

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Webinar

November 21, 2016

Summary Minutes

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened via webinar on November 21, 2016, and was called to order by Dr. Luiz Barbieri.

DR. BARBIERI: Good morning, everybody, and welcome to the November 21, 2016 South Atlantic Fishery Management Council's SSC Webinar meeting. Our agenda is in front of you there. Our webinar this morning is supposed to start now and go through 12:00 P.M., noon, and we are supposed to be discussing spiny lobster catch level recommendations, in continuation of the discussion that we started back at our last October meeting. We will start Agenda Item Number 1, with our Introductions. Mike E., it might be good for you to call numbers if you have a list there in front of you, just so we have a good administrative record of a list of all attendees.

DR. ERRIGO: I can do that, yes. I will go down the list as it appears here in front of me. Alexi.

DR. SHAROV: Yes.

DR. ERRIGO: Okay. Great. Why don't you guys say your full name? That way, they have that for the recording.

DR. BARBIERI: Go ahead, Alexi. Just so everybody understands, since this a webinar meeting, we're going to go through a little bit of like a roll call, so to speak, and, as Mike E. calls your first name, if you would just say your full name, or first and last, basically so we have this for the administrative record, as far as meeting attendance and then later for the recording, for voice identification, please. We will start with Alexi.

DR. SHAROV: Alexi Sharov.

DR. ERRIGO: Thank you. Amy.

DR. SCHUELLER: Amy Schueller.

DR. ERRIGO: Anne.

MS. LANGE: Anne Lange.

DR. ERRIGO: Carolyn.

DR. BELCHER: Carolyn Belcher.

DR. ERRIGO: Church.

DR. GRIMES: Churchill Grimes.

DR. ERRIGO: Eric Johnson.

DR. JOHNSON: Eric Johnson.

DR. ERRIGO: Fred.

DR. SERCHUK: Fred Serchuk.

DR. ERRIGO: Jeff.

DR. BUCKEL: Jeff Buckel.

DR. ERRIGO: Kari, why don't you say your name too, since you will be talking?

DR. MACLAUHLIN: Kari MacLauchlin, council staff.

DR. ERRIGO: Thank you. Laura.

MS. LEE: Laura Lee.

DR. ERRIGO: Luiz.

DR. BARBIERI: Luiz Barbieri.

DR. ERRIGO: Scott.

DR. CROSSON: Scott Crosson.

DR. ERRIGO: Tracy.

DR. BARBIERI: Let the record show that Tracy Yandle is also on the webinar, but she might be having voice connection issues, and so we're going to proceed with the meeting, and hopefully Tracy will be able to resolve her sound issues. Finishing Introductions, our next item is Approval of the Agenda for today's meeting. Are there any concerns or comments or recommendations regarding today's agenda? Hearing none, today's agenda is approved as presented.

That leads us to Agenda Item Number 2, Spiny Lobster Catch Level Recommendations. Mike E., I see that, before action, we have public comment. Are we going to have Kari present her introductory presentation or are we going to go straight into public comment?

DR. ERRIGO: The discussion we had at the last SSC meeting was to try having the presentations and that first and then having public comment and then having the SSC discussion, and so I think we will have whatever presentations are going to be made first.

DR. BARBIERI: Okay. That sounds good. Thank you. With that, Kari, if you can go ahead and go into your presentation.

DR. MACLAUHLIN: Yes, and this is just a couple of slides that you guys have already seen, except for the timing of the amendment, but we just wanted to make sure that everybody is aware. Just to remind everybody what you guys are doing here, the landings have exceeded the ACL in two out of the last three fishing years, and it also exceeded the ACL and the OFL in the 2013/2014 fishing year.

This ACL was put into place in Amendment 10. It was effective in January of 2012. It set the ACL equal to the ABC, at 7.32 million pounds, and then it set an ACT at 6.59 million pounds, with an accountability measure of, if the landings exceeded the ACT, we would convene a review panel to discuss whether or not corrective action is necessary. We have had two review panels meet after the landings have exceeded the ACT.

The Gulf Spiny Lobster SSC, at their June meeting, made the following recommendation, to use the time series of 1991 through the 2015/2016 fishing year for an ABC and OFL calculation for spiny lobster, and so that would be the mean of the landings through that time period. For the ABC, it would be with a 1.5 standard deviation, and, for the OFL, it would be two standard deviations. I have down here what the actual pounds would look like under that Gulf SSC recommendation. Mike E., if you want to pull that and put it in the document, you can do that.

I am not going to go through all of these. You guys have seen this, but I just wanted to remind everyone that there are a lot of regulations in place. A majority, almost all, of the spiny lobster harvest comes from south Florida and the Florida Keys, and so this is actually co-management between the councils and the State of Florida, and a lot of this is put in through Florida legislation and then integrated into the federal fishery management plan.

There was, a few years ago, a discussion about removing spiny lobster from federal management and letting the State of Florida manage it, just like they did with the stone crab not that long ago. However, one of the main arguments was that there is a prohibition on the import of undersized lobsters for the entire country, and, since it's a federal fishery management plan, that applies for everyone in the U.S. To take them out of federal management, they would lose that protection, because the state couldn't do that. For now, they wanted to keep it in federal management, and so it's kind of a co-management scenario.

This is the last one, just to let you guys know the timing for the councils. This is a joint fishery management plan with the Gulf Council, and so we worked with them on the timing. What's going to happen is we're going to take your recommendations and provide them to the South Atlantic Council at our December meeting in a couple of weeks, and then they also have a South Atlantic gear action that they're going to look at, and the South Atlantic is going to review that and provide guidance. That will go into an options paper, and that will go to the Gulf of Mexico Council for their January/February meeting.

The Gulf is the administrative lead on this amendment, and so they are actually going to get first crack at the options paper. They will provide direction to staff on what actions and alternatives to include, and then it will include the actions to revise the OFL, ABC, ACL, and ACT. Then there will be another action to possibly prohibit recreational traps in the South Atlantic EEZ.

The recommendations from both SSCs will be incorporated into that when the Gulf of Mexico sees that and lets us know what actions and alternatives they want to put in. Also, I have in there that it's Spiny Lobster Amendment 1, but it's actually Framework Amendment 1.

At our March meeting, the South Atlantic Council will review what the Gulf of Mexico sends over, and they approve the actions and alternatives. They can add alternatives and make changes and then we will proceed with the usual process of a framework amendment, and so it's a little shorter than a plan amendment. We will have some scoping, probably via webinar, and then probably

some hearings in person down in the Keys, just to make sure that everyone has an opportunity to provide some input, and then the expected date for approval by both councils are at their June meetings. That's it for this.

DR. BARBIERI: Okay. Thank you for that, Kari. It's nice to have that overview and refresh our memories on a number of those issues. With that, before we go into public comment, I am going to ask the committee members whether there are any questions for Kari or clarifications regarding her presentation or the facts associated with this action. Okay. It looks like there are no questions. Your presentation was short and sweet and very clear, Kari, and thank you. With that, I am going to open the floor for public comment. Mike E., I cannot see a full list of participants, and so I will leave it up to you.

DR. ERRIGO: I can see everyone. If you have a question or a comment for public comment, please raise your hand, and I will unmute you. I am not seeing anything at this time.

DR. BARBIERI: Thank you, Mike E. With that then, we will move on to Agenda Item 2.4, where our action item is to review the available information for spiny lobster and provide recommendations for ABC and OFL for this fishery. The briefing book that was distributed a few weeks back had about fifteen documents, a number of documents providing background information on this issue and information on the biology and the fishery for spiny lobster, some issues regarding stock distribution and connectivity, et cetera.

I remember, back from our October meeting, there were some questions regarding yield per recruit analysis and size composition of the catch and the population, and some of that information is now provided to the committee in the briefing book, and so, with that, I think I am going to open the floor for discussions by the committee on the review of the information and any recommendations for how to set the ABC and the OFL.

DR. ERRIGO: If there are documents that anybody wants to see, please let me know, and I will bring it up.

DR. CROSSON: I have looked over the briefing book, and I'm trying to remember exactly what happened at our October meeting, but I guess, in looking at this, and maybe this is a question for Kari that I should have asked a minute ago, but I understand the use of -- Earlier on, given that MSY was unknown, that they determined the OFL proxy by looking at the average landings over a ten-year period, and that's what was in the original FMP, in Amendment 10.

I understand the articles about what's driving the demand and the Chinese market. I have seen it myself when I've been down there, how basically they're shipping everything out to that live market, but I guess my question is why the review panel and why the advisory panels for the Gulf and the South Atlantic Council chose to stretch back the landings all the way to the early 1990s. I still am not completely clear on that, why they are not using ten years, as they did before. If anybody could shed some light on that, I would appreciate it. I mean, from a biological standpoint, I don't understand it.

DR. MACLAUHLIN: The first time the review panel met, we had multiple presentations on landings and all the biological information and research, environmental factors, economic characteristics. We talked a lot about that new live market, because that is putting kind of a pop

in landings after January and February to meet that demand, and that's what is kind of -- It seems to be what's kind of driving these higher landings later in the year. Usually, by that point, they have switched to something else or it's just kind of a low level of landings, but the review panel didn't make any recommendations at that time to revise the ABC and ACL.

When we met again, when the review panel met again at the beginning of this year, they approved a motion, and it wasn't unanimously supported, to look at that longer time period. All of these people had seen all of the information from the previous review panel and then felt like it better captured the dynamics of the fishery, because there's just so many factors beyond biology and harvest.

Even internal recruitment, while there is some more recent research that is suggesting that it's higher than we previously thought, that was taken into consideration, but it could vary every year, but, really, the review panel -- One thing that we talked about was that the fishery is so heavily regulated. It has a cap on effort, and it has so many input controls in place.

By using that longer time period, where it had periods of like low landings and medium and high landings, it would capture all of that without setting it really high, and so it would have a little bit of being a little more conservative than just using the past ten years that have been a period of high landings. In reality, we don't know what the new norm is, and that's why, when they were considering that the last time, when the SSCs recommended an ABC and they used that time period, that was a period of low landings, relative to other years.

They thought this is the new norm, that we have some biological factors affecting the fishery and some environmental factors affecting the fishery, and this is how it is, and this seems to be the way that it's going, using that last time period, but then we saw that it has changed, and so it's more to capture the low and the medium and the high and having the low landing periods in there when calculating the ABC. It would at least be a little more conservative than just using like the highest period of landings.

DR. SERCHUK: I have a comment. The first question I have is why didn't the SSCs and the Gulf use the entire time series? We have a document from 8/06, which is the spiny lobster update assessment, that has landings back to 1985 and 1986. It seems, to me, that the range of landings prior to 1991 is of the same magnitude that we've seen since then, and so one question of just information is you don't see it there, but there are landings that precede that, and I am just wondering why the entire time series wasn't used.

DR. BARBIERI: Fred, good point.

DR. MACLAUHLIN: I can answer that, Luiz.

DR. BARBIERI: Go ahead, Kari, but I want to also ask Mike E., if he could, to unmute John Hunt and Tom Matthews.

DR. ERRIGO: Yes, I did. Tom messaged me, and he said that John Hunt was with him, and so I un-muted them.

DR. SERCHUK: Can you go to page 43 of the document you have on the screen? You can see that there are landings that go back to 1985. Between 1985 and 1990, the landings are a magnitude that are no different than the ones we've seen since 1990.

MR. HUNT: This is John Hunt, and I think I can answer that question. It's simply a pragmatic issue. We did not have any information on recreational landings prior to 1992. That's the point at which we began our surveys to estimate the recreational sector.

DR. SERCHUK: Am I to presume that the landings that are presented in this table before 1990 are simply based on a ratio estimate?

MR. HUNT: Let me get closer to the screen and look at it. No, they would have -- Is this from Bob's stock assessment?

DR. ERRIGO: Yes, this is from the last stock assessment that was done.

MR. HUNT: Bob would have taken probably some sort of average and brought it --

DR. SERCHUK: That can't be right, because the percentage of the recreational differ in the first four years from the ones that you say we have data for from 1990 on.

MR. HUNT: Yes, I see that. I can tell you that we started our recreational surveys in 1992, and, at that point in time, or maybe it was 1991, I guess, either 1991 or 1992, and anything done prior to that would have been some sort of calculation generated in the stock assessment, and I would have to go back and look at it to even know what they were. For our purposes here in the Keys, we have started -- We have essentially taken that 1991/1992 season as the point at which we're comfortable with our estimates of the recreational sector.

Prior to that, there was a study done by Jim Zuboy, where it was just simply a -- What kind of a survey was it, Tom? I forget. I haven't looked at that document in probably fifteen years, but it went through a whole process of estimating that it was about 10 percent of the total catch, but that's clearly not the case. They used a Delphi technique, and so this is where we in the Keys are comfortable.

DR. SERCHUK: Okay. I'm just a little bit concerned about it, for two reasons. I understand the logic, but one concern I have is some other people might have felt differently, because the assessment actually used the data from 1985 on, and I realize that we're not using that assessment any longer, but there must have been some scientific rationale presented when the assessment was done that indicated that, rather than using nothing for the recreational information, that there must have been a recreational fishery at that time, and so, somehow, these estimated numbers were felt to be sufficient to be included in the assessment for the evaluation of stock dynamics. Otherwise, they wouldn't have done it that way.

DR. BARBIERI: Can I answer the first one, because I was the chair of the review panel for that assessment, and so I have some inside knowledge there about what happened. Yes, you are correct that that made it all the way to the review panel, but, since that assessment was not accepted as best available science, it's kind of hard for us to hold, I think, those decisions -- In every

assessment, as you know, we make decisions about how we're going to estimate landings for a period where landings were not really well known.

DR. SERCHUK: I agree with that, Luiz, but let's keep this in mind as a precedent when we go forward with the new MRIP numbers and we're trying to extend those numbers back in time, because we're going to be at exactly the same spot when we review the new assessments with the MRIP numbers and basically saying, wait a second, what we have is we're going to have to some extrapolations, and so that's just a word of caution.

DR. BARBIERI: Thank you for that.

DR. SERCHUK: I'm not going to make a big thing of this, because, in any case, as I said, the range of values before 1990 or 1991, in terms of the total removals, are not very much different from what they have been since then. I have a more generic problem, and that is, no matter what we do or no matter what the SSCs have done in the Gulf, they are using the landings database to infer stock productivity, and my feeling is, from the little that I know about spiny lobster, most of the recruitment that comes to the U.S. fishery is from the Caribbean. It's outside of the system.

Therefore, using landings in the U.S. fishery is either a surrogate or a proxy for resource sustainability, but nothing that's done in the U.S. fishery, apart from maybe the little self-recruitment, affects productivity, because it all comes from someplace else, and that's a concern I have, because, no matter how hard the fishing mortality that is put on the resource, it doesn't affect reproductive output, because the reproductive output comes from outside of the system.

Therefore, it seems to me, if we can accept that, and we can accept that the regulations that are in place, including the minimum size regulation, are adequate in terms of the current market, that we should try not to constrain this fishery at all, because the fishery doesn't have any impact, or little if any impact, on resource sustainability, and I realize that the reason we're going through this is because we have to set an OFL and an ABC, and we can go through that exercise, and we will go through the exercise, and we will make a recommendation, but I want our justification to be very, very clear that, as was pointed out earlier on, this species has a life history that even using the Tier 3a control rules -- Those would be applied to a species that the resource sustainability was an issue within our own waters, but, here, it isn't.

I just want to make sure -- At least I would like to make the recommendation that, no matter what we do, we point out that we're not concerned about recruitment overfishing, which is what, in essence, the OFLs and the ABCs refer to, because, if we fish all the resource that comes into our waters at the size limit that we have, in no way could that possibly damage long-term sustainability. From what I understand, we're getting the yield per recruit and we're getting the economic incentives, or the economic returns, on a size that is preferred by the fishery. Am I incorrect on that?

DR. SCHUELLER: I don't know that I agree, Fred, because I don't think -- The question becomes what is a substantial portion of the population coming from outside, and I wondered that too, and there is two attachments that we were provided with. Attachment 10 talks about 40 percent self-recruitment, and Attachment 11 talks a 62 to 74 percent predictability of recruitment based on local spawning stock size, and it does show a stock-recruitment relationship, which, if it has that good

predictability, my question becomes, if we're showing a stock-recruitment relationship, doesn't that mean we need to protect the stock?

That Attachment 11 suggests self-recruitment in the area, and so I don't know. I don't understand why everybody thinks that everything is coming from somewhere else. The evidence doesn't seem to support that, necessarily, and there are a lot of statements made in the February 2015 panel report and background documents that really concern me.

They said things like there is no evidence trends are due to population size and trends are related to increases in effort and the group recommends not to change the catch limits and to actually look at the accountability measures, and it talks about effort potentially increasing. If you look at the length information, there is a smooth decrease, or loss of bigger sizes over time, and I know we've talked about that being economically driven, but I feel like, if that was a brand-new market that they were suddenly targeting for, you would see more of an abrupt change, and I just -- I don't know. The conglomeration of all the information that we've provided in these documents, it doesn't seem to me that the population is just coming from somewhere else and we can kind of do whatever we want.

MR. HUNT: If it's okay, I think both Tom and I would like to respond to that in a variety of different ways. First of all, Attachment 11 is Nelson's paper, and is that correct?

DR. BARBIERI: Yes.

MR. HUNT: All right, and so one of the issues with that paper was how he depicted our recruitment index from our collectors, and it's something that we did actually converse with him about at that time, and it never came to a resolution. Early on, and I really have to sort of tell the story of how we came to when in the lunar cycle we go out to sample those collectors for that index.

Back in the 1980s, I had a project related to Looe Key National Marine Sanctuary. As part of that, we incorporated collectors on an inshore and offshore basis, and what we were doing at that point in time was sampling them once a week throughout the lunar cycle, and it's been pretty common knowledge that most post-larvae arrive on or about the new moon, but we wanted to take a good, hard look at that.

What we had was weekly data, and, as in all of these kinds of studies, when you have weekly data, there are always some of those post-larvae or whatever that are coming in at different times, and we coped with that. We also captured the length of time that it takes to go from a newly-settled clear puerulus to taking on varying degrees of pigment and to then, ultimately, metamorphosing to that juvenile stage.

What we found was, to sort of make a very long story just long, was that, if we sample on or about day six or day seven of the lunar cycle, we capture a very high proportion of those arriving pueruli, because it takes them -- If they arrive on the actual new moon, then they metamorphose on day seven or eight, and, when we did our back calculations from when we pulled the collectors, we determined that, by the time they get into the near-shore shallow waters, where these collectors are, because these collectors are just ocean side of the Keys at, right now, two locations. One is

off of Big Pine Key and one is off of Long Key. By the time they arrive at that spot, they are typically arriving there on day two or three, and so we're maximizing our catch, if you will.

Early on, and in that figure, which has his puerulus index matching landings, he used the weekly data, which artificially increased that puerulus index by some proportion, and we never kind of resolved that, and it's my perception here that that relationship starts to break down if you use what is our long-term data of just sampling once a month.

Secondly, we have seen a landings recovery, a slow landings recovery, since the crash, and you have to remember the crash that happened here happened across a span of one year. It just dropped precipitously around 2000 and stayed very low, and we have seen a slow recovery, and our puerulus index really hasn't changed all that much, and so I am not sure that there is a relationship. It's my take, I should say, that a lot of the landings changes that occur here are more related to post-settlement factors, and that was the cause of the decline, and so that's just my own personal opinion.

DR. SCHUELLER: Can I ask a question? For me, my thought about the index is that, okay, the scale can go up or down, but what we really care about is the trajectory, right? Are you saying that, if he is using the data where there is good numbers each month, that that is still not reflective of what is happening on an annual basis, regardless of the scale?

MR. HUNT: I am saying that, first of all, if you remove those first few years, you end up with an index whose trajectory is a lot flatter, and you need to remove those first few years, or at least remove the added weeks when we were really doing a science experiment, as opposed to developing an index. When you do that, you end up with an index that is much, much flatter, and we have depicted that index, and I am pretty sure that way the stock assessment takes it is the way that we presented it. Tom, is that accurate?

MR. MATTHEWS: To my memory. I believe we have dropped those early years.

MR. HUNT: Yes, we've dropped those early years, and so that was -- you have to remember that was a research study to figure out how to best develop an index, and I forget the second part of your statement at this point.

DR. SCHUELLER: I am looking at the stock assessment report quickly.

DR. SERCHUK: The nature of the discussion indicates to me that we have to be very transparent when we're making a recommendation about the basis for our recommendation. Clearly now we've seen that we're going to use the assessment for certain things, but not for other things. We have a published report that indicates one thing, but we're not considering it.

I am not denigrating any of those viewpoints, but I am saying, to the uninformed man from Mars, looking at different documents and trying to understand the basis for even the recommendation that we're faced with from the SSC, let alone our own, none of that interaction is manifest, and, if we're going to use the assessment for certain things, but not other things, because it was rejected, I am even more concerned. I just urge us to be very clear about what we're considering and why we're rejecting certain things and why we're accepting other things, in terms of crafting our recommendation. Thank you.

DR. BARBIERI: Fred, let me address that. I think that's a very good point that needs to be addressed. I agree with you completely that we need to be very clear and transparent about the reasoning behind any of the decisions that we make, but I think that, fundamentally, what happens is no science is completely unequivocal, and this holds true here as well. The issue is how much of the Florida Keys stock, or the U.S. stock, is dependent on recruitment from the Caribbean versus self-recruitment.

There are different papers, different lines of evidence, and some are genetically based, and some are based on connectivity and dispersion, and other indicators suggest strongly that -- That information, that fact, Fred, is not known with 100 percent certainty, and so we have different lines of evidence that seem to indicate that there is a very strong connectivity, and that, although there is some level of self-recruitment, it is not sufficient to count as really a source of recruits that would be impacting long-term resource sustainability, but, like everything else in science, there are different points of view and different approaches being used and scientific debates on the merits of any of these hypotheses.

The stock assessment was rejected as a way to provide quantitatively-based, stock-assessment-derived catch advice based on estimated reference points, because that panel, and that was a CIE panel, plus SSC, felt that the evidence was stronger towards the side of connectivity with the Caribbean instead of self-recruitment, but just to clarify the point that that is equivocal, in some way, and the idea in providing this briefing book was to present you with as much information as possible and have the committee members go through those and sort of make up their own minds based on the different pieces of evidence.

DR. SCHUELLER: Can I ask a question? The recruitment that is occurring in the Keys, we have said there is some amount of it that is self, right, but where does the rest of it go? Does it go along the Atlantic coast?

DR. BARBIERI: John, could either you or Tom address that?

MR. HUNT: First of all, let's go back to Mark Butler's paper on oceanography and lobster larvae. That estimate of some level of self-recruitment comes out of that oceanographic model, which essentially says -- I am going to use the word "perhaps", but that might just be my bias, but 40 percent of the larvae from the Tortugas area may come back into the Tortugas area, and they use the term "Lower Keys", but it's really, if you look at the model itself, it's really in the Tortugas area.

On the high side, that gives perhaps 10 percent of the post-larvae arriving in the Keys could be coming from, cycling through, that western Tortugas region. It takes a pretty unique set of oceanographic circumstances to get that to happen, because you have to entrain those post-larvae in the Gulf of Mexico for six months or so to get them to come back and self-recruit.

I think it's certainly possible. It's certainly possible, but, for the rest of the Keys, the larvae that are spawned on the offshore reefs might spend a little bit of time wandering in the Portales Gyre, but the Portales Gyre is an ephemeral feature off of the Lower Keys, and it very quickly gets entrained into the Gulf Stream, and those larvae then are in the Gulf Stream and head north.

Some of them get advected in cold-core rings, and some of them get advected in warm-core rings, and that is how you end up with spiny lobsters along the southeastern United States, especially on those tertiary rock outcrops off of North and South Carolina, and that is how you end up with lobsters in Bermuda, through the cold-core rings breaking off of the Gulf Stream. Beyond that, we don't really know how much advection from here occurs back into the Caribbean, if any. We just don't know that answer. I think that answers the question.

DR. SCHUELLER: It does. I mean, I asked that for a very specific reason, and that is that, while the fishery is mostly occurring in Florida, and it's split between these two management councils, the population is the U.S. population, I would assume, and I guess I didn't fully read the FMP, but how is the population delineated? Does it go all the way to North Carolina? Are we responsible for sustainability of this species throughout its range in the United States?

If that's the case, then we have to talk about this more large-scale than just what the fishery is doing in one place, in Florida, especially if that's feeding the rest of the U.S. coast. I guess I'm getting a little tangled up in exactly what it is that we're supposed to be doing here with respect to Magnuson and the population as the focus and not the fishery.

MR. HUNT: That's kind of for you guys to answer and probably not me, but, before we think about whether this group of lobsters here are the source, per se, for the east coast, you have to remember that it is a six-month larval lifespan, and so it is just as likely that a lobster in Honduras or a lobster in the Gulf of Batabano in southwest Cuba, et cetera, could be that source lobster for the coast of North Carolina, and I think the other thing is, if you look at the size structure of the lobsters on those various outcrops, they tend to be kind of one size structure at this one and a little different one at the next one, suggesting that recruitment is very sporadic at all those locations.

DR. BARBIERI: Thank you for that, John. Amy, does that address your question?

DR. SCHUELLER: Yes, it helps, but I am just -- I guess I am one of the ones that drove this discussion during the last SSC meeting, and my feeling was the documents that were provided had a lot of concerns in them, and then I felt like the only justification for increasing the catch level was that catch went up, and, if we're going to make a change and allow that catch level to go up, we need to have some more concrete statements about what is actually going on, and it's really hard for me to look at what's on a map here and try to find enough weight of evidence to say yes, that's no problem and let's go for it, especially when the 2016 report talked about growth overfishing.

Then you look at that length composition information, and there is certainly a smooth decrease in the larger sizes over time, and I am just concerned that the catch is really going up because effort is increasing, and that's stated a few times in some of these documents, and it's that we don't necessarily have a good handle on what's going on, rather than the fact that maybe the population might be going up. I don't know what the population is doing, but I don't think we can base it on what catch is doing, and so that's an issue for me.

DR. BARBIERI: Right, Amy, and this is the issue, or are the issues that all of us are struggling with. It's the complication really that comes when we don't have enough information about the productivity of the stock to have a catch level recommendation based on a quantitative assessment that can estimate all of those quantities that we usually use, and so you are right.

We are using a proxy, landings-based, for OFL and ABC, because we don't have really anything else, and it is equivocal, the degree of connectivity between the Caribbean and the Florida Keys, or the main portion of the population there, and how much self-recruitment actually is important to population sustainability, and I think that, basically, this is the issue that the SSCs have been struggling with.

I see, on the one side, Amy, your concerns about the lack of caution, given the fact that we don't really have conclusive information about the productivity of the stock really coming from the Caribbean and saying, well, we need to be more cautious, for all the right reasons, but, on the other side, Fred is saying, well, if we know that the stock is actually centered in the Caribbean and all that productivity that matters is coming from there, then I guess we don't need a catch limit at all and we can just set this as the highest catch ever, or ten times that value, and that will not impact sustainability.

My personal experience with this issue, over the last several years, is that the SSCs have been trying to balance those two things, and they went with something that is somewhere in the middle. Using the long time series of data, you don't need to be, any longer, as precautionary as the previously set OFL and ABC, but you also are not letting the fishery be completely unlimited or having catch levels based on removing everything that comes into the Keys, and so it's something that tries to basically set a compromise between those two points of view, because we don't really know what is going on with enough certainty to lean heavily on one way or another.

DR. SERCHUK: I have another concern. I think you've captured it very well, Luiz, but my other concern is, if we're going to use landings, I don't think the control rule is relevant for a resource in which a significant part of the productivity, if not the major part of the productivity, is outside of the area of U.S. control.

If this was a data-poor stock and we knew that the resource was completely from either resource surveys or from other information within the U.S. authority, then I can see the Tier 3a control rule, but I think we're fooling ourselves if we think that a control rule that is aimed at resource productivity for a resource completely within the U.S., where it's self-recruiting, is applicable for one in which we have a large measure of recruitment coming in externally.

I think using that approach is probably not the best approach. There may be other approaches. We may need to think about a new approach, but I'm just saying that we shouldn't be bound by it, because I think there is a large difference between the life history of this stock and the life history of other stocks that are completely self-recruiting, and so I offer it as a suggestion. Are we bound by a control rule, or can we basically look at this resource and say, look, this is different, and we're going to develop a new control rule for estimating the MSY and OFL and ABC, because this is a unique situation.

DR. ERRIGO: I was just going to speak to about how the SSC works, in terms of the ABC. You can deviate from the control rule as long as you have good justification to do so. If you feel that this species does not fall into the norm and there is something about it that, for some reason, it does not fit into any of the control rule categories, then you can deviate from the control rule, in that sense, as long as you justify it well and back that up. Also, our control rule, during recent

SSC meetings, when we have deferred to like the Gulf control rule and things like that. Here, we can do that, since the Gulf has used their control rule to put forth a suggested ABC and OFL.

DR. SERCHUK: Luiz, I think we're going to get to exactly the same spot. I am not concerned about the answer here, because I think the answer is going to be constrained by the data that we use, and the data that we're using are the landings data. I am more concerned about the logic in making the decision rather than the decision itself. You could get to the same exact spot by using two different types of logic, but one logic may be more harmonious. It may be more inclusive than just using a control that uses two standard deviations, irrespective of whether the resource is self-sustaining or not.

DR. BARBIERI: Yes, Fred, and this is correct. I mean, I think, really, the issue here is we are not bound by that control rule. The decisions made previously by this committee and the Gulf's was based on the control rule, because we felt that, in that case, it actually fit, but you may notice that, in reality, we haven't used the same level of standard deviations for any other stock, other than spiny lobster, to set the OFL and the ABC, and so we actually were much more liberal with the definition of overfishing and the ABC than we did for other stocks.

We tried to justify that based on the life history and connectivity of spiny lobster through the Caribbean, and so, to answer your question, no, we are not bound to that ABC control rule. We can propose something different, but, right now, the council is requesting our input on this issue, and we need to provide an answer, so they can move ahead. The fishery is facing closures, and there is a whole legal and administrative background going on, in terms of the application of the accountability measures and constraints with the fishery that need to be addressed. This is why I'm asking, if you're not going to use landings, which is fine, we need to come up with some other proposal.

DR. SERCHUK: I am not suggesting that we don't use landings, because I don't think there is -- We don't have any other basis, but just let me throw out an example, and I am not saying that this is the end-all, but suppose we say that we believe that the overfishing limit should be the highest level of catch we've seen in the fishery. That's around ten-million pounds.

Then we say, look, but we're concerned that that assumes that there is complete external recruitment coming in, and we don't believe that. We believe there is some self-recruitment, and so we're only going to take 20 percent of that, or we're only going to take 80 percent of that, as the ABC. That gets us down to eight-million pounds, which is essentially where the Gulf SSC came from. I am just saying would that logic be any stronger or weaker than the logic behind the recommendation that we were asked to comment on?

DR. BARBIERI: I would say neither nor, Fred. I mean, I think it's different. There is different roads to the same end, perhaps. We all have our particular thoughts on this, and that's fine. We felt, as an SSC, and this is the issue. If this brings us to the same general catch level recommendation, in terms of the quantities there, there amount of pounds, that are set for OFL and ABC, I think that the SSC preferred, in the past, to fit that into a control rule, because that's what developing a control rule was all about.

Now, of course, there are different ways to get to that same end. I understand yours, but actually we may be at the same place, and only based on a number of standard deviations, versus saying

some percentage of the maximum landings, I think. I would like to hear from other committee members as well who may have a feeling about this issue.

DR. SHAROV: Clearly the principal question was whether the stock is sufficiently self-supporting or is relying on external recruitment, and, based on the information that was provided, to me at least, it doesn't seem that we have a definite answer to that question. The prevailing opinion in it seems to be that the recruitment is supplied from other regions. On the other hand, as always, it's not very definite, and, therefore, there are alternative papers that suggest that there is some recruitment within the region as well.

The immigration from the outside is based on the ocean dynamics models, which are models, and so it's hard for us to evaluate to what extent. The directionality, of course, is more certain, but, in terms of percentage of the larvae that are coming from different regions, obviously that will all be dependent on certain assumptions we are making, et cetera. The ichthyoplankton data are always highly uncertain and have huge variability, et cetera, et cetera, et cetera.

It seems, to me, that although the dominating opinion is that most of the recruitment comes from the outside, we cannot deny the alternative either, and so, if we were totally convinced that we are having this stock just as clearly a sink stock -- I mean, that's what it seems like some people were arguing, arguing in documents that they have this special life history and, therefore, they should be excused from following the federal requirements, et cetera, et cetera.

This would have been easy, as Genny said earlier, at our meeting, that we can just fish it all if the larvae are coming from elsewhere, but I don't think that we are -- I am not convinced about that fact, that the stock is definitely dependent on the recruitment from the outside. On the other hand, even if it's coming from the outside, this is still not unlimited recruitment.

The idea of using the landings to set the ABCs is based on, as I understand it, the catch-only approach, and the time series was selected that seemed to be appropriate back then, and now the question is can we use a longer time series, and that would be fine if we were convinced that the variability in effort and the variability in recruitment are, if not random, but don't have a one-way trend, and that's what I was looking for.

I was trying to find information to see what's happening with the effort. Has the effort been variable, or has there been a one-way trend? What do we know about the relative abundance and the CPUE indices? What are they doing? What is causing the recent increase in catch? Is it due to increase the population size or is it due to an increase in effort? I still, after reviewing all the information that we have, I don't have a clear answer to those questions, and that would be helpful to make a decision on what to advise, in terms of setting the ABC.

DR. BARBIERI: Alexi, very good points, and since we have John Hunt and Tom Matthews on the phone, it would be good to have them -- John, can you address some of these questions that Alexi brought up?

MR. HUNT: We can start to have that discussion. The way effort has been measured historically has been the number of trips that the commercial fishermen take, and what is completely evident to us here is that, by far, the bulk of the number of trips, the overwhelming bulk of the number of

trips, and the overwhelming proportion of landings, occurs within August, September, and October of every season. Then there is some fluctuation after that.

If you then go to the end of the season, where we're starting to think there might be some greater effort, that still produces a very small proportion of the total landings, and Tom and I think that that continued effort is worth the fishermen's while, if you will, to keep some traps out there and keep pulling them, because they can have a low harvest, but, because of the live market, and if they have a higher proportion of lobsters that are in good quality, because that's an important factor for that live market, and maybe slightly a bit larger than you get at the beginning of the season, they get a higher price, and so they can have low landings and still make money.

When we're talking about increasing effort changing the landings, that increasing effort is continuing in the fishery longer than they have in the past, and it's during a time that landings are low, and so that's the first point that I will make. The second point is we recognize here that a trip is not the perfect way to view effort, because that trap is then sitting in the water, and so we're trying to revise how -- We are trying to see if we can get a better measure of effort that essentially would be based more on the number of days that traps are in the water and fishing and things of that nature, and it's something that is going to take us a while to get to, and so it's not worth talking about, because we're a couple of years away from having something that I think we would be widely comfortable with.

Finally, the landings, within the range that the landings have changed since 2000 to today, they have come back to sort of getting close to the long-term average. I don't know how to say that, but maybe Tom can say it better than I can.

MR. MATTHEWS: I will just do some real numbers. Let's say we had 100 percent of the landings in 2000. For the next ten years, landings were down to about 60 percent, and so we lost 40 percent of the landings for ten years. Over the last four or five years, they have crept back up 20 percent, and so we're now at about 80 percent of landings that we were prior to 2000.

MR. HUNT: The amount of effort change that has occurred in the past few years is not enough to account for the change in the landings.

MR. MATTHEWS: Trips has fallen apart as an indicator. We used to have, back in 2000, up to 1,500 commercial fishermen, and now we have 500. That 500, back in 2000, controlled 80 percent of the gear, and so there really hasn't been a big shift in who has the gear, but, because we've lost almost a thousand fishermen, using trips anymore is just such a poor indicator anymore, and it was never a great indicator, but it's what we had.

MR. HUNT: It's what we have to work with now, because there aren't any other options, but I think the real point I'm trying to make is that the fluctuation in landings that has occurred in the most recent years doesn't -- It doesn't really match even how maybe the number of trips have changed in recent years, and remember the extending traps into the later part of the fishing season produces a small proportion of the landings, no matter how many traps you have out there, because there are so many traps in this fishery that what is the percentage? 75 percent or so is caught in August, September, and October, and it's 50 percent in the first month. We can talk about changes in effort, but they are really changes in effort late in the season, when lobster abundance is very, very low, but price, especially today, can be high, because of the live market.

DR. BARBIERI: Thank you very much for that, John and Tom. I think this was very, very informative. Alexi and Amy, did those answers from John and Tom address your questions, and so you have any other ones or clarifications that you think you would like to get from John and Tom?

DR. SHAROV: Can I ask maybe just one simple question, if somebody could answer it. That recent trend in increased landings, do you believe that this is primarily the result of the increased effort, in whatever way we measure it, or do you think that it's primarily as a result of the increase in recruitment, or just an increase in the population size?

MR. HUNT: I will give my opinion, and this is John Hunt's opinion. It is based upon my history of thirty-six years here in the Florida Keys working with lobsters in the lab here. I will go back to the point at which the lobster landings here dropped precipitously, and we were all shocked. There was no doubt about it. The scientists were stunned. The fishermen were even more stunned, because it was their livelihood, and we all began a debate of why.

Of course, that debate is occurring after the fact, and you end up with two options. One option is you had a marked change in the arrival of post-larval lobsters here in the Florida Keys. In other words, that phase of recruitment to the fishery has changed markedly, and there were some people that tried to make that case.

The other option is there has been a change in post-settlement processes that have caused a reduction in the recruits to the fishery, and I'm sure you guys have talked about the lobster virus that has occurred, and there is an increasing amount of information that has occurred. Those of us that have worked here, the whole lobster team here, Bill Herrnkind and Mark Butler and their students, we all debated this back and forth, because we kind of found, and when I say we, I mean the big we, found that virus really by chance.

It was Mark's student at the time, Don Behringer, that discovered it, or at least followed through with that discovery, and has done a lot of the work on that. My take is that virus, and this is just my own professional opinion, that that virus became a much bigger factor here locally.

Either there was a mutation, perhaps, or perhaps something environmentally happened in the Keys that allowed it to be expressed more, and we all debated this a lot, usually over evening events, and so the debates became quite lively, but my point is I think the post-larval processes changed recruitment to the fishery, and some of it is just my sense that this virus became more prevalent, based upon kind of some of our sense of observational aspects of juvenile lobsters in past history, and the other piece of evidence is our post-larval index has not dropped precipitously, and so that has stayed essentially the same.

My take is we are, and this is my personal take, is we are seeing a recovery of the fishable population from a reduction in whatever these post-larval processes are, and I presume some response, interaction, between a host species and the virus, and that's my personal opinion. There is no science on this, as of yet, and so there you have my personal opinion, that we're seeing a recovery locally. Tom, you can offer a different one or the same one or --

MR. MATTHEWS: Flat out, we don't know.

MR. HUNT: That's right.

MR. MATTHEWS: Was it more loss of latent effort? Our fishermen have moved quite a bit further north now, and are they actually on new grounds? There is factors pushing this decision both ways, but, just flat out, we don't know. We are part of a bigger Caribbean population that has also apparently recovered very slightly from the lows in the late 1990s, but there are major reporting problems going on that we're not even confident when we get down into the individual countries.

I can pick apart landings from most countries based on international pressure that's put on them to report or not report, or black market landings, but, basically, lobsters have been doing what lobsters have been doing with us trying to catch them for many, many years, and they have been apparently resilient for the last fifty years, which I just cannot explain, as a biologist, but it comes down to landings go up and down throughout the Caribbean, and the best thing we can do is manage post-settlement processes to try to get the most landings per lobster.

MR. HUNT: Let me just explain the statement about expanding into new area, and that has occurred. We don't know exactly how much, but you still have to go back into the 1990s, and, as was pointed out, into the 1980s. There was an extended time period of much, much higher landings, and, from my perspective, there is no reason to expect that we won't see that again, along with the kind of three to four to five-year cycles that have been fairly evident in the landings.

DR. BARBIERI: Okay. Thank you for that, John and Tom. I think that was really helpful, because it provides perspective. We were provided a number of documents and a lot of information, but, as we discussed earlier, a lot of it is equivocal still and under discussion, and so it's difficult to sort out what sticks and what doesn't, and I think that having a bit of long-term experience perspective on these things helps us sort out, in our minds, a lot of what is going on, and so, with that, I am going to ask the committee to let us know if there are any other questions or issues that you have for our panel of experts or staff regarding this issue before we can move into action.

DR. SHAROV: Just one more question. There was a suggestion in one of the documents that there are indications of recruitment overfishing. Could somebody clarify that?

DR. BARBIERI: That's a very good point, Alexi, because I read the same thing, and I heard from other committee members, and, in looking at the YPR information, the analyses that was put there, I didn't feel that was the case, but I am willing to hear from others if there is additional information regarding the growth overfishing.

MR. HUNT: I am not as familiar with all of the documents as you folks are, and so I don't know where that was. If you guys want to lead us to it, we can talk about it.

DR. BARBIERI: Alexi, can you point it out? I don't remember which one of those documents, because we went through a whole bunch, and can you remember which one, or Fred?

DR. SERCHUK: Are you talking about growth overfishing or recruitment overfishing?

DR. BARBIERI: Growth overfishing.

DR. SERCHUK: It's on the spiny lobster review panel summary from March 8.

MR. HUNT: If we're talking about growth overfishing, I would say that is now and has been the case for the spiny lobster fishery as long as I have been here, and it's something that I think we tried to address in the 1980s by having some recommendations for some changes in the minimum size, and we also tried to address that in the 1980s with some recommendations for pushing the season back to later in the season and capturing kind of one more molt, because growth rates are more rapid during the summer months, especially for those just sub-legal lobsters, in the sixty-five to seventy-five millimeter size class.

All of those suggestions were -- It was a very different management regime, I will grant you that, but they were rejected, and it comes down to kind of market reasons and also cultural reasons in both the recreational and commercial trap fisheries, and so we accept growth overfishing, and we could all develop models that could suggest that they could have a higher landings and other aspects of changing the fishery from a landings and probably from an income perspective, but they fight against all the other information that comes to our managers. Recruitment overfishing, if it's in there somewhere, I don't buy it.

DR. SERCHUK: Can I ask a question? I accept what has just been said, and I'm trying to harken back to some of the discussion that we've had on possibilities of what could be some low level of self-recruitment. If we increase the minimum size, it would have some benefits on yield per recruit is what I just heard, and presumably it would also have some benefits of allowing some increase the spawning stock, even if the spawning stock doesn't contribute the lion's share, and I'm just wondering whether one might consider that as a buffer against the uncertainties that we have regarding the recruitment dynamics of the stock as well as the idea that growth overfishing is occurring.

DR. SHAROV: But we might already have a buffer. We just don't know. That's the problem. The population seems to be constant, and it has been stable for quite a while. The fishery is relatively stable, and there is variability in the catch, but that's what you would expect for anything.

DR. SERCHUK: I am just concerned that when we think about ABC that we're thinking about a buffer from OFL, depending on all the uncertainties that we have with the science. That's all I'm concerned about.

DR. BARBIERI: Fred, I think that is a valid concern. I just don't know whether this is the proper time and place for us to get that addressed. I mean, I can see us requesting some additional analysis for some future time, but changing the size limits based on additional conservation or precaution against recruitment overfishing, that is going to be debated, and I don't think we have, in front of us now, the information needed to go that way.

DR. SERCHUK: I accept that, Luiz, except my concern is what we're talking about, in terms of spawning stock biomass per recruit and yield per recruit, we know that science. All the other things that we've heard have all been caveats, using the landings as a proxy for productivity and where is recruitment coming from. I have seen no hard science in any of that. I understand all of that, and I understand why we're in a predicament, but I am loath to basically say, well, the science is going to create problems now.

DR. BARBIERI: Fred, I don't think it's the science creating problems. I think it's a matter of evaluating what the management goals of this fishery are. If we're going to be managing for maximum yield or MSY, simply from a growth overfishing perspective, this may not be what the market wants or the fishermen want. If there is no well-defined conservation benefit, I don't know what that would add. I mean, that's my question. I understand your point, but --

DR. SERCHUK: You misunderstood me, Luiz.

DR. BARBIERI: I'm sorry.

DR. SERCHUK: I agree with you, but what I'm saying is would there not be some increase in the spawning stock by increasing the minimum size?

MR. HUNT: I will respond to that. The first logic is yes, but you still have to remember that this fishery is very, very intensive. There are very small numbers of age-three and above lobsters out there right now, and that would change some, but we don't know how much, because of the intensity of this fishery.

It would also change more so in the Keys proper than the Tortugas, because the Tortugas, which is where, if there is any self-recruitment, is where that self-recruitment most likely occurs, based upon the ocean dynamics modeling work that's been done, and those lobsters are, right now, very, very large compared to the rest of the stock.

My projection is that portion of the reproductively-sized lobsters out there probably wouldn't change very much, and so it's hard to predict what that benefit would be. I mean, it's something we could all work on for -- These are all topics that this lab down here could work on. We are basically, pretty much, the four people that actively work on lobsters here in the Keys. We're pretty much your science team, and so there is some of the reasons why this information is limited.

DR. SERCHUK: Thank you for that.

DR. BARBIERI: Okay, folks. I think we are at a point, unless there are additional questions or clarifications, for us to go to our action item. Any other questions or thoughts from the committee?

DR. SHAROV: I am ready to propose an action.

DR. BARBIERI: Excellent, Alexi. Please.

DR. SHAROV: Obviously, based on the discussion, clearly we have quite a bit of uncertainty here, but it's also somewhat clear to me that we have quite high fishing mortality, since we don't have many lobsters that are older than age-three, and yet we have a rather stable fishery for the period of twenty or thirty years, at least. Yes, there was a decline in the early 2000s, and there are different theories as to why that happened. I didn't hear that somebody suggested that it was due to overfishing.

That, in some sense, supports the concept of external recruitment that -- In this case, obviously, that's probably the only way for the population to remain sustainable when you have a high fishing

mortality rate, and so I think I would suggest to support the Gulf of Mexico SSC's recommendation to extend the reference period for calculation of the ABC and ACL, and I would consider this as a stopgap measure.

We don't know much about the population dynamics of this stock. I suspect that it's possible that in a year or two that the fishery will again exceed the ACL and we will be asked the same question of what do we do next, and I think we need to have more discussion as to how to approach a case like this. It's a big challenge, as Luiz said.

We have struggled with this in the past, but I don't think, within these two hours, we will come up with a sound scientific analysis, but I think, considering the facts, using a longer period, we could assume that that period covers the natural variability in recruitment as well as some variability in effort that goes up and down with the market forces and whatever else, but we are observing a stock that is in a quasi-equilibrium. If the committee would agree with these observations, that would be good. If not, please say so.

DR. SCHUELLER: I agree with this. My one other suggestion would be to really buckle down and try to get a metric for effort over time, because I think that would be helpful here as well.

DR. SHAROV: As well as CPUE, if we could come up with any CPUE measures as well.

DR. BARBIERI: To that point, I can tell, because conversations that I have had with Tom Matthews and John Hunt is that they are really focused on exploring really this information on effort and trying to find out a better metric and something that will help us understand changes in effort for this fishery, and so that is, fortunately, being addressed.

DR. SCHUELLER: Good. Hopefully this can help them, if they need it, as a way to show that what they are working on is important.

DR. CROSSON: I just want to say that Alexi put the logic of this decision very well, and so I just want to commend him on that. I really like the way that he outlined how we reached this conclusion, and we've come to this before with wreckfish too, which is another species where almost all of the recruitment appears to be coming from the outside, and so, at this point, it's something that we need to incorporate into the control rule.

DR. BARBIERI: Yes, I agree. Excellent summary, Alexi, and thank you for that.

DR. SHAROV: You're welcome.

DR. BARBIERI: Folks, as you can see there, if you are looking at your webinar screen, Mike E. is taking some notes there, in terms of fleshing out bullet points that we're going to need to develop for the narrative of our report. Any additional points from the committee regarding Alexi's recommendation?

DR. SERCHUK: Just one question. When you say the recommendation, that's also as applied to their harvest control rule, Luiz?

DR. BARBIERI: To their meaning the Gulf SSC?

DR. SERCHUK: It's using the plus or minus two standard deviations?

DR. BARBIERI: Yes, I believe that's what -- Go ahead, Mike E.

DR. ERRIGO: That was my understanding from what Alexi said, was to use the Gulf SSC's ABC control rule and modify the reference period to include the extended period of years, 1991/1992 to 2015/2016.

DR. SERCHUK: If you could just simply remind me why the two standard deviations was chosen.

DR. SHAROV: That was a very arbitrary decision, I am guessing.

DR. BARBIERI: Yes, and the two standard deviations were chosen because that would put the OFL, Fred, actually higher and provide sort of like a softer control of the fishery, based on the fact that a lot of the information indicates this external recruitment, and so the idea was --

DR. SERCHUK: Okay. Fine. Thank you.

DR. BARBIERI: It may seem contrasting, not agreeing, with a lot of the other discussion, but, as I mentioned before, Fred, this isn't perfect, and I understand your concerns, but I think what the committee was trying to reach was something that was a balanced middle ground and not completely unconstraining the fishery.

DR. SERCHUK: I would like to see that logic included in our supporting our recommendation. That's the logic.

DR. BARBIERI: Absolutely. Right, absolutely.

DR. SERCHUK: Because it's obscure right now, Luiz.

DR. BARBIERI: Fred, good point, and I will work on that as I draft the first version and send it out for everybody's review. I will try to be more clear about that part, Fred. That's a good point.

DR. SERCHUK: That would be helpful, because, as you said, it seems like it's contrary that we have larger error bars around how we're treating this resource when we know so little about it.

DR. BARBIERI: Right. Okay. Any other questions or comments from the committee?

DR. SHAROV: Just a question of whether we are going to come back to resurrecting this discussion at some time next year, and I don't know what the council will decide on this, but is there an intent that we should be reviewing this again? That's what my hope was, that we would spend some time in the future on this.

DR. BARBIERI: Kari can give us a review of the timelines again of this to go before both councils and then when this could become implemented.

DR. MACLAUHLIN: The South Atlantic will get whatever recommendations that you make here at their December meeting, to provide direction to staff, which we will be providing over to the Gulf Council. The plan development team, which is the council staff and Southeast Regional Office staff, we are working on the options paper for the Gulf of Mexico Council's end of January meeting.

That is going to have the draft actions and alternatives. The Gulf Council will review those and add or edit or delete them, and then they will send it back over to the South Atlantic Council. The South Atlantic Council will do the same thing, and then we are scheduled for approval by both councils at the June meetings. Both councils meet in June, and so I would say implementation for a framework amendment possibly could be effective by the end of 2017. It usually takes at least four to six months, depending on other priorities at the Southeast Regional Office.

DR. BARBIERI: Thank you, Kari. Alexi, with that in mind, we can add something in our report that requests that we revisit this discussion or get an update on the current status of the science or any advancements that may have happened either sometime in 2018 or late 2017.

DR. SHAROV: Yes, and I think the fishery performance in the next couple of years will be important, as well as we heard that, within a couple of years, the better effort calculation and CPUE would become available. That would be a good point to revisit it.

DR. BARBIERI: Right. Yes. Any other comments from the committee or questions regarding this item before we close this action item? Hearing none, we can consider that action has been taken and Agenda Item 2.4 has been completed. That moves us into Agenda Item 3, Other Business. Is there any other business that the committee members would like to bring before the committee?

DR. SERCHUK: I have one question, Luiz. The action items says the recommendations for ABC and OFL. Should we be more explicit about that, what those values are, in our report?

DR. BARBIERI: Yes, I think so, and I had the same question, Fred, and I had emailed Mike E. and Kari, and Kari had those values, the specific values, for OFL and ABC in her little presentation, the short presentation, and so I will make sure that I copy those into our report, so we have those quantities explicitly there, and good point.

DR. SERCHUK: Good point.

MS. LANGE: Luiz, I am wondering, are we looking at just this year, this upcoming fishing year, or should we be looking at using the methodology until we can get additional information, like the better effort data and better CPUE indices? Is this something that we will be doing every year?

DR. BARBIERI: No, Anne. This is actually what is happening, the latter option that you mentioned. Basically, there were changes in the fishery that triggered this review of the current process for setting ABC and OFL, and so we are reviewing and revising this right now and proposing that, until additional changes are recommended, this is the process that is going to stay in place.

This is kind of like the equivalent of us having a new OFL and ABC every time that we have a new stock assessment and we have an update or a new benchmark. We basically refresh our estimates of OFL and ABC, and so this is going to stay on the books until there is a reason for us to change it.

MS. LANGE: That's what I was hoping.

DR. BARBIERI: Right, and I think what Alexi was recommending is that we sort of keep our finger on the pulse of this fishery and perhaps, in a couple of years, we will come back to take a look at whatever new information we have to reevaluate this decision. Fred, did you have another point?

DR. SERCHUK: No, but just the obvious point is that the catch targets are going to be higher than any catch we've seen in many, many years, but, again, that's related to the two standard deviations and the way these numbers relate to that, and so we're really recommending a much higher catch target, or a much higher ACL, than any of the catches that have happened since 2000, in fifteen or sixteen years.

DR. BARBIERI: Right, and I don't see a problem, Fred. I would like to hear what the committee members think about this, but I think that is something that can be explicitly laid out in our report as well, because, as scientific advisors to the council, there is nothing that says that we cannot provide them with information about risk of overfishing or any management risk associated with any fishery, and so this might be good information for them to have in front of them.

DR. SERCHUK: Yes, as long as it's properly caveated as you expressed, Luiz, I think that's fine. It will just be striking, quite frankly, to see these new numbers.

DR. BARBIERI: Yes, and, as you mentioned earlier, Fred, I think we need to add narrative and justification and provide good rationale for each one of these discussion points and decisions made and help them understand why we got there.

DR. SHAROV: Fred, you are concerned, but these are based still on the catch statistics from 1991 through 2015, and so all the variability of that period includes is the primary source of that ABC and OFL advice, and so it's still within the observed limits.

DR. BARBIERI: Right. Okay. Thank you for that. I think we are ready to move on to Agenda Item 3, Other Business. Any other business that this committee would like to discuss? Hearing none, we are ready to move on to Agenda Item 4, Report and Recommendations Review. Mike E. put there on the screen now the summary that we have. Since this is a webinar meeting, instead of reading through these statements, I am going to just give everybody a minute or two to go over those notes and let us know if there is anything that you feel should be added or edited for the notes that are now on the board.

DR. ERRIGO: Luiz, if you don't mind, in case anybody was curious about how our control rule might have handled spiny lobster when we fed it through ORCS, I actually did the calculations, and so here is the Gulf's recommendation for OFL and ABC, and I didn't know how it would fall out, and so here is the risk of overexploitation, all of them, with the scalars, in this column. This is the council's risk tolerance, which they choose, all of them listed for each of the overexploitation

status scalars, and this is the catch statistic. These are the resulting ABCs from the ORCS method. Very few of them are at or below the Gulf's ABC recommendation.

DR. BARBIERI: Right. Thank you for that, Mike E., because that adds perspective. Again, looking at the report bullet points that that Mike E. has captured, any additional points or comments or suggestions from the committee? Hearing none, I will remind the committee that, of course, a draft report is going to go out for all of you to evaluate and to read and to review and edit, and so anything that you want to add to the list that's here would be welcome.

That completes Agenda Item 4, Report and Recommendations Review, and it is time then for us to adjourn our meeting. Any other comments or questions for the committee before we officially adjourn?

MS. LANGE: Luiz, what is the timeline on getting the draft and getting our comments back to you or to Mike?

DR. BARBIERI: Good question, Anne. Mike E., do you have that in front of you?

DR. ERRIGO: I'm sorry, but what was that?

DR. BARBIERI: What is the deadline for us to get our report finished?

DR. MACLAUHLIN: I just wanted to let you know that the Spiny Lobster Committee of the South Atlantic Council will meet on Tuesday, December 6, and so at least a draft of it I would need, at least with the recommendations and everything, just so they know what's going into this.

DR. BARBIERI: Anne, I am going to try to speed that up and have a draft out to everybody either by the end of today or by noon tomorrow. Actually, no, because I have Gulf SSC webinar tomorrow morning, and so either by the end of today or the end of the day tomorrow.

MS. LANGE: We should get it back to you by the end of week or something?

DR. BARBIERI: Not the end of the week, considering that this is Thanksgiving week. Let's think about the following week. Let's take a look here. If you get it back to me by December 1, next Thursday, I think that that will be plenty for me to incorporate any additional information and have it out to staff for inclusion in the council's briefing book. Okay. With that, just to reiterate that I am going to be distributing the draft report either later today or later tomorrow, and then I'm going to be sending out an email to the whole committee asking for us to have -- If you could return that to me by next Thursday, December 1.

Let me take this opportunity then, before we adjourn officially, to thank all the committee members for joining in today and participating. I think we had a very good discussion, that I think really helped us move forward. Many thanks to staff, Mike E. and Kari and others who were involved in putting these materials together. I think all of this was very helpful.

Last, but definitely not least, many thanks to John Hunt and Tom Matthews for taking the time to join us and be available for all of the questions and all the clarifications and all the discussion

points that you guys brought up to help inform the discussion that I think were really, really helpful. Unless there are any other issues, Mike E., I think we are ready to adjourn.

DR. ERRIGO: That's great. Thanks, everyone.

DR. BARBIERI: Thank you, and Happy Thanksgiving. Thank you, everybody, and goodbye.

(Whereupon, the meeting was adjourned on November 21, 2016.)

Transcribed by: Amanda Thomas

November 2016

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