that did not hold true. Didn't that affect estimates and projections?

DR. BOREMAN: I had the same comment. I think that the 2013 landings north of Cape Hatteras were unexpected in the projections that were made.

DR. BARBIERI: Yes, good point.

DR. REICHERT: The percentages of the landings geographically did not hold true any longer, if I remember.

DR. SCHUELLER: Can I add to this conversation? First of all, there is no spatial component to this model; so there wouldn't be north of Hatteras, south of Hatteras. It is based on fisheries. Proportions would be allocated by fisheries using some sort of overall selectivity. Has that changed; I don't know. I think that it changes for every set of projections that I've ever done,

because we don't always anticipate management well. This is a topic of concern across not just this species, but all.

DR. BOREMAN: But we've already learned today that the ACLs – based on the ABCs, ACLs were set in the commercial fishery at least and those ACLs only represent south of Hatteras and don't represent north of Hatteras. When the fishery was shut down, it was based on the catch south of Hatteras and not north of Hatteras.

DR. SCHUELLER: But, John that is still a management issue in my mind.

DR. BOREMAN: I understand what you're saying, but what I'm saying is they have a basis – the ACLs are based on the ABCs and the ABCs are based on the projections.

DR. SCHUELLER: Yes, but the projections are still based on the coast-wide population. That is what we talked about in April, the stock assessment represents the entire Atlantic Coast; so whether or not they place management in south versus not – I don't know, I'm not sure I am following your argument.

DR. BARBIERI: Amy, going to the actual projections that are provided November 2013; I think one good thing could be for us to go over those. There are some comments at the bottom of Page 4 and continued through Page 5. Those are the caveats for issues that come up regarding projections in general.

There we have in general projections of fish stocks that are highly uncertain particularly in long term, greater than three to five years. Although those projections included instances of uncertainty, they did not include structural, i.e. model uncertainty; that is projections results are conditional on one set of functional forms used to describe population dynamic selectivity of recruitment, et cetera.

Fisheries were assumed to continue fishing at their estimated current proportions of total fishing effort, using the estimated current selectivity patterns. New management regulations that alter those proportions of selectivities would likely affect projection results. I think what Marcel and John Boreman are bringing up is this fourth bullet where new management regulations have altered those proportions of selectivity.

DR. SCHUELLER: I realize – trust me, I do projections, I've written those same statements on my projections. I lost my train of thought here. That is true, but I think that even given that, generally the uncertainty surrounding that still encompasses what our expectations are. I guess my thought is, okay, maybe the individual runs aren't great, but overall that envelope still stands; especially given that this assessment had two other model structures within two other model structures. It seems like it is robust. I still say that this is true for every single assessment that comes across the SSC's desk.

DR. BARBIERI: Right.

DR. BOREMAN: Well, yes, you can set up an uncertainty. You can have enough uncertainty in the assessment that it will cover all possible outcomes. You've got to draw a line somewhere. I

understand what you're saying, but in this case there is a lot more uncertainty out there than I think was originally expected based on hindsight now.

DR. BARBIERI: Amy, I think I agree with John. I think that one of the issues – and we all know this – is the problem with projections in general is that you are, of course, making some assumptions about the future and whether those assumptions will hold or not. I don't think that this discussion about projections reflect really on the quality of the science being done at the Science Center or the amount of care that was supporting to those projections. It is really 20/20 hindsight. All of us have to make assumptions at times, and then eventually we look at how the future actually turned out to be and now we can look back. We have data since 2011 and there have been some shifts in the fishery that none of us could expect.

DR. SCHUELLER: Okay, so I guess what I'm hearing is there is more uncertainty. Does that mean we're moving towards increasing the buffer given that we think there is more uncertainty than what is portrayed in the projections?

DR. BARBIERI: Well, no, I don't think that is the case. There is a reason why the Center has those comments on projections that are presented; why are those put there?

DR. SCHUELLER: I'm not sure what you are getting at, Luiz. They are standard assumptions so that people can realize that the decisions they are making are based on those assumptions and make decisions accordingly. Yes, okay, where are we going? I've heard increased uncertainty, which would mean increased buffer or the other alternative is why this isn't best science information available? Then what is the way forward then?

DR. BARBIERI: Well, this is part of what we need to discuss, yes, you are right. If this doesn't hold any longer, given changes that none of us could really have predicted – and I think that when you put those caveats or sort of disclosure statements on the projections basically – and I think that this was very transparent.

It came across to me very transparent that you're saying, listen, here are those projections. But, yes, when we look into what happens into the future, things may turn out somewhat different than what is being projected here; because we don't know if all of the assumptions are going to hold.

DR. SCHUELLER: Okay, Luiz, maybe a way forward is to request new projections with 2012 and 2013 set up the way they were; and then 2014, I assume there is data on the proportion of the fishery that has been north of Hatteras in the past versus 2014 – use that information to adjust that proportion and put the 2014 landings in. We do that that is better; the outcome is still that the ACL needs to be lower, I assume, based on experience; but I just throw that on the table. We could request projections that modify that 2014.

DR. BARBIERI: All right, folks, any comments there or reactions? Amy put a discussion point for the committee to provide some input on. Amy, if I understood you correctly, it is like, well, we are going to potentially rerun the projections using the actual landings.

DR. SCHUELLER: Right; and use a proportion of – so if the fishery proportions have changed in 2014, use that information to inform the projections.

DR. CROSSON: I think I'm with Amy on this. I don't understand if we just stated in the April SSC meeting that we felt that the increased landings in the Mid-Atlantic Region were just because the stock shifted further north, then I don't see how we get out of this without – I mean, I see the problems with the projections as they exist right now, and I understand the uncertainty that went into it; but it seems to me that we would be required to set a larger buffer until there is further projections that incorporate these new landings.

DR. REICHERT: Scott, you said that fish shifted north or did you mean to say the fishery shifted north?

DR. CROSSON: I'm looking at our April report; and we stated in that, unless I'm misreading it, the perceived higher fishery productivity north of North Carolina does not seem to be due to a different stock but rather a shift of landings. In other words, it is more jurisdictional than scientific or biological. That would mean that it is the – I'm sorry, your question was the stock or the fishery; it would be both, right?

DR. ERRIGO: Can I say something real quick? I see this bit of a conundrum going on. I just wanted to add this and maybe it might help with some of the discussion. It seems to me that you are right; if you just update the landings with the corrected landings, since it is stock-wide anyways, and you just put in the correct landings and this and that and redo the projections, it will show that the Fs are going to be much, much higher than what was projected, spawning stock biomass will be much, much lower, and the projected ABC values will be much, much lower; and that is what will happen.

But I think you need to ask yourself – I mean, you guys did decide that SEDAR 32 was best information available. That is what you guys had for blue line. That is not a spatially explicit model; but you decided that although it wasn't spatially explicit, it was still okay to use for management.

However, the uncertainties that are coming forth from SEDAR 32 to the projections that have to do with the spatial components of the fishery itself; are the projections still dealing with those okay or not? Basically there are two scenarios I see that are happening, but the projections are only giving you one of them.

Once scenario is you've got this coast-wide stock, you're fishing on it, you have really high landings, and you're going to have a really high F, you are really pushing this stock way down, the spawning stock biomass is going way down; and it is basically what the projections are showing you.

But the other scenario, which is not being shown by the projections, is that when the fishery shifted spatially north from where it was, it shifted to an area that had a much higher abundance or productivity or whatever of blue line that was unable to be picked up by the model. When it was carried forth into the projections, the projections didn't see increases in biomass or recruitment or whatever.

But the fishery is fishing on a much higher abundance, a sub-population with a higher abundance; but the projections aren't showing that because that is not the scenario the projections were set up to show. I guess you would have to decide which one is most likely; and

if either one is equally likely, or if the second scenario is more likely, then the projections aren't really viable unless you don't agree with that and then in which case they are viable; and then you can either update the projections or leave them as they are. That is the only way, you know, because our 32 is best available; that was decided. Arguing about management isn't really going to help; because Amy is right, the science is the science.

DR. BARBIERI: Right; and I was looking for the presentation that Kevin gave at the last SSC meeting, because I think it is critical to know how much the landings have changed; just in estimating the landings location which was my takeaway from Kevin's presentations that the fishery was still operating in the same places primarily.

DR. ERRIGO: Right; so currently the longline fishery is still operating in the same place that it was at the end of SEDAR 32, but I actually can tell you when it shifted if you give me a second.

DR. BARBIERI: While you look at that, I'm thinking about John Boreman's question earlier about did the longline fishery shift north or expand north? Your answer was that, yes, it shifted north.

DR. ERRIGO: Well, started in 2006 almost 60 percent of the landings from the longline logbooks were coming from north of Hatteras; and then by 2007 over 80 percent and almost 90 percent – 85 percent of the landings were coming from north of Hatteras. It has remained above 80 percent; in fact above 85 percent since then; from the longline logbooks.

DR. BARBIERI: Is this something that you can put up on the screen of the webinar for us to look at, Mike?

DR. ERRIGO: You guys actually have this from the last SSC meeting; but I can, yes.

DR. REICHERT: Mike, I was looking at the document; do you have like a number?

DR. ERRIGO: I did not put numbers because that data is confidential.

DR. REICHERT: Or the name of the document?

DR. ERRIGO: It is the BOT Trips; so this is the percentage of the landings from commercial longline trips that had any landings of bluefin tilefish. Blue is Hatteras north; red is South Atlantic. These are South Atlantic logbooks.

DR. BARBIERI: By South Atlantic, you mean Hatteras south?

DR. ERRIGO: When I say South Atlantic, I mean below 35 degrees latitude, so below Hatteras.

DR. SCHUELLER: Based on this figure, you are showing most of the trips north of Hatteras from 2007 onward; so those proportions would be the proportions used to deal with the selectivity, et cetera, in those projections, anyway. According to this figure, I don't know that I'm concerned about that.

DR. BARBIERI: Right; because if the terminal year was 2011 –

DR. ERRIGO: Right, here is the terminal year. There wasn't a shift in where people were fishing after the terminal year. The issue is this carries on into the projections, but the assumption is that there is no spatial difference because it is not a spatial model. If you determine that there is a spatial difference and that it is causing heartache in the projections; that would be why you would determine the projections to not be appropriate, something along those lines.

DR. BARBIERI: Okay, any other questions or comments for Mike on that issue?

DR. ERRIGO: Just also as a reminder; I believe especially in the longline fleet blue line don't recruit to the fishery until ages 3 to 4. By 2011 you had maybe some information for 2007 and 2008, but no information about the rest of the years to the end of the fishery. Then before that, the fish were mixed or mostly from the South Atlantic. That is the longline.

I have handline, too. This is the handline fleet and it is more mixed, but a smaller percentage of the landings come from handline. But you see here for some reason in the recent years it reverses where the landings are coming from. That is what I've got for you.

DR. BARBIERI: Also, if you put Slide 14 of your presentation up there; because looking at this and trying to reconcile where we are now versus looking here from 1986 to about 2005, this fishery had been operating around 200,000 pounds.

DR. ERRIGO: Yes; it was also almost completely in the South Atlantic for the most part; I mean below Hatteras.

DR. BARBIERI: But then it has this big jump beginning in 2006.

DR. ERRIGO: That is when the fishery starts to transition north of Hatteras. This is 2006; this point here.

DR. SCHUELLER: Are we saying that we believe the assumptions in the projections are appropriately addressing this concern about landings mostly being north of Hatteras given that in the most recent years of the assessment that is reflected in that, anyway?

DR. REICHERT: For me the second part of your remark kind of disappeared. Can you repeat it, Amy?

DR. SCHUELLER: My statement was there was a concern about the assumption of the spatial change in the fishery; but given the data that Mike has up on the screen, that doesn't appear to hold true that the spatial breakdown was similar to what we've seen in the most recent years of the terminal year of the assessment. Therefore, the projections are using the appropriate information to project forward.

DR. CROSSON: I don't have an answer to Amy's question. Mike, could you again really quickly throw that Excel graph back up again? What was the terminal year for the SEDAR 32?

DR. ERRIGO: Right here, 2011. This goes only to 2013, so this point here is 2011.

DR. CROSSON: Those landings are in SEDAR 32?

DR. ERRIGO: The landings are, yes.

DR. SCHUELLER: Coming back to my question.

DR. BARBIERI: I think this is the key question, Amy. John Boreman, you mentioned something about the fact that there has been new information about landings that has changed since the assessment.

DR. BOREMAN: Yes, I'm talking about the magnitude.

DR. BARBIERI: You're talking mostly about what happened in that Slide 14?

DR. BOREMAN: Yes. I'm having a tough time following all the lines of logic, to be honest with you, that I'm hearing.

DR. SCHUELLER: Can I restate mine, maybe clarifying? In the projections were the selectivities and landings; things that are allocated based on what was occurring in the assessment; and the concern I was hearing was that there is a shift north and therefore the projections aren't picking up on that. However, given what Mike showed on the screen, the landings were north. Therefore, that would have been picked up and projected forward, therefore alleviating that concern. Does that help, John?

DR. BOREMAN: I'm looking at 2014, the ACL somewhere – I'm looking on what is on the screen now. The ACL is somewhat above 200,000 pounds WW. Looking at the landings; recent landings are somewhere around 500,000. Now with that difference, I can't believe that we can pass the red-face test to say that the projections were spot on.

That goes back to the original question I think that Ben asked at the SSC meeting is why not? How could we have actual landings so much higher, two times or more higher than the projections? What is broken here that needs to get fixed? I am not disagreeing about the assessment. I agreed with the wording that is in the report.

At the time the assessment was done, it included the range of stock that included north of Hatteras. That was all within the range. It is just that the character of the fishery has changed, and obviously it changed in 2014. That is what we need to deal with; and when you do projections, you have to take into account management – that is all part of it – what we predicted the catch would be in future years and what the actual catch is.

Whether it is a management action or not on ACLs, it is still important when you're doing projections to determine how management is going to affect the future catch levels. I'm still hung up on this why are we looking at a catch in 2014 that was not significant – I mean more than significantly higher than the projections at that time? If it is all within the realm of uncertainty, well, that is a different argument, I think.

DR. SCHUELLER: But, John, the landings are fixed in each year in the projections.

DR. BOREMAN: They are fixed based on anticipated management.

DR. SCHUELLER: Yes, so that is why they don't match. If management said, okay, we're going to put the ACL at 224,000, whatever the units are, but no landing actions –

DR. BOREMAN: Well, there are a hundred people on this call. It shouldn't be down to just Amy and John having a dialogue here. I wish other people on the SSC would speak up and weigh in on this. I may be totally off base; Amy may be totally off base, but who knows? We may be both agreeing and not even know it.

DR. SCHUELLER: I wholeheartedly agree, John; I would like to hear other people, too.

DR. ERRIGO: To give some perspective; the current landings that we're seeing for 2013 and 2014 are higher than what were in these November 2013 projections here, which means these F values are higher than what these projections are showing. Those actual values were 1.5 and 3.17, which means they are probably over 2, this one might be over 4 and possibly even over 5.

DR. BOREMAN: Mike, what is the natural mortality rate used in the assessment?

DR. ERRIGO: Roughly 0.2-something, I think.

DR. BOREMAN: Okay, so rule of thumb is set F equal to M; so F is more than just a little high here.

DR. ERRIGO: Does everyone think it is feasible that the fishery is fishing at an F that large? I don't know if I've ever – that is a pretty big F; I don't know.

DR. BARBIERI: If we scroll back Mike, Slide 9; those were the projections originally done?

DR. ERRIGO: Yes.

DR. BARBIERI: But they were corrected; they were adjusted to Slide 10.

DR. ERRIGO: This is what we ended up with.

DR. BARBIERI: Right, and what are –

DR. ERRIGO: The red is the actual landings here. This is the projected.

DR. BARBIERI: The values of F that we are dealing with are that 1.9 and 1.3 that were like in the table on Slide 3?

DR. ERRIGO: Yes; the projections that were currently being used, right, 1.95 and 1.29 are right. That is what we're currently using for ABCs; those are the current ABC projections. But the landings that we have are higher – in 2013 and 2014 are higher than the November 2013 projections used, which means F values would be higher than this. Well, if you still use the same 2013 MRIP website landings, that should be the same; but the 2014 landings are even higher than this. We'll go from 1.95 and then it would probably go – yes, it would be quite high.

DR. REICHERT: I believe the natural mortality point estimates in the assessment was 0.1.

DR. ERRIGO: Thank you, Marcel; I appreciate that.

DR. REICHERT: I think this goes back to the issue that we discussed I think even way back is what some people thought was an unrealistic estimate of F.

DR. ERRIGO: That was the impetus for asking for revised projections after those initial projections were done.

MR. CARMICHAEL: You have to remember it is not an estimate of F that is going to result. If you are to take those landings at that point of time given the terminal year when it was, so you don't have any information on age comps or anything in any of these recent year things that might inform the model to decide that something else is going on.

It seems that one of the earlier discussions about this was recognizing the spatial component going on and the thought that to deal with that the model was giving you some of the recent high recruitments; this was at the end of the assessment so some of those terminal year recruitments coming up kind of high as the model had to deal with this fishery moving into the new area; all of that happening at the terminal year of this assessment.

With an age of recruitment at 3, the last real estimated year class is like 2008; so you have all of these things coming together at the same time. The model was thinking then that, well, the way to deal with this fishery expanding north and seeing these fish is to put in these higher year classes.

We have to consider that has gone on for the current time for another several years; so to me this kind of hinges on how do we feel about that whole problem? We have a model which potentially explaining shift in area using the only means it has; and it has got a terminal recruitment estimate really of like back in 2008.

There is a lot of water under the bridge in this fishery fishing on 3, 4, 5 year old fish, a lot of those fish are just in the projections, they are just paper fish at this point. They could be more or less abundant, we don't know. Luiz, do you want to go back to the terms of reference?

DR. BARBIERI: Yes, let's go back to our action items, which will actually explicitly get at some of the questions that Amy was trying to revisit. We have discussed some of the uncertainties and assumptions associated with the projections. We are in the process of discussing consequences of this on the fishing level recommendations and management. We still need to get to the bottom of whether the existing projections still hold as far as being used to provide the council with fishing level recommendations.

That basically is what it means by it being best scientific information available is they can be used for management advice and whether the committee has any guidance for revised projections in case new ones are necessary. Amy, let me put you on the spot since you presented some points of view here; can you summarize in general your impressions then about those action items there in general?

DR. SCHUELLER: My thoughts are I don't see anything here that warrants not using the projections now. Personally I think that these are fixed-landings projections; so the fact that the actual landings are above the fixed landings in the projections; that is just a matter of what occurred in the past. It is not because the projections are broken.

I also feel that the projections do reflect the fishery being more northern given that in those later years in the assessment that is included. I guess I don't see anything that makes me concerned. I feel like the document the Science Center provided stated all that pretty clearly. I don't think anything was brought up on this call that changes my perspective on the situation.

DR. BOREMAN: Amy, you're saying the projections are calling for Fs in the order of between 1 and 2, and that is okay; or are you saying the Fs, if they are true and actually that high, then we need to rethink our ABC recommendations or what?

DR. SCHUELLER: Yes; I am saying if the Fs are that high, maybe we need to rethink our ABC recommendations. The recommendation is for that ACL that was put in; that gives an F much lower than what the actual landings provided. Landings drive F, not the other way around; so that is the piece we can control.

MR. CARMICHAEL: Landings and abundance. What if our abundance is lower?

DR. REICHERT: That was the point that I was going to make. Please correct me if I misunderstand something. Based on the level of landings after the terminal year of the assessment, the blueline tilefish by and last – and I think it was in particular north of Hatteras was higher than assumed in the model, or is that not the case? That may be the new information that perhaps is linked to those high F levels and that ultimately affected or is affecting projections; correct, or am I missing something?

DR. BARBIERI: No; that sounds right, Marcel. I agree; it is something that the model was looking at some level of abundance; and as Amy said taking those landings into account; so the fishery continued fishing into some spots that had high densities or high abundance, and that higher abundance is not being accounted for properly; so, of course, it is showing that a proportion of the stock being taken out is much higher than –

DR. SCHUELLER: I'm sorry, what higher abundance? Keep in mind landings don't indicate changes in abundance. Things that indicate –

DR. BARBIERI: Right. Amy; indices of abundance north of Hatteras were they taken into account into this assessment?

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

DR. ERRIGO: No, they were not.

DR. GRIMES: Well, the CPUEs north of Hatteras were not used, but then there was a sensitivity analysis, right, Amy, to deal with whether or not that made a lot of difference; is that right?

DR. BARBIERI: Amy that is my point. My point is maybe there were areas where the stock was abundant; and if that abundance up there was properly captured and represented by the indices south of Hatteras, then we should be all good.

DR. SCHUELLER: Yes; I agree with that and given that we said in April that the stock assessment does reflect the population coast-wide abundance; that we've made that statement already.

DR. BARBIERI: Yes, we did.

DR. BOREMAN: We said it did in 2012.

DR. BARBIERI: Yes, or up to 2011, the terminal year of the assessment. This is the point, Amy, is I was trying to understand how much things have changed. This is why I was trying to track back that presentation Kevin gave at the last SSC meeting, because I thought that was informative in a way for us to see whether removals up there had increased; you know, the proportion of removals up there had increased and if they were coming from the same area or different areas.

DR. SCHUELLER: When everybody is talking about abundance, my thought is if I wanted to know what abundance was doing, I would update the indices that were used in the stock assessment. We haven't seen that. We've just seen time series of landings. But landings; you know, some fisheries maybe it matches up with what is going on in abundance if it's – let's say the recruitment during the fishery or something, but in others it is not, especially when it is a long-lived species. Looking at landings to give you an indication of what is occurring on abundance can be a huge problem.

DR. BARBIERI: Right, no doubt about that would be the case. We're just wondering whether abundance north of Hatteras has been appropriately indexed so the proportion of removals from the total population abundance is well represented into those projections or not. We don't have the indices up there; the only thing that we can see are the landings.

In a way I am not sure we're going to be able to get to the bottom of this; but I have to agree with what others have brought up; that there seems to be a disconnect between what is available in the population for removals and what the outcome of the assessment or the projections are telling us.

DR. CROSSON: If that is the case, Luiz, do you have a proposal for an alternative recommendation for an ABC and should that include anything that includes these landings that are in the Mid-Atlantic jurisdiction?

DR. BARBIERI: Well, I don't think that we are at that point yet, Scott – I mean I'm not. Basically I am just trying to see are these projections capturing really what is going on and in a way that we can continue using them for management advice.

DR. REICHERT: Luiz, I am looking at Kevin's presentation from the last SSC meeting. What information in particular were you referring to earlier?

DR. BARBIERI: Well, for the different fleets.

DR. REICHERT: I'm sorry, say that again.

DR. BARBIERI: If Kevin's presentation have any information on the different fleets or just a particular fleet?

DR. REICHERT: I'm looking at it right now and updated landings are by fishery. Recreational projections –

MR. CARICHAEL: Luiz, Jason had raised his hand with some information about the area landings. Do you want to call on him? Jason Didden.

MR. DIDDEN: Jason, Mid-Atlantic Council staff. I just wanted to flag one thing that we've kind of thought about a bit. When you look at the proportions of landings in some of the different areas, whether it is north or south of Hatteras, or looking at some of the stat areas from the BTR information that Kevin did; I think one thing we flagged in some of our communications with NMFS is that masks some of the scale of the landings.

When you look at the magnitude of landings in the areas off of DelMarVa in 2014, it is about 32 times higher than the 2001 to 2013 average and about 24 times higher the 2007 to 2011 average, which is that period when in one of the slides from today that you had earlier, you had that 2007 to 2011 shift to the north that you indicated that the assessment picks up.

It is one thing we've tried to flag. Yes, from a proportion point of view; yes, you kind of see that; but from a magnitude point of view, again you're talking about, depending on the timeframe you're looking at, 20 to 30 times greater in 2014 than was either seen historical or in the final years of that assessment. Kind of keep in mind the proportion issue and the magnitude issue may be something to consider.

DR. BARBIERI: Jason that would be for all the fleets combined, right?

MR. DIDDEN: For me it is just looking at the distribution of the VTR catch, which is just going to be the folks who have northeast permits.

DR. BARBIERI: Those permits, VTR, is this commercial or both commercial and recreational?

MR. DIDDEN: This is going to be just anyone with any northeast commercial permit. We saw with the party/charter folks, most people would be fishing out there probably again not all recreational. Those party/charters are going to have a permit that requires reporting. You've seen a similar scope of increase off DelMarVa.

It has really ramped up, not just 2014; it was more 2012, 2013, and 2014 being either – again comparing – I didn't do it – but a couple times higher than 2007 to 2011. If you include going back to, say, 2002 to 2011, I don't know probably at least an order of magnitude higher than the average. You see a similar trend, but it appears to have started earlier. I think that the coverage with the for-hire VTR and given the low participation, it is going to be a little trickier drawing and not drawing firm conclusions out of that; but it shows the approximately similar trend.

DR. BARBIERI: Okay folks, there is some additional perspective on perceived changes in the fishery, the magnitude of recent removals in areas north of the South Atlantic jurisdictional area that suggests changes in the fishery that may not have been properly accounted for in the projections. Amy, do you have some thoughts about that to help us think about it?

DR. SCHUELLER: I guess my question is if we assume that this assessment represents coastwide, let's think about it in terms of another way. If we have an assessment for another species and the landings moved from Florida to North Carolina, what would we do?

DR. BARBIERI: Say it again.

DR. SCHUELLER: Think about this in another way. If we had another assessment for another species and we had the landings and they moved from the bulk of them being in Florida to the bulk of them being in North Carolina; what would we do in that situation? That is the question here; the question is if we have a coast-wide assessment and landings move from one area to the next – that is the question. If we had landings that moved from Florida to North Carolina; what would we do with those possessions?

DR. BARBIERI: Right; and again, Amy, I think it also depends on our measures of abundance. I see your point, but the problem to me is how much we are able to capture abundance of the stock in those northern areas.

DR. BOREMAN: To me the answer to Amy's question is it depends on the assumptions you're making in the projections to start with. If your projections were based on the assumption that the fishery wasn't going to move north or wasn't moving north, then that would be one thing. If the assumptions are that the fishery is moving north and shifting, well, that would lead you in a different direction. I don't know how relevant that is to what we're doing here. The relevance I guess comes down to it all depends on what assumptions you're using in your projections and how true has the fishery lived up to those assumptions?

DR. SCHUELLER: What is everybody's recommendation? It sounds like we're going down the path of saying the projections aren't useful. What is the recommendation then to move forward from that?

DR. SMITH: Amy, would it be useful if we had some information to compare the characteristics of these fisheries north and south of Hatteras; I guess that is the one thing to answer the question you proposed in your analogy. That would be the first thing. I guess I would want more information before I could answer the question. The first thing I would want to know is if the characteristics of the fishery are different, in particular things that might change the selectivity pattern. I wonder if we – I don't know if it is too late to ask for that information, but that would sure help me with this question.

DR. BARBIERI: That makes sense.

DR. CROSSON: I'm looking at our terms of reference. I am looking at them in order of the Action Item 3.3. Have we already done Items 2 and 3 basically by – we're talking about all these different uncertainties and we're talking about their impact on the results, right? I'm just

trying to think where we can make some progress in these terms of reference without keep going in circles.

DR. BARBIERI: Go right ahead, Scott.

DR. CROSSON: Looking at this, we talked about – I'm just trying to think where we can make some progress here. We've identified some of these different uncertainties, right, the uncertainties of whether the north of Hatteras landings was adequately incorporated into the projections. This is something that lots of us keep getting hung up on. There is a difference between north of Hatteras landings and north of the council's jurisdiction's landings; is that correct?

DR. BARBIERI: Yes.

DR. REICHERT: That is a good point. Perhaps it is good to remind us of you've got the South Atlantic and then you've got the Mid-Atlantic jurisdiction, and then there were landings north of that that did not fall under any regulations; correct?

DR. CROSSON: That is what I got from Mike's presentation. He kept talking about north of Hatteras; but he is still talking about in the South Atlantic Council's jurisdiction to a degree, right?

DR. BARBIERI: Yes. To a degree. Mike; jump in to clarify if you can.

DR. ERRIGO: Okay, first of all, any place where I might have marked like South Atlantic; I think that I was referring to south of Hatteras and then north of Hatteras, and that is only because you see a shift in where people are fishing and at the exact time you see that shift you see the increase in the magnitude of the landings.

They shift north of Hatteras and then the magnitude of the landings increases by quite a bit. That is why I looked at it as north and south of Hatteras; but there is a very big difference if you were looking north and south of Hatteras and if you are looking north and south of the council's jurisdiction lines at the North Carolina/Virginia Border. That is not what I was looking at. I was looking at north and south of Hatteras.

DR. CROSSON: There is a difference; so when you are talking about including Mid-Atlantic jurisdiction or stopping at that border?

DR. ERRIGO: No, including the Mid-Atlantic. The length comp and things like that, I do not have anything from the Mid-Atlantic. It is only South Atlantic information. The length comps are TIP data. TIP data is only from the South Atlantic; and the logbook data, so all those longline and handline fishing vessels, the commercial vessels; those are South Atlantic logbooks.

It had nothing to do with the Mid-Atlantic. But the landings, I included Mid-Atlantic landings in the total landings on some of those graphs that I got from the Mid-Atlantic, and those include Virginia north. I tried to differentiate by saying Virginia north if that is what I was talking about. But any of the length comps and the shift in the fishery from below Hatteras to above Hatteras and all that; from the logbooks vessels that is all South Atlantic information.

It has nothing to do with the Mid-Atlantic. I don't know what happened in the Mid-Atlantic during any of the time period. We got some of that information from the Mid-Atlantic, from Jason Didden actually, the VTR data, but that is not included in any of that.

DR. BOREMAN: Now, Mike, just to be clear, because from now on I am really getting lost in this logic. The graph you showed, I think it was from Kevin's presentation on the longline, the commercial longline, the shift that occurred around 2007 where all of a sudden most of the landings were coming from north of Hatteras; that is still south of the Virginia/North Carolina Border?

DR. ERRIGO: Yes; those are all South Atlantic vessels.

DR. CROSSON: Thank you for asking that question, John. That is what I thought as well and I was getting confused.

DR. ERRIGO: For South Atlantic data information, we were fishing south of Hatteras for the entire time series for the most part; then all of a sudden shifted north of Hatteras for some reason; and the landings shot up exponentially.

DR. CROSSON: But still within the South Atlantic Council's jurisdiction.

DR. ERRIGO: Well, they are not necessarily fishing in the South Atlantic Council's jurisdiction, but they are landing in the council's jurisdiction. There are people who are turning in South Atlantic Council logbooks, southeast logbooks, so they have southeast reef fish permits or snapper grouper permits.

DR. BARBIERI: Mike, to Jason's point that there is a 20 to 30 times higher magnitude of landings north of the Virginia/North Carolina Border in 2014 than historically; we haven't seen that in your presentation.

DR. ERRIGO: No, I tried to show that – you know, you saw some of that weird truncation in the length composition data and all that; and that is because the fishery in the South Atlantic was cut short, but they continued to land in the north. The thing is that there is some overlap. There are some guys who fill out both northeast VTRs and southeast logbooks. There is some overlap but I don't know how much because I don't have any of their data. I only have ours.

DR. BARBIERI: Well, I think that this is a pretty relevant piece of information.

DR. BOREMAN: This is why the Mid-Atlantic Council does not consider the assessment that was done, the SEDAR assessment, relevant to management of blueline north of the Virginia/North Carolina Border. Obviously now it is even more clear to me that what is happening up there is just not being picked up.

MR. CARMICHAEL: You had the presentation from Kevin showed the landings by stat areas, and he had the figure that showed that there was that group of three stat areas from North Carolina up off of DelMarVa, where the landings had been coming from; and some years even as far back as 2007 there were a lot of landings from the northern stat area. Then they became more prevalent in the ones closer to North Carolina.

Then in 2014 largely everyone believes due to the South Atlantic's regulations you saw them shift back more into that 66 area. The discussion of this SSC in April was there seemed to be a shift in where fish were being landed, but it wasn't so much a shift in where fish were being caught.

DR. BARBIERI: To that point, John; how do we figure 20 to 30 time's higher magnitude of landings in 2014 up there?

MR. CARMICHAEL: I think you have to take it in the context of the South Atlantic putting on very strict regulations and mobile fishermen just deciding to land farther north to some extent.

DR. BARBIERI: Then my understanding is that you're saying, yes, the fish were coming from the same areas that they have been coming before; but now there is a huge amount instead of a smaller proportion of the total landings coming from that area; is that correct?

DR. ERRIGO: The proportion of fish being caught in the statistical area should be the same; but what is being landed in each of the different jurisdictions is different. South Atlantic landings pared down dramatically in 2014 but Mid-Atlantic landings went up dramatically.

DR. BARBIERI: I am just trying to understand Jason's statement about the various large increases in the magnitude of landings in 2014 up there. Jason, are you still there?

MR. DIDDEN: Yes, I had raised my hand. Again, the magnitude, that was from a locational area of catch, not landings; it was again catch off of DelMarVa. It is where the folks who are landing are indicating their catch is coming from. Again, it is not a change in area of landings but change in indicated area of catch.

DR. BARBIERI: Now for that figure that is there, Jason, hopefully you can see it –

MR. CARMICHAEL: Yes, this is the one from the SSC meeting that I felt that the SSC was basing a lot of its conclusion on, because you see the blue being this area, the red being this area. You see them sort of swapping places over time. Then when the regulations went in very strict in the South Atlantic, the red shoots up, the blue shoots down.

MR. DIDDEN: I think again the point I was trying to make while you see this, when this kind of swapping back and forth when you're looking at it based on a proportion, when you look at it in terms of magnitude, it is a very different story.

DR. ERRIGO: John, if you can share my screen, I think I have the graph that shows the magnitude.

MR. DIDDEN: What you had just up there; that was a different dataset; that was dealer data and not the VTR.

MR. CARMICHAEL: Yes, that is what I was thinking. Mike, which slide?

DR. ERRIGO: I'm sorry, it is not a slide; it is actually in the BLT Stats File that everyone got at the last SSC meeting under Mid-Atlantic commercial VTRs by area; a graph in actual pound whole weight for each of the statistical areas reported on the VTRs.

MR. DIDDEN: I think that may have been a back-up slide at your meeting last time.

DR. BARBIERI: Mike, you are still looking to put that up there?

DR. ERRIGO: My screen is not being shown; I believe it is John's screen.

DR. BARBIERI: There it is, but that is still percentage.

MR. CARMICHAEL: Is there a figure? You're thinking this one, landings by jurisdiction?

DR. ERRIGO: I'm sorry, the tab is further to the left – that is the graph.

MR. CARMICHAEL: This line, this Area 626.

DR. BARBIERI: So 626 is the blue triangle; yes, that is a big difference.

MR. CARMICHAEL: You saw maybe in 2007 it was a large proportion, but overall much lower overall landings, anyway. You put this in perspective you had, what, 400 and some thousand pounds total landings in this time period? This is 200,000, so a lot there, half of what the fishery was taking overall before it started getting ratcheted down.

DR. BARBIERI: Yes, and you can see the jump in that 626. Yes, to me it is a significant change in the way the fishery was operating or proportional removal is coming from.

MR. CARMICHAEL: That is basically this.

DR. ERRIGO: Right under 375,000 pounds in 2014, somewhere around there; total between the Mid-Atlantic and the South Atlantic.

DR. BARBIERI: Can you repeat that, Mike, please?

DR. ERRIGO: The total landings between the Mid-Atlantic and South Atlantic in 2014 is somewhere around 375,000 pounds.

DR. DUVAL: It was really more to clarify about the issue of VTRs. There is overlap in those statistical reporting areas for fishermen holding northeast and southeast permits. If there are fishermen in North Carolina participating in South Atlantic fisheries that also have a northeast permit; I think as both Jason and I stated at your prior meeting, those fishermen fishing in the snapper grouper fishery off North Carolina catching blueline tilefish still have to fill out a Northeast VTR even though they are fishing in the South Atlantic Council's jurisdiction for this particular species; so there is duplicate reporting that occurs.

DR. ERRIGO: Right; that is why we can't just mix the two datasets. We would have to look at them one at a time unless we were very careful about removing duplicates, which has not been done.

DR. BARBIERI: Well, SSC, we are kind of approaching probably the end of our timeframe for this webinar, and I know that this issue is quite complicated and getting all the different pieces of information lined up in understandable ways is not easy; but referring back to our action items or terms of reference listed really had a lot of good discussion.

I think that this latest set of information has been quite important on whether we're looking at that Bullet Number 4; we believe that those projections are still appropriate for providing catch level recommendations or management advice to the council.

DR. BOREMAN: Luiz, are you saying to the council for the portion of the stock in the South Atlantic or the entire coastal range; because from what I'm looking at, I can't believe that those projections are worthwhile north of Virginia/North Carolina Border.

DR. BARBIERI: In this case, of course, we are talking about the South Atlantic Council, John' but that is a good point. As the South Atlantic SSC, we consider the assessment to be reflective. That is explicit in our report whether the assessment reflects the entire distributional range.

My assumption would be, yes, the projections would also have to be applicable to the same geographic range covered by the assessment. To your point, yes, in this case it would be for the South Atlantic and the Mid-Atlantic areas, over the distributional range of the stock, including the assessment. Marcel, help me with that if you have things in front of you, but I think that –

DR. REICHERT: No, Luiz, I think you are right; we concluded that there was no additional information available that would make us reconsider the stock assessment, so the stock assessment is still valid for the stock definition as outlined in the stock assessment, which carries it north to where landings are reported.

As such, I believe that indeed the projections currently are for that entire area for the entire stock. I think you are right; therein lies I think the core of the issue that we are discussing. Part of that goes back to something that Amy said earlier is what is the information that we were not aware of earlier that may affect projections such as a biomass that was not considered in the assessment or landings after the assessment that resulted in values of F that we may or may not feel are realistic. Then that comes back to what decisions are based on science and what decisions are based on management. I think that Amy mentioned that earlier.

DR. BARBIERI: Well, but looking at that Bullet Number 4 under the comments on projections; I think this is like critical for us to address your questions or your points, Marcel. Fisheries were assumed to continue fishing at the estimated current proportions of total fishing effort, using the estimated current selectivity patterns. New management regulations that alter those proportions or selectivities dramatically affect projection results. Amy, what do you think in light of the information that Mike just showed; what do you think about that assumption?

DR. SCHUELLER: About the assumption about selectivity changes?

DR. BARBIERI: No; it is whether the fishery is still continuing fishing at their estimated current proportion of total fishing effort; so selectivity patterns, yes, but basically the exploitation, the proportion.

DR. SCHUELLER: How those landings get apportioned to each fishery. I haven't seen – I don't know, I guess I am not sure where we're at. I sort of stated what I think; others have as well. I am not sure where we're at at all at this point.

DR. BARBIERI: Well, we're looking at this latest set of information that was just discussed in terms of not just areas landed but the areas fished north of the North Carolina/Virginia Border and whether we consider that this change in the fishery was appropriately –

DR. SCHUELLER: I guess I don't change what I thought the opinion was at the meeting we had in April when Kevin showed the presentation by grids and things. I thought that the statement was, yes, landings are coming across the dock in different places but the catches weren't ultimately coming from different of places. If that is truly the case, then I guess I stand by what I've been saying on this call the entire time. If that is not the case, then obviously we do.

DR. BARBIERI: No, that is exactly it, and this is why the issue – I mean, to me this last graph that Mike Errigo showed, it was more reflective of changes in areas where the fish were being caught, different patterns in where the fish were being caught as a proportion of the total; those amounts versus where they are being landed.

My interpretation of that was that was that, yes, there have been catches up there for quite a while, but those catches coming from north of there used to be a relatively smaller proportion of the total; and that since 2014 they have become the vast majority of the total.

DR. SCHUELLER: I guess for me it would be nice if we were making our statements so that they were typed on the webinar so everybody could see what it is that our consensus is here or our majority, or whatever we have.

DR. BARBIERI: Unfortunately this is so complicated, Amy, I don't think we are at that point yet.

MR. CARMICHAEL: We're working on that.

DR. CROSSON: Can I ask a question, John Carmichael? On that point about higher landings in projected could result in lower future ACLs, if this SSC is stating that our ABC recommendation includes a stock that currently exists up the Atlantic Seaboard, and it is obvious that it incorporates the north of the council's jurisdiction area and the council's jurisdiction area together; that those landings are going to be greatly exceeding that ABC; does that mean that the South Atlantic Council would be required to shut down the fishery as soon as the ACL is met along the entire seaboard?

MR. CARMICHAEL: I don't know. They are required to shut down the fishery when the ACL is met. Are we already shut down in the South Atlantic portion?

DR. DUVAL: Yes.

DR. ERRIGO: Commercially we're closed. Recreationally we're not closed yet but we should be. We probably will be eventually.

MR. DIDDEN: NMFS is implementing the Mid-Atlantic's emergency request tomorrow for 7 fish recreationally and 300 pound whole weight commercially. We don't anticipate seeing the same scale of commercial landings in 2015 as we did in 2014 because of the implementation of those measures.

DR. REICHERT: Sorry, can you repeat that real quickly?

MR. DIDDEN: It is in the Federal Register preview phase right now, but NMFS will publish tomorrow the implementation of the Mid-Atlantic emergency request at 7 fish recreationally per person and 300 pounds commercially through the end of the year. We don't expect – it has started up the last couple weeks, and so it wasn't in time to prevent that. I am not quite sure what has happened so far, but we don't anticipate the same scale of landings like in 2015 as we had in 2014.

DR. ERRIGO: As a point of clarification, there is no ACL in the Mid-Atlantic, though, so it will just simply remain open under those effort control measures until management is implemented, right?

MR. DIDDEN: Yes.

DR. BARBIERI: Will Smith, you were asking for some information regarding the areas fished and areas landing and you are going to make some points. Have you had the opportunity to think about those thoughts and can you share them with us?

DR. SMITH: Yes, I guess I was wondering if – I can't remember from the assessment if we had length comps and age comps north of Hatteras, if those were available. That might tell us a little bit about this uncertainty regarding selectivity in the different areas. If the selectivity patterns seem pretty similar to what was in the assessment, I would be less concerned about the projections than if they were drastically different.

DR. REICHERT: I quickly looked at the assessment report and I don't believe those length compositions were split out, but I'm still looking at it.

DR. BARBIERI: John Carmichael, do we have until 4:00 o'clock to finish our webinar?

MR. CARMICHAEL: You have until however much time you need to take. Carolyn, you had your hand up at one point, it looks like. Were you trying to jump in?

DR. BELCHER: Yes; I was kind of in Amy's camp with the biology discussion. I was just now going through the data workshop report to try to answer some of the questions that I had. I mean, I am kind of in the same camp with her in the fact that I have a hard time believing that if we did the stock – that basically we define the stock from Florida to Maine, and that was the full assessment that we've done. We've gone through and we've adequately assessed it based on that biology. The real essence is coming down to, we set an ACL based on South Atlantic, but there is a fishery still operating in the Mid-Atlantic that we have no control over.

Isn't it really a management issue especially if it is a shifting stock? I think Amy started with a pretty good example of what happens if within our region we have a stock that shifted boundaries, like the epicenter is off of Florida, and through whatever change it moves up to North Carolina; really it wouldn't change a whole lot of how we managed it.

But what happens when we have a fish that shifts over a jurisdictional line? A bulk of our fish is situated south of Hatteras for a while, then all of a sudden through whatever Act of God they move north and that fishery up there is unfettered; isn't there the chance that we end up with our limits going over the ACL, because we're combining all of those coastal states to get those landings?

DR. BOREMAN: But, again, Carolyn, wouldn't that affect the assumptions that go into your projections because that was an assumption that wasn't in the original projection? That wasn't anticipated.

DR. BELCHER: But the assumptions are made based on the South Atlantic's fishing practices and not the coastal fishing practices. I guess maybe that is the big thing; asking the Mid-Atlantic to come up with management on their own knowing that you can't just compartmentalize it to be just Mid-Atlantic blue line.

Like I said, we're looking at the stock from Florida to Maine, so if there is an unfettered fishery that wraps up and we have no control over it; how do we control it differently then? We're setting it for the South Atlantic not the Mid-Atlantic, and not inclusive of a fishery that we didn't know was going to have a ramp-up, because it is not on our radar; it is on somebody else's radar.

DR. BOREMAN: Exactly, thank you.

DR. BARBIERI: Well, have we captured that statement properly, Carolyn, if you look on the screen? Carolyn, what you are saying is that because the total landings are already taken into account in the assessment; that where they are coming from is not changing the picture of the assumptions that were made for the projections.

DR. BOREMAN: We don't think she said that.

DR. BELCHER: No, because the problem is that we made the assumption based on the fishery as it was operating. I mean, this fishery came from out of nowhere, wasn't even on our radar to account for. It is in the Mid-Atlantic fishery zone; it is not in a South Atlantic zone.

DR. BOREMAN: That is what I've been trying to say for two and a-half hours, three hours. I thank Carolyn; she did it a lot more eloquently than I did.

DR. BARBIERI: Well, could you please, John, rephrase that in terms of our action items or one of our action items more explicitly?

DR. BOREMAN: I don't want to paraphrase what Carolyn said; what she just said was fine. What happened in the Mid-Atlantic was not on the radar screen when these projections were being made.

DR. BELCHER: The projections are fine. I think what we need to do is – even Amy said this early on – is go ahead and put the points in for the years that we know and rerun the projections with that information and see where we end up. Basically what we're saying is we allowed people to ignore the regulations; the ACL was for nothing. Now we've got to take it on the chin or however you want to look at that. We're already above it, so what do the projections say; okay, we went over it? What do we do to fix it?

MR. CARMICHAEL: What are you saying?

DR. BELCHER: Could you say that again, John?

MR. CARMICHAEL: Take landings to the Virginia line?

DR. BELCHER: No, I mean, basically we still do what we're doing but now where we have these landings that we know are in fact above our ACLs, whatever the values are that we've calculated; can't we update the projections with the new year? The biology is the same; nothing has changed in the biology. This problem is the fishery has changed. We had hoped we were going to be Point A, Point B in a few years. Well, we didn't get A and B, we got C and D.

MR. CARMICHAEL: If you go back then to what you said in April where you all said this is the best available science at the time it was done; are you now saying it is not the best available science for 2015, because you think that the fishery has shifted into the Mid-Atlantic more so than it had during, say, 2007 to 2011 in the terminal year of your assessments?

DR. BELCHER: No; I think the science is fine. Like I said, the biology of the animals isn't the problem. The problem is however the Mid-Atlantic got their portion of it. The problem has been that management has been different between the Mid-Atlantic and the South Atlantic. The ACL has been exceeded.

MR. CARMICHAEL: The South Atlantic took a portion of that ACL, ABC or whatever based on the landings at the time, and they set that bit aside to be used up there and it was like 3 percent. We now know it is much higher than that 3 percent, and the council is looking at actions to do that; but that would still be taken out of exactly these projections.

DR. BOREMAN: We need to rerun the projections with the new information. I am just looking at the terms now. This best available science; well, now we have science information that is available that wasn't available back in 2012 or whenever these original projections were made. I think what Carolyn is saying, and I agree with, is that we need to take this new information and rerun the projections.

The basis of the projections, which is the stock assessment, the biology contained in the stock assessment hasn't changed. It is just this new information is causing us to say that the projections that were made two or three years ago are no longer valid. We need to update them with new information based on what we've learned.

MR. CARMICHAEL: New information being landings?

DR. BOREMAN: The shift, whatever, what we've been talking about for the past three hours.

MR. CARMICHAEL: The only thing we can update projections with is landings. As we said earlier, it is not an area-specific assessment. As we said several years ago that the assessment was assuming that the shift in landings or explaining the shift to the north by higher recruitment; we've tied the model's hands when we just do projections; it can't assume higher recruitment as it did leading up to the 2008 year class. It is going to assume average recruitment. I don't think that would be very appropriate, because if what was happening at the terminal year has continued to happen for four more years; we're just going to exacerbate that huge uncertainty.

DR. BELCHER: But the problem is it is not the projections. Maybe this is a backed-up way. The projections told us where ACL should be, but ACL was set based on South Atlantic. This is what South Atlantic said was going to happen; so we can control that. We look at what the landings are, we make the cutoff, our fishery shuts down; but yet you've got a fishery that is still fishing on them.

You still count those landings towards it, and it is blowing past your ACL. We've now allowed for overfishing and not by our mistake but because there is a sister fishery on it. The projections aren't faulty. The problem is we haven't appropriately shut it down, because there is a fishery outside of our jurisdiction that we're allowing to continue.

DR. BARBIERI: That fishery; was it taken into account in the projections, Carolyn?

DR. BELCHER: I didn't hear any of that.

DR. BARBIERI: With the fishery, you were saying that the projections are fine. What happened was that there was a fishery that developed north of the North Carolina/Virginia Border that couldn't be predicted and it is new, and it is not being managed by the South Atlantic, so it is blowing through the ACL, right?

DR. BELCHER: Correct.

DR. BARBIERI: The question is were those things taken into account with those projections. I think this is the question we're trying to get to.

DR. BELCHER: Well, here is again the thought. Not knowing have those fish always been there; I mean we've defined the stock as going all the way to Maine, correct?

MR. CARMICHAEL: The assessment said as far as landings go.

DR. BELCHER: Basically the stock definition; I would assume if you are willing to let landings go to Maine, you are saying they are catching them however close to we're covering the full range of it. We've got the biology of it covered – and I'm trying to think where I was going with that.

MR. CARMICHAEL: It sounded like you were saying to update them but don't include the landings that happen in the Mid-Atlantic.

DR. BELCHER: Well, here is the thing is I'm thinking about the fact again in the jurisdictional shift; if our fish all behave nicely and stay in the South Atlantic, our projections probably never

would have had a problem. We wouldn't be having this ACL overage by as much as we have. But for whatever reason, Act of God, climate change, whatever you want to call that has had an effect; that the fish have either pushed up that way and have been more available; but because of how we incorporate all of the landings, we now see this bubble of landings showing up in an area that classically wouldn't have them because the fish don't spend their time there.

Well, now that they are and the regulations don't match, and we can't close it, the ACL is going to get busted every single time; and it is not that the projections were wrong. It is just a problem that, again, either we extend it across all of them – we know we have a species that crossed three different councils.

We all have to have the same exact regulations in some way, shape, or form, or at least agree to disagree on them. Right now that is not what we have. Obviously the Mid-Atlantic is looking at an emergency closure; but even when you look at our bag limit, we keep people to one fish. They're talking about seven.

MR. CARMICHAEL: I think what you're describing is a situation; it is not that the fish up and moved, it is that the area covered by the fish expanded. That means that the productivity of the stock is different now than what was in there perhaps or maybe it was already happening without the survey information and such that we really needed, we couldn't tell this; or maybe it is a separate reproducing stock. We don't know the answer to that.

But any of those all say that there is some underlying core estimate of productivity problem that was occurring in the assessment at the end and has only gotten worse over the last several years; which then would say perhaps the projections aren't appropriate. If I made the model simple, the comparison of all the fish moved up.

What if I did a model on one pond and had a pond adjacent to it and suddenly people started fishing on both ponds; if the two ponds were equal in size and productivity, my productivity just doubled and I didn't know it; my projections are going to be wrong.

DR. BARBIERI: Well, yes, when you say the projection is wrong – and I think that is what we need to clarify, Carolyn. It is not a matter of the methodology that was used and the assumptions were inappropriate or any of that. But then again you only make assumptions to the point that you can and things turned out differently. Those things could not be envisioned before, it looks like.

MR. CARMICHAEL: Do we think there is a fundamental change in productivity; that is what is going on?

DR. BARBIERI: I don't think we can answer that question, John, in terms of change in productivity.

DR. BELCHER: Again, you look at the numbers that we predicted for our fishing rate; you look at the projections with the imputed and you're looking at whatever those – I can't remember off the top of my head; but we have numbers as low as one and some change, but then in the upper end of it you've got these fishing levels of four.

Well, how could we get to that point unless somehow, somewhere you have some – in my opinion you had some fishery pop up that is not fettered like the rest of them are. I'm with Luiz; I don't know that you could say productivity is up, down, or indifferent. All you know is there is a higher level of fishing pressure that is hitting those fish. Where we thought this ACL would be doable, it probably was the overall doable, but not everybody shared in that vision.

DR. BARBIERI: My read of what you're saying Carolyn – and correct me if I'm wrong or anybody else jump in – is that you are saying that the conditions have changed since the projections were put together; and there were enough changes in the fishery.

DR. BELCHER: Yes, you had a dramatic change in a fishery that completely swung 180 from where it was or pretty close to 180 and it doesn't follow your rules. And it is not being damning of the Mid-Atlantic; but that is the opportunity that opened up for them and they took advantage of it and there is where your fish went.

We may find now because that has happened, our stock may not be as good as we thought. Now would be the time – and unfortunately not that anybody wants to hit it, but maybe it would more critical to do a stock assessment to know how hard the population did get hit by having F rates go up that much, if those are reflective of what happened, the 4s and the 3s.

MR. CARMICHAEL: I mean that is sort of the two outcomes, either everything is all good and these high landings are driving this stock towards oblivion soon or there is some greater productivity out there for some reason somehow with that in the projections.

DR. REICHERT: Yes, or a biomass that was there that was not included in the original assessment.

MR. CARMICHAEL: That brings us to this are they still best science?

DR. BOREMAN: I think the answer to that is, is there anything better out there; because when you say best, that means when it is not the best you have something that is better. Think of it in that term.

DR. BARBIERI: John Boreman, I don't want to put words in your mouth, but before you were agreeing with Carolyn and Amy and your suggestion perhaps rerunning the projections with updated landings?

DR. BOREMAN: Well, updated, whatever, but, yes. I think obviously knowing now what we didn't know then; we should rerun the projections with whatever new information we can use. I'm saying we; that is you down to Beaufort. But still I think we need to at least rerun given the new information.

DR. BELCHER: Here is the other side of that is in absence of that fishery, look where our ACL was. Now the question becomes are you willing to argue to let that ACL go higher, because there is a fishery out there that basically said the ACL could be higher, or do you just want to take – how conservative do you want to be, because there is no guarantee that the landing is sustainable. Based on past information, that wouldn't have been a sustainable landing stream, right?

DR. BOREMAN: Yes, I think it is already demonstrating that; but that is a separate but equally important issue here. We still need to revisit that ACL to see if it is valid even if it just pertains to the South Atlantic side. When you have F equals 1.5, F equals 2 or whatever, and you are using an M value of 0.1; I think there is enough disparity there to say there might be a little overfishing going on.

MR. DIDDEN: John Boreman might be able to kind of better touch on this. I'm not sure if our Blueline Working Group's findings were shared with you guys. The Mid-Atlantic Council asked its Blueline Working Group to comment on whether they thought that SEDAR 32 represented best available scientific information for setting catch limits and other technical measures within the jurisdictional boundaries of the Mid-Atlantic Council.

That workgroup concluded that it did not and that at the very least an assessment update would be needed to reflect the events of the higher catches off the Mid-Atlantic, but John may be better to touch on that. The other thing I wanted to flag is that the Mid-Atlantic – and this won't help folks today, but hopefully will help in the future – the Mid-Atlantic Council has committed to funding some genetics work that is going to be done in conjunction with a pilot, kind of a coast-wide deep-water survey that hopefully will provide better information in the future, but again I realize that doesn't help a lot today.

DR. BOREMAN: Well, actually Doug Vaughan chaired that working group. Maybe Doug can talk about it.

DR. VAUGHAN: I'm not sure what you had in mind, John.

DR. BOREMAN: Well, just what Jason –

DR. VAUGHAN: Yes. Certainly during our discussion at our SSC meeting in May, that was some of the proposals I know are in the works.

DR. REICHERT: Well, I see there is a bit of a conflict here, because so far I think, unless I'm mistaken, our SSC has still considered the stock assessment based on the available information, the best available science; but the Mid-Atlantic SSC has concluded that it is not the best available science, correct?

DR. BOREMAN: Not the best available for managing that portion of the stock north of North Carolina, the Mid-Atlantic portion; that we need an update assessment and additional information basically to get at – and this is where I was hoping Doug would speak up, but basically to get at this productivity versus higher fishing mortality rate issue.

DR. BARBIERI: John Carmichael, let me ask you a quick question, because I'm thinking about revised fishing level recommendations, if we decide to go there. I'm wondering, if this stock was declared overfishing; do we have a rebuilding plan?

MR. CARMICHAEL: This stock was declared overfishing but not overfished.

DR. VAUGHAN: So you don't need a rebuilding plan.

DR. BARBIERI: Right; I thought I had seen somewhere that it was considered overfished and overfishing, but I guess that was mistaken.

MR. DIDDEN: Was it originally overfished and then the reference point was changed?

DR. BARBIERI: That is correct; yes that is why, then.

DR. DUVAL: I was wondering if Jason could perhaps identify who the members of the Mid-Atlantic Blueline Tilefish Working Group are.

MR. DIDDEN: They are Doug Vaughan, Cynthia Jones, and David Tomberlin.

DR. BARBIERI: Doug, it looks like you share that concern about those projections?

DR. VAUGHAN: We didn't specifically talk about the projections, so I'm not sure. I have some concerns, but not – I know the one thing I would like to see is have the projections rerun with the landings up through 2014 since that data is available.

DR. BARBIERI: I don't mean to rush anybody; but what I'm hearing then is from at least a few members now this statement that the projections should be rerun. Am I overinterpreting by saying that that means that you think that the current set of projections are no longer appropriate for management advice?

DR. VAUGHAN: Well, since they don't include the higher landings that we know took place in 2014; I guess, yes, I would agree with that statement.

DR. CROSSON: I agree with that statement as well.

DR. BELCHER: I was going to say or the other thing is you have to make sure that everybody ratchets down so that the ACL won't be exceeded in the next coming fishing year, because right now we can't guarantee that. We can guarantee what people in the south are going to do, but we can't guarantee above the Hatteras line.

DR. GRIMES: I agree that the projections need to be rerun. I agree with that part of it; but I am also concerned about the productivity issue. Maybe it is a different issue, and it impacts the quality or the legitimacy of the science in a different way; but we've had fishermen and other people tell us that those fish have been up there since the 1980s.

If there has been a range expansion and they are not up there twiddling their thumbs, the fish that is, so they have likely been reproducing, and so there is a legitimate question about the increased productivity of the stock, if it is one stock or if it is two, which I doubt that is true.

DR. BARBIERI: John, can you capture that?

DR. GRIMES: I don't think that is anything that people haven't already been saying. John Boreman has said that over and over.

DR. BARBIERI: Right, it is just getting, Churchill, more concurrence from other SSC members, just to make sure that we have more than one person making statements. If others agree, it just helps us have a feeling for the committee in general.

DR. REICHERT: Perhaps that is part of it, but I would also say it is not just productivity. It is biomass, because as you just said, Church, there have been reports that those fish have been there for quite a while. That goes back to something I've said on various occasions. The question is whether that biomass was appropriately taken into account earlier. I'm not sure if we know that or how to incorporate that with the current information.

MR. CARMICHAEL: Sort of capturing it here?

DR. REICHERT: Yes; I believe so; and also know that I agree with what others have said about the projections. I am not sure if ultimately that will get us where we need to go, but that is all we have right now until we have an update.

DR. BARBIERI: Looking at what is being captured in terms of the meeting notes and input from the SSC members is that perhaps we should not be addressing these questions as best scientific information available from a procedural, methodological point of view. I think that the projections were well put together and all the right, quote-unquote, assumptions that are usually made were made for this one as well. It is just that there have been changes in the fishery that have taken place since that time, and, of course, they could not have been envisioned that far back.

DR. BOREMAN: Luiz, I want to interject that the report of our working group in the Mid-Atlantic that Jason talked about and Doug, this working group that Doug chaired, that report was sent out to this SSC on June 1st by John Carmichael. It is one of the four attachments to his e-mail, so everybody should have that.

DR. GRIMES: We have it; I read it.

DR. BARBIERI: I think we have enough right now from what John Carmichael captured from the committee members comments; provide guidance for revised projections as necessary. At this point what we have there is this update in observed landings. I don't know how we will be able to capture any changes in this spatial pattern and changes in productivity.

DR. ERRIGO: Luiz, I can make a suggestion. I suppose we can look at perhaps a projection scenario that incorporates this. If you look at when the landings start to increase and when the fishery apparently starts to land most of its fish or catch most of its fish in the northern parts, I don't know, north of Hatteras, you see the model start to put in higher amounts of recruitment into the stock.

Perhaps we can look at those levels of landings and the average amounts of recruitment that the model puts in and use that as a base level of recruitment rather than the average recruitment of the Rmsy or whatever it is that is estimated in the model, because that is a higher level of recruitment than is estimated by the model; and just have it like a different recruitment scenario or something like that like was done for king mackerel. Does that make sense? Did everyone catch that?

DR. BARBIERI: Yes; and I think that the king mackerel example is a good one, Mike. Yes, we had those different scenarios to consider regarding future recruitment.

DR. BOREMAN: I have no problem doing that except we don't want to fall into the trap of knowing what the outcome is and going back and fitting the input to get us to the outcome. If we're looking at it in terms of what possible scenarios could have led us to where we are today, then I have no problem doing it; but to say this is an alternate and using it as an alternate, there may be some issues with that.

DR. SCHUELLER: I agree with John.

DR. BARBIERI: John, let's do it the way that you just suggested from an exploratory. Let's see what could lead us to where we are today. The thing is there is something that is not quite right, we just don't seem to know exactly what it is, and if we don't we can't really fix it.

MR. CARMICHAEL: Can we fill in something here for the basis of that recruitment; had Mike suggested something?

DR. BARBIERI: The recruitment should be based on – Mike, what did you say it should be based on –

DR. ERRIGO: There are two pieces of information we can get right away. One is the length comps and one is the landings. We can look at the landings in the latter part of the SEDAR 32 time series and go back to what the recruitment looked like for those levels of landings, because they are fairly similar now; and on average what was the recruitment for those levels of landings; or we can look at what about the – I mean, we can double check, you can look at the length comps and say do they kind of look similar or something like that. I would just do it based on those latter levels of landings in SEDAR 32.

MR. CARMICHAEL: Maybe 2003 to 2007 groups. If you want to go back 2003 to 2007, maybe, 2008 was three and 2011.

DR. SCHUELLER: I have a ton of questions about this exploratory projection. First, if we're doing it and it is exploratory, what are we going to use it for, to inform our uncertainties, do some model averaging, what? If we are going to pick recruitment that is based on the recruitment that supported the 2011, but what we're really concerned about is that fishery that is moving into a new area. I don't know; I guess I don't see what this provides us with. There has been a lot of concern that those recruitments are just to make up for having moved into that other area, so they are not true. Then if that is the case, then why would we run this?

MR. CARMICHAEL: Well, if we believe that, then we have to believe continuing to use recruitments that are coming since then have to be just as wrong.

DR. SCHUELLER: What recruitment since then?

MR. CARMICHAEL: You are saying you think the recruitments are higher, reflecting people moving into that other area, they have continued to be in that other area, they have continued to find big old fish, they have continued to catch them despite increasing regulations; there needs to

be some way of saying, oh, wow, well, maybe whatever explanation the model used needs to be carried forward into the projections.

DR. SCHUELLER: Okay, fine.

MR. CARMICHAEL: I think that is the critical issue here.

DR. SCHUELLER: How do we use that then? We're going to have projections from the base run, which does have those 2011 recruitments figured into that are zero already. Then we're going to do another set where we artificially change our zero to some other value and then what? I guess I'm just trying to see how this works practically.

DR. BARBIERI: Amy, I think that it is looking at different sets of assumptions based on their likelihood.

DR. SCHUELLER: Luiz, if we took out the landings for that time period, our zero would have been estimated smaller. The base run is already taking into account that.

MR. CARMICHAEL: Wouldn't it kind of depend on how much leverage those few years had at the terminal year of the assessment; because if you look at the landings, the recruitment, or the three or four years before 2008 or about twice the R-0, and it is basically the R-0 that you get from 2008 on; it definitely thinks something was going on.

Being that is happening at the terminal year of the assessment and you've got 20 years leading up to it of that fishery largely being south of Hatteras, it may be that they simply don't have the leverage to raise up from zero, so you have them coming out as being higher than R-0, so you just have some error going into them.

DR. SCHUELLER: Yes, John, I mean there is a balance, right? These assessments are a balancing act between estimating all the different parameters, including F and R-0. It is giving it some leverage, but how much leverage should it get? That is really the question.

DR. BARBIERI: Well, Amy, I think that this is something that we're going to have to have some more time to discuss. Right now this is just some thoughts that are being put down. I think we should have something explicit in our notes that basically asks us to really look into all of this in more detail and see what is actually practical to be implemented.

I think that what John was saying was like in line of what Churchill Grimes mentioned that if the stock had expanded north and those fish are reproducing up there; maybe the productivity of the stock has really changed.

MR. CARMICHAEL: This seems that if we accept that the model or we explain what the model was doing is using higher recruitment to account for that shift in effort into that area; big, old fish that is seeing hadn't been fished on; if we accept that as what was going on to explain those high recruitments prior to the terminal years, then we need to have some way that the model can continue to do that into the projections in some way as long as that shift has continued, and the shift has continued. If anything, it has gotten worse.

There is maybe some argument to make that they have continued to move farther north, hitting even other areas of fish, mining them out. We know the model deals with that in recruitment. But instead what the projections have done is they've tied its hands and they're feeding it R-0. They are feeding it average; I mean, they are feeding it MSY recruitment, whereas, before the terminal year, it was getting a lot higher recruitment explaining that shift.

I just don't see how we can use that explanation for those good year classes at the end of that assessment as explaining the way the model dealt with that shift and then kind of fall back here and do these projections and ignore that and say, but it's okay to just use MSY type recruitment, which is about half of what the model was actually saying was going on.

DR. REICHERT: Also to answer that recruitment question; I think it was in Kevin's presentation. He explored whether or not there was strong evidence of a recent strong year class. I'm pretty sure the conclusion was that there was not.

DR. VAUGHAN: That is my memory.

DR. REICHERT: I just pulled up that presentation. He mentions that there may be other mechanisms underlying recent high landings.

DR. BELCHER: I have been wracking my head for like the last 30 minutes trying to remember which species, and I want to say it was snowy grouper, but I don't know that my recollection is correct; did the Mid-Atlantic proactively come to the table and talk to us about extending our regulations to cover that fish, because they were seeing an uptick in that recreational fishery?

MR. CARMICHAEL: Snowy grouper.

DR. BELCHER: To me it feels similar to snowy grouper. If we're actually going to start looking for a kin species, I feel like it is more of a snowy grouper thing that we just didn't arrest it early on. That is just my opinion.

DR. BARBIERI: Folks, I apologize, but I am going to have to disconnect fairly soon. My son is graduating from high school today and they have a ceremony all planned out and I am supposed to be there. I am not going to rush things. Marcel, I don't know what your schedule is like and if you can stay and folks feel there is something further to be discussed here.

Personally, I think that we captured a lot of good ideas. I think we're going to, as always, summarize our thoughts and notes and distribute that to the group at large. We're going to have another opportunity to add some additional points there; but at the same time, you're more than welcome to stay longer if additional discussion you feel is warranted.

DR. REICHERT: I'm more than happy to stay on with folks to continue the discussion. I'm not sure after three hours how much more productive that will be. The only thing I want to mention is that one thing we should stress is the importance of the blueline tilefish update that is currently planned, I believe, John, for 2016.

It means that the council will probably not see that until 2017. I think we may discuss that in our 2016 October SSC meeting. I think that is important to stress based on the lengthy discussions we've had on various occasions that that is an important update assessment.

DR. BOREMAN: I believe it was 2017 that we talked about in the April meeting.

DR. VAUGHAN: It was supposed to be completed January 2017, so it will be done during 2016.

DR. REICHERT: Yes; I just looked at the SEDAR notes and it says report to the council in January 2017. That means that I expect that we would see it in October 2016; but irrespective of the timing, I think we should stress the importance of this update, because there are so many unknowns at the moment that I really believe that is an important assessment. Other than that, I am able to take over from you if you have to leave, Luiz.

DR. BARBIERI: Again, folks, I cannot see a raised hand, so just un-mute yourself and speak up if you feel you would like to stay longer and discuss this a bit further. It looks like we're done. Well, many thanks to all of you for the great participation today. Of course, thanks again to John Carmichael and Mike Errigo for all the help preparing us and conducting the webinar. I will be in touch and discuss report preparation and fleshing out the meeting notes. Unless we have any other business that Marcel can take over, I think I will disconnect.

DR. REICHERT: I think the only thing we need to do is if we look at the agenda, there is another opportunity for public comments, John. I think we should open the floor for those comments before we sign off. I can't see any hands. Do you see any raised hands for people who want to comment?

I'm not sure how to address this. If anyone wants to give public comments and is unable to do so, please e-mail John Carmichael with some written comments and then we will make sure that it gets in the – no hands raised, John says. Well, with that; I assume that we are done with this meeting. Thanks everyone for your contributions, and then John, Luiz and I will flesh out the report and send it to all of you.

(Whereupon, the webinar was adjourned on June 3, 2015.)

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