

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SOCIAL AND ECONOMICS PANEL

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SUMMARY MINUTES

Social and Economics Panel

Dr. Scott Crosson, Chair
Dr. John Whitehead
Dr. Kurt Schnier

Dr. Sherry Larkin
Dr. Chris Dumas
Dr. Jason Murray

Council Members:

David Cupka

Council Staff:

Gregg Waugh
Kate Quigley
Myra Brouwer
Andrea Grabman

Kim Iverson
Anna Martin
Kari MacLauchlin
Julie O'Dell

Observers/Participants:

Monica Smit-Brunello
Dr. Bob Shipp
Nik Mehta
Dr. Marcel Reichart

Dr. Jack McGovern
Dr. Carolyn Belcher
Dr. Bonnie Ponwith

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The Social and Economics Panel of the South Atlantic Fishery Management Council convened in the Crowne Plaza Hotel, North Charleston, South Carolina, Tuesday morning, February 15, 2011, and was called to order at 9:00 o'clock a.m. by Chairman Scott Crosson.

DR. CROSSON: All right, I guess we're going to get started. Welcome to the first meeting of the Socio-Economics Sub-Panel. I guess we all know each other. Before we introduce ourselves, does anybody have any objection to the agenda as it's laid out right now, which I'm sure is extremely flexible and could be adjusted as time permits? Okay, now I guess we should just start going around the room and introduce ourselves and perhaps explain where we're from and what our experience is with fisheries management and everything else.

MS. QUIGLEY: I'll start off. I thought that it might be a good idea for us to just introduce ourselves and talk about why we're here and what our expectations are as a participant of the Social and Economics Panel. This is a subgroup of the SSC. For a while the SSC has been primarily focused on biological aspects of the fisheries management.

We have been talking about this for many, many years and thought this would be a good idea to get some of social scientists and economists together to talk about some of the economic and social aspects of fisheries management, so that's why we're here. My name is Kate Quigley. I'm an economist for the South Atlantic Fishery Management Council.

I've been here for almost years and have primarily worked on, well, every amendment and economic portions of the amendments but also primarily focused on catch shares. What I'm kind of hoping is that I can have some people to brainstorm with and we can have some conversations about catch shares and whether they're appropriate for the South Atlantic Fishery or not.

We've got two active catch share amendments going right now, one for snapper grouper and one for golden crab. We'll get to those later today. I'm kind of hoping that we can just have some conversations about the actions and alternatives that we have laid out, are they appropriate, are they not appropriate, are there things that we're missing in there, and other economic conversations that have been needing to happen for some time.

MR. WAUGH: Good morning; my name is Gregg Waugh. I'm the deputy executive director. I've been with the council for a little over 30 years. I'm a biologist by training, and I'm only poaching at the table for a little while. I'll remove myself and leave you guys to your business. What I would like to see come out of this group – and for some of you, we've talked about it for quite a while – is modeling how fishermen are going to behave in the fact of all these regulations.

I'll get into more detail when we get on that topic, but that's one of the big items I'd like to see come out of this group. The other is the biologists tend to think that the world ends with them, and to me what we're creating is the ceiling; and, quite honestly, it's creating quite a mess in the fisheries with all these closures and whether or not we're really getting the reductions we're looking for with effort shifting, discards.

It certainly is making it hard economically for the fishery to continue. We're looking to you guys to sort of see if there is some way we can introduce some more rational behavior and not necessarily catch shares but anything that the council can do to make more rational for fishermen to exist under these multiple quotas that we're implementing.

DR. MURRAY: Good morning. I'm Jason Murray. I'm an economist at the University of South Carolina. I don't really have any expectations or have any idea what to expect at all except for what you guys just said.

DR. WHITEHEAD: I'm John Whitehead, Appalachian State University. I've been on the SSC for a long time. I was on there before the reauthorization of the Magnuson Act. We had a bunch of economists and social scientists and we had a pretty active effort on the SSC; and since reauthorization things have just been overwhelmed with the biology, as Kate said. It has been kind of frustrating for myself and Sherry and Scott and all the other social scientists who dropped off. I'm pretty excited about what we might be able to do.

DR. MacLAUHLIN: I'm Kari MacLauchlin. I'm the new social scientist for the council. I started at the office yesterday. I'm really excited about this. I didn't know that this was the first meeting ever of the SEP. I have lots of plans for us; I hope you're ready. I was a Canal Fellow up until the end of January at the NMFS Policy Office.

One thing that we talked a lot about was now that all the ACLs are about to all be set where you've hit that deadline, now it's time to start focusing on fishing community goals. I think that's what this panel will be at work because that's going to be the next focus. I think there is a lot of great stuff we can do and work together.

DR. LARKIN: I'm Sherry Larkin at the University of Florida. There it is again; after they set the ACLs, then we can come and play. That has been a continuing source of frustration. I think John and I both started in 2004, so we're really old in terms of committee-wise. This catch shares was contentious but it's really interesting, hopefully. I don't know how to navigate through, but I'm hopeful that maybe people will look to us for some feedback.

I think how this started is good when there was a discussion of trip limits. I think it's very encouraging that the other members of the SSC sort of recognized that here is maybe where we could play a role. We haven't been invited to really give any kind meaningful feedback before, so hopefully that's an encouraging first step.

DR. SCHNIER: I'm Kurt Schnier out of Georgia State University. I guess I've been involved with fisheries research for probably eight or ten years now. Most of the stuff I've done is behavioral modeling. I've had very limited work in the southeast region and down in the Gulf, mostly; one paper I think with John; and actually it was with Sherry at one point.

Most of my stuff has actually recently been focused on behavioral models of the recent transitions in the crab fisheries up in Alaska. I'm looking at how people respond to the crab rationalization programs up there and how it has impacted the system. As far as getting involved with this group, it's a good opportunity to sort of stop hanging out in front of the computer.

DR. CROSSON: My name is Scott Crosson. I am on the SSC I guess now for the past three years. At the point that I joined the SSC, I was working for the state of North Carolina as their sole social science and economics researcher for marine fisheries. I am now down in the NOAA Southeast Fisheries Science Center where I'm an economist, but my actual background is political sciences, so I kind of wear more than one hat here.

Sherry, John and I have been sitting through an incredible volume of meetings where biological factors and ABC have been discussed, and there haven't been a lot of discussions about social science stuff. At the National SSC Meeting that I attended here in Charleston I guess in October or November – I can't remember which – that was something that came up across the country is that there is a big shift now and everybody is interested in seeing what happens now that most of the ABCs have been set and the councils have had to deal with that.

I think that's going to be a topic next year when the Mid-Atlantic hosts the National SSC Meeting is what is the SSC's role in dealing with social and economic factors? This is hopefully going to contribute to that.

MS. QUIGLEY: Okay, just a couple of things; we have David Cupka in the room. He is the Chair of the South Atlantic Fishery Management Council. We also have Myra Brouwer here who works primarily on snapper grouper issues, but is our former corals' person for the South Atlantic Fishery Management Council. We have Julie here, who is our administrative person.

One more thing about the agenda before we get started; this is going to be very informal. We have some things prepared, but it's basically kind of wide open and for you guys to decide where we want to go with this panel and what you want to say. We're looking for you guys to kind of lead this.

We have some things that we're interested in getting response to, but you can really take it wherever you like. We've got Agenda Number 2, Review of the Gulf of Mexico Red Grouper Evaluation, and Gregg Waugh is going to provide some background on that.

MR. WAUGH: If I could, just before I get into that, maybe come back to the points you and Sherry made under other business and talk about where you all feel that social and economic considerations should be considered in setting these limits. Certainly, the overfishing level is a biological determination; and then when the council sets the ABC, that is supposed to reflect uncertainty with the stock assessment. Now, can you put in some economic uncertainty there; I don't know. My read of it is primarily that's a biological determination of uncertainty, uncertainty in the biological stock assessment. Then the council sets the ACL.

Again, that's supposed to take into account some of this biological uncertainty. Certainly, when we talk about then setting – and there may be some implementation uncertainty there, but when we talk about setting an ACT, to me that's a clear place at least in my mind where you can consider social and economic issues., because there you're talking what level of harvest do we want to target to ensure that we don't trigger our annual catch limit that we're not to exceed.

I think it would be helpful if under other business or some point here you all talk about that and we get a clear understanding of where you all think you should have social and economic considerations enter. I think that would be very helpful to the council.

DR. CROSSON: It doesn't matter to me if we start with as an item beforehand or we finish up afterwards. What is the preference of the committee on this? I think our agenda is not too heavy. I know a lot of times these things tend to drag on. At least at the SSC meetings they tend to really drag on and we get compressed towards the end of the day or the end of the several days, but I think our agenda here is pretty manageable right now, and we could start with that discussion, if you would like.

DR. WHITEHEAD: You can correct me if I'm making this too simple, but early on, before we got into the ACLs and all that, there was always a discussion of optimal yield from the fisheries. It seemed like the rule was something like we'd find the maximum sustainable yield and then 90 percent of that or 75 percent of that was by rule the optimum yield; does that sound right?

MR. WAUGH: No, there was never – there may be some instances where we had set up a general formula, but the closest equivalent I can come to is how we did mackerel management for a long time, because that was where we had an ABC, an allowable biological catch.

DR. WHITEHEAD: This was before the reauthorization, so way back, whatever it was. An economist would look at the yield and think of that as benefits, and you could monetize that with market prices, and then we would think of the cost of effort and try to balance those. We would try to find catch limits based on those benefits and costs. That is happening with the biologists at the same time. That is where I think economists like to come in and not before and not after. Does that sound right; people who know the commercial side better than I do?

DR. LARKIN: I'm trying to think of a good example right now, but what comes to mind – I mean, we have sort of two different – I don't know how this committee can operate, right. So I can see – because I've been through some of these SEDAR processes before. You know, a lot of times when they make assumptions about their F, it's just assuming status quo, and sometimes you just don't even realize it.

I mean, it's all these projections are based on behavioral assumptions, which oftentimes aren't discussed until there is somebody savvy in the room that says, well, a minute, if you do this, this is what we're going to do. I mean, in some sense in terms of actual management, it could even start there. What are we as a committee going to do; I don't know.

In the past you've tried to get some of to sit through these meetings, but they're long and time-intensive and time-consuming, and one person attending one meeting isn't likely going to have that much of an impact. I mean, I don't know; you know, we can review – what we've done in the Gulf is review papers that have come out that have been relevant.

Now, I noticed one of the attachments we got I think is the same paper that went through the – I was going to ask if it's the same one that went through. I mean, we can serve as a review body. Sometimes that's not overly satisfying. I don't know; there is sort of the reality about what

might help make a change in terms of the process and what we can effectively do as a body. I don't have a concrete recommendation for that.

DR. WHITEHEAD: To add to what Sherry said, I think we'd all like to help. I mean, we used to help and now we haven't had time to help. I understand the constraints placed on the SSC. I don't want to sound whiney about it, but it seems like there are issues that we can help address; and whether that's reviewing and just talking about different ways of allocating fish, it doesn't matter to me.

MR. WAUGH: To me, certainly, reviewing is one part of it and I think a critical part; but as Sherry said, that to me is the less interesting part. That's sort of the mundane side of it. It's important and we need that, but to me the creative side I think you hit on, Sherry, with this idea of interjecting at the assessment level, when they start to do their projections, what are fishermen going to do and they're making very simplistic assumptions.

I'm glad to hear we've got someone that has done behavior studies. We've talked about this before. Waters has done a little bit of it with his model, but that's just a start. I think that's critical because all we're doing right now is putting in the gross cut at these limits; and people are out there fishing for other species and discarding, so we don't understand even biologically what the really total mortality is going to be.

I think your idea of providing some input at the SEDAR stock assessment level that they can use to incorporate into their projection models would be very helpful and I think very interesting. As far as what you guys do, your primary staff is sitting here, Kate and Kari. John Carmichael heads up our science and statistics side of the shop.

You guys do report to the SSC, but you all have a lot of latitude to design how you want to operate. I think sort of the one cost of being created is some of this reviewing documents periodically, but then the rest of it – like I said, I'm moving away from the table and you guys figure out how you want to operate and what you want to do.

DR. LARKIN: One comment about where we might have a little bit of an input that strikes me – and I don't know if it's semantics and I don't know if it has been figured out or not; but this notion of what we can offer being projections about how people behave and how that all impacts, there is a distinction between sort of management uncertainty and biological uncertainty.

I've heard some people categorize the economic response as the management uncertainty side, so that it should come in after. I mean, I may be categorizing and I don't know if that necessarily is true. I somehow think it's just a little bit of semantics, but I do think that may be something that we need to address; where does that come in?

I obviously would like to see our input sooner rather than later, and you wouldn't chalk that up to tacking on some precautionary measure at the end when it can be accounted for at the beginning. And, you know, early on we saw a figure, and I don't know whatever happened to it, when they were describing this whole process, and there was more of a feedback loop. The sort of

management social side did come in earlier in that picture. I know that sort of graphic has been refined over time, but that may be something that comes up.

MS. QUIGLEY: One thing to let everybody know is Kari and I will be staffing the SEP. What we've done for this first agenda is the first two items are things that council members had asked for, and those are things we have to do. The rest of it is just kind of things we thought would be interesting, but this agenda and how we conduct the meeting over the next couple of days can be all over the place.

We can change, we can do whatever you guys think is important. If there is an agenda item that you don't think is important, that you don't want to do right now, that's fine. We can go over it very briefly and then move on to something else. If there are things you'd like to add on, please do that. You can also please feel free to call or e-mail Kari and I and let us know what you're interested in talking about for the next meeting. Whatever you guys are interested in is what we're going to be interested in unless we get special requests from council members to review things. It looks like David has got something to say.

MR. CUPKA: (recording starts here) – to try and project what the impacts will be; and to do that we assume certain things that these fisheries are static and they're certainly not; because the minute we put something in place, it affects the behavior on the fishermen. We never seem to get, for example, the percent reduction we're looking for from an action because anticipate how the fishermen are going to react.

These fishermen are always finding ways I won't say to get around things, but to find ways to stay in business and so if there is any way that you could provide input on that. Again, I think the assessment level would be a good place to do that, but we've seen this happen so many times that we need X-percent reductions and so we're going to do this, and we assume that's going to get us X-percent, and it doesn't because they change their method of fishing or they find ways to get around it.

I hope you would have some more discussion on that. I realize it's hard to come up with something definite to put into the management process, but that's the sort of thing that we need to do more of in the future as we move past these biological limits and start to consider the social and economic impacts.

DR. CROSSON: Can I just interject something really quick for you, Kari. Take whatever notes you can while this discussion is happening. I don't feel the need right now to assign somebody to do be the notetaker, but at some point I'm going to have to try and compile this probably with Kate's assistance.

DR. SCHNIER: I think if we're trying to figure out what role we can play here, I think as economists we're trained to think about how people are going to respond to these regulations. One of things, when we're looking at these different proposals and different actions like catch share programs or how you break up the allocation between recreational and commercial or whatever, we're in the back of our mind thinking about how they're going to respond to that, and one of the things that we probably envision with some of the policies is the long-term impacts of

the data; knowing that if you're doing things like changing a bag limit, well, we know immediately they're going to fish more.

I mean, things like that, those are things we can always be thinking of, but that's where I think that our expertise really comes into play here and not necessarily on the biology. I know very little about biology. That's what I would think. Jason probably knows more than I do.

DR. MacLAUCHLIN: I have just a question. Can we have more people on this panel, like maybe an anthropologist or two, sociologist, something like that? We seem to be a little heavy on the economic and not so heavy on the social. Can we add more people; is that a possibility?

MR. WAUGH: Certainly, if the group feels that there is some expertise that we should add, make that recommendation and we will forward it up the line. It does have budget implications, so it will be up to our executive and finance committee. They are meeting at the upcoming March council meeting. If that's something the group feels that you want to recommend some more expertise, some more individuals, make that recommendation.

DR. WHITEHEAD: The number of chairs around here; is that the quantity limit that was set?

MR. WAUGH: No, but the budget will ultimately drive it. Again, we see this group not necessarily having to meet in person as often. That shouldn't limit work, so there are perhaps ways to expand it. But, no, there is no limitation outside of the obvious budget implications. I wouldn't be limited in your recommendations; do what you think what you need.

DR. WHITEHEAD: Yes, I think it would be a shame if this group moves forward with just economists on it and Scott.

DR. CROSSON: Who is technically an economist with his job description. If there is somebody we have in mind, I don't have a lot of academic connections as you all have.

DR. SCHNIER: My suggestion would be Tracy Yandle out Emory. She is in environmental studies, and I believe she is a political scientist by training. I could look her up right now.

DR. MURRAY: Are there any fishery sociologist; I don't know of any.

DR. MacLAUCHLIN: Well, there are fisheries anthropologists; there is not a ton of us. Well, Ava Lasseter is the new social scientist on the Gulf Council, and she is like a friend of mine. We went to school together. She feels the same way about her SEP, and we have been talking maybe we can make a trade for the councils.

It would probably be good for Ava and I to know what is going on in the other councils, anyway, since we do a lot of work together. I mean, that's something that would have to go all the way to the executive directors and everything. She was willing to do that and I would be willing to make the trade. That's just an idea.

DR. SCHNIER: And I found out a PhD in public policy from Indiana University, their School of Public Environmental Affairs and Political Science Department, so that would be more of non-economics person.

DR. CROSSON: Did she work with Elinor Ostrom or some of the – I would think Indiana University; that's the first thing that popped in my mind.

DR. SCHNIER: I believe so, yes.

DR. WHITEHEAD: Jeff Johnson and David Griffith from ECU were on the SSC several years ago and they know all about fish. Jeff is a sociologist and David is an anthropologist.

DR. MacLAUHLIN: Also, I think he is working on his PhD but Manoj Shrivani. He has worked a lot with the Keys fishermen, and he is kind of an economist/anthropologist but knows the fisheries really well on the social side. He is a FIU right now working on his PhD.

DR. LARKIN: I think I asked him and he said because of his involvement with the CIE, he couldn't do that or there would be a conflict. He would be fantastic. He might have already approached about this.

DR. CROSSON: Okay, I guess the next thing will be when I report I guess to the general SSC we'll bring that up with them the possibility of exploring this and maybe creating a larger group and then they can forward that on up to the council. I guess that's the chain of command for all of this stuff, right? Okay.

DR. SCHNIER: I just would like to add that I think one of the reasons why the economists here might be thinking that it would be nice to have a social scientist is because economists by training care about efficiency and not equity. One of these bigger issues here – and I'm just going to lay it out there – is that when we're making arguments about why things should the way, we're basing it on economic efficiency and we're not necessarily basing it on equity. That would be when I'm making those arguments and so having somebody in the room that would be basing it on a different criteria might be a good alternative.

DR. MURRAY: I would like to add to that and say that I think maybe even more importantly since probably any value we can add has to do with predicting human behavior, economists typically fall back on a very dispassionate rational model that may not always be adequate for predicting behavior. That would be the real added value I think of folks who understand some more nuance details of human behavior.

DR. CROSSON: This actually came up when all the NOAA social scientists met in Orlando this summer. At one point we had a discussion and it was noticed that we had a small group of anthropologists and a whole lot of economists, and that was it. Right now there are still only two job classifications in NOAA Fisheries social science. You're either one or the other even though people like me occasionally sneak in through other routes. It was noticed that maybe we need to bring in more disciplines. Okay, if there is anything else to contribute to this, we'll probably move on to the agenda item.

MR. WAUGH: Okay, you have this report, Allocation Analysis of the Gulf of Mexico Gag and Red Grouper Fisheries. Approximately two and a half years ago our council embarked on an approach that would have been a comprehensive amendment across all our fishery management plans to deal with allocation.

Seeing the reauthorization issues coming, the feeling was that it would be good to look at this holistically and just deal with all the allocation decisions. We went down that road for a little while. We had Jim Waters come in and give us a presentation at one time. We had an allocation committee. Then the push for dealing with all these ACLs overtook that and that was put on the back burner.

One of items was this paper that surfaced; and when we formed this group about a year and a half ago – it has taken us this long to get you guys together – a council member had requested that you review this document, provide some comment on its validity and applicability to the South Atlantic in terms of whether this would be something to use to base allocation decisions on. I have not read the document. I am not going to participate in the discussion, so just to give you the background and look for your input.

MS. QUIGLEY: I think what we're looking for or what has been requested is that – originally it was requested that the SSC take a look at this report and respond to it as to whether they think it's an appropriate way to do allocation or not. That's what they were looking for initially. Now, it wasn't brought before the SSC because it wasn't part of an amendment.

At the time they dropped the allocation amendment, so now it's being brought before you guys to ask how can this fit into allocation discussions that the council has, how can this fit into how allocations should be done. In the past, when we do an amendment, the economic impacts typically will talk about how this has to do with distributional effects and that we're responsible of talking about the net benefits to the nation and not distributional effects., and distributional effects are brought up under the social effects section.

We've tried not to get into the allocation analysis too much because we simply don't have the data and the approach that was taken Juan Agar and Jim Waters a while ago with – I think it was with regards to red grouper – they did an analysis that was quite different from this one. The council just wanted to get the economists' input on how this kind of analysis can fit into allocations that are made in the amendment process.

DR. CROSSON: Before we start the discussion, as a person who does not have his doctorate in economics, the more notes you guys take on this, the better to help me, because some of the terms you use may not be in my own particular background. Also, for Jason and Kurt, Jim Waters was the head of our group down in Miami. He just retired recently. He was 30 years-plus with NOAA, and he goes all the way to the late seventies. Juan Agar is our current acting group leader I guess the best way of putting it. He is another economist down at the science center.

DR. WHITEHEAD: Were we sent this? This is the first time I've seen the agenda, actually, as well.

MS. QUIGLEY: I think Mike Collins would have sent out the briefing book about a week ago to everybody, but you're welcome to grab the copies that are on the table. Yes, this is the same analysis that Brad Gentner made I guess it was about – the presentation that he made on this analysis two years ago or so.

DR. WHITEHEAD: I found it.

MS. QUIGLEY: I know this may be something difficult to address, but the council wanted to do economists have any reaction to this type of report and its appropriateness. They wanted to perhaps get some perspective on how this fits into allocation discussions; this kind of report versus the kind of report that Jim Waters and Juan Agar did, which you don't have in front of you. Maybe we should have brought that in as well, but this was the primary one presented to the council, and Brad came and presented it.

DR. SCHNIER: I guess my initial response to this was the recreational values here look astronomically larger than commercial values from just looking at the numbers. That may perhaps be true, but the one thing that sort of seems sort of odd to me is that it does appear a little bit of apples and oranges in the sense that recreational demand systems are looking at single species and catching one fish or two fish along the way and what the values of those are; so you're having high travel costs associated with that, and so the values of those look quite large.

Whereas, in the commercial sector you're catching things measured in hundreds of pounds, and so this sort of scales and magnitude between the two could be quite disparate. I don't know to what degree that could be impacting things. That's just something I thought of when I was looking at this earlier. Nothing is wrong methodologically from what has been done. I think what Brad has done follows very closely with what John and I did, so I'm not going to go around slamming that in any way. That's the only thing that – I'm wondering to what degree that has an impact on the originals here.

DR. WHITEHEAD: Brad did a good job with this, but I think it is a single-species model. There is no substitution across species in there. In the results, there are big recreational values. Brad did this for the Recreational Fisheries Foundation, maybe. The conclusion is that all of the allocations should be given to the recreational anglers; is that right? Yes, with a conclusion like that, you have to really look at the lack of species substitution in the model and recognize that the numbers are too high. We don't know how much lower they would be if there was more alternatives in the model.

DR. MURRAY: Assuming a lot of the value that the recreational folks would be attributing to other species is being lumped into with the two species that the report focuses on? Yes, that's likely.

DR. LARKIN: Are you looking for the same type of critique that happened in the Gulf SEP? I mean, is that where we're going? I can sort of point out some of the highlights. I don't know if we need to reiterate that again. We do; we want to reiterate –

MS. QUIGLEY: Well, I don't think all council members are aware of the critique that did happen in the Gulf. I don't think they're aware of that so anything that you can provide as far as general information about how economists think about these types of studies and various approaches that might exist; and any critique that was done in the Gulf, I don't think council members are familiar with – all council members are not familiar with.

DR. LARKIN: I think as John mentioned, the overarching critique is the use of those marginal values to extrapolate to a hundred percent allocation. I'm paraphrasing what the whole committee did, but that was certainly a main source of contention. I think another one is there was the estimation of marginal values that were constant over all catch levels. In that sense you're using your marginal value like it was an average value and multiplying by the number of units. I can't remember if those were in fish or pounds.

DR. SCHNIER: These are negative binomial.

DR. LARKIN: And I think part of the report went into an IMPLAN Analysis so there was a good discussion of what that does and what that doesn't do, but yet the inclusion of those results to help support the allocation was seen as a bit troublesome in the sense that you shouldn't use it that way, but yet the results were in there and were to imply that it was to support a re-allocation decision.

DR. WHITEHEAD: In the report there is a comparison to the Haab et al studies and Curtain and myself are co-authors on that. We came up with very high numbers for grouper catch as well, very high value numbers for grouper catch. The purpose of our study was to compare across different statistical models; and so to do that we limited our focus to very few alternatives.

For example, we had snapper grouper anglers in the Gulf substituting between – red snapper and red grouper I think were the two alternatives, and we did not include non snapper grouper opportunities in the model, so I would apply the same criticism to our study that I would apply to Brad's with the caveat that ours had a very different purpose. We weren't doing that for management purposes.

DR. SCHNIER: I guess the other thing I would add is that our numbers had a pretty large range, too, five dollars, looking at his report of our paper – about five dollars and fifty-eight dollars a pound for the grouper. It depends on the model you use. But, in any case, if you were to take that even on the lower end of our values, we're still looking at being up commercially, because it still may be \$25 million on our lower end.

I mean, the question I think here is really how confident – I mean, given that he is coming up with roughly nineteen dollars a pound, if we want to discount this in anyway, do we have to discount it enough that it equals \$16 million. I mean, because the real comparison here is he has got in Page 3 where it's recreational gag groupers, \$107 million, and commercial \$16 million, so we have to discount those estimates by a lot before it still doesn't tell us the same story, right? I think the question here is, is it rational for us to be discounting those numbers that much to not have a similar story being told?

DR. MURRAY: I'm assuming that the reason we even have to have this discussion is that there is some kind of institutional barrier to just auctioning – I mean, it's all based on willingness to pay, right. If it is true that the recreational guys are willing to pay more, then – right. Is that the case?

DR. CROSSON: Yes, that's the case.

DR. SCHNIER: You should have been there when Lee Anderson actually suggested something that was akin to that when we were in the Gulf. Remember that?

MS. QUIGLEY: Actually, auctions have been talked about in the catch shares paper because some people have said, well, then we should auction off if we want to glean some of these, quote-unquote, super profits, then we really need to be auctioning it. That has actually been talked about and there are people who would like to see that happen.

DR. MURRAY: I guess auction is just one way of facilitating the transfer of this willingness to pay into actual payment, but if this sort of is suggestive – I would think the best way to interpret it is suggestive that the recreational folks might be willing to pay more than they currently are paying to get more of the share. I don't know if that's institutionally possible, but it seems a good mechanism towards efficiency.

DR. WHITEHEAD: With these sort of models, you do make up a lot numbers; for example, the opportunity cost of time is one-third of the wage rate; where do we get that; and so variations on that assumption and other stuff with the travel cost model that Brad is using, it creates a lot of uncertainty.

When you go from fund research like this and come up with numbers, the policy, I don't know if I could go to a hundred percent. What Jason is suggesting would be very interesting to see if these values are backed up, these non-market values that we estimate are backed up with the angler's behavior. I would say that a study like this does suggest that more of the allocation should be transferred to recreational anglers. I don't know if that's five percent more a hundred percent more.

DR. CROSSON: Just from an institutional perspective, the paper does not advocate having an auction to determine whether these values are comparable. It says use the same institutional process that currently drives the allocation to shift all of it completely over to the recreational sector.

DR. SCHNIER: That's the nice thing about allowing people to pay for it is that we don't have rely on estimates.

DR. SCHNIER: An alternative here, if we're going to start doing harebrained schemes for regulatory measures, is that you could be thinking of a morph between the two. We've have been talking a lot about having a system set up where it's a percentage this, a percentage this. You could think about having half of the TAC be allocated on a percentage basis based on these types of information where you give to commercial and recreational and then have the other half

auction where then you would actually have that margin that we're really concerned about here being capitalized within the auction itself. If we're really, really concerned about how reliable these estimates are and you're judging a hundred percent to zero allocation, have part of the auction – have some of it be straight up.

DR. MURRAY: Yes, that would be a great way to also assess the marginal versus average question here. If you could only do maybe 10 percent of it is auction, you could really see –

DR. SCHNIER: I mean, I think it would also get at some of the – I mean when Lee Anderson – I was just joking – we had mentioned this, the first thing that happened I think there were three commercial guys that stood up and were very mad about his statement.

I think it would help alleviate some of those concerns as well because they would be having their share in either party with having to buy in for the remainder of their willingness to pay. This wouldn't be an efficiency concern here. This would be more of an equity concern and having both sectors feel as though they're players in the game.

MS. QUIGLEY: Just to let people know how the council has been doing allocations recently is they say 50 percent of the – so where they have allocations already, they said we have allocations and we're not going to change those; and they don't have allocation, they've used something that they're called Boyles' Law, named after Robert Boyles who is a council member.

That is basically they say 50 percent times 1998-2009 landings plus 50 percent of 2007-2009, so they've used old years, which in general seemed to favor commercial fishermen, plus newer years, the past three years which tend to favor recreational fisheries since recreational fishing is growing and growing every year. Then they've done allocations basically based upon that calculation. That's what they've been using in lieu of these types of studies.

DR. SCHNIER: The only problem with that is those are based on looking at their charts when they're talking about percentage allocation, and so there is a capacity on what they could have caught if they were allowed to catch as much as they wanted to on the historical catches, and so that would be compounding some of their willingness to pay on those measures in the sense that there is a capacity on their ability. It sounds like somebody is trying to find a happy medium here, and I just think that it truly is a willingness to pay issue and some of these mechanisms might work out better. Am I totally off base here?

MS. QUIGLEY: I think with regards to allocation, the council hasn't identified what is their goal for allocation. They haven't said is their goal to maximize willingness to pay or is their goal to find a happy medium or is their goal equality. You know, there are fairness issues. They haven't really said what their goal is with regards to allocation, so it's very hard to I guess come up with suggestions of how allocation could be done because I don't think they really have a specific goal in mind with regards to allocation that has been stated on the record or that I've even heard off the record.

DR. MURRAY: Does Magnuson-Stevens not provide them a mandated goal about allocation?

MS. QUIGLEY: Not with regards to allocation specifically. There are a lot of goals that need to be met, and there are multiple goals. There are biological, economic and social goals that have to be met with biological being the highest priority. There is nothing specific to allocation that I know of.

MR. CUPKA: Except some people look at the national standards where it says it has to be fair and equitable and that sort of thing, so in their mind they equate that to 50/50 and they're saying 50 percent needs to be recreational and 50 percent commercial. That is not what the standard really says, but that's the way some fishermen are interpreting it.

MS. QUIGLEY: Okay, I think we've had some really good input. I don't know if there is more to say. John.

DR. WHITEHEAD: I just have a question. Earlier you mentioned the Waters and Agar study. Was that the Carter and Agar study; NOAA Technical Memorandum 576? This is one where David was estimating the headboat values. Okay, it's Carter, Agar and Waters. I'd say if we want to review something on allocation, then that's a better place to start because they start with the theory of marginal values and trying to balance those across sectors. They're doing the best they can with the available data to estimate those marginal values.

MS. QUIGLEY: So why is that a better place to start than with this Gentner Model? Can you just explain more why perhaps that might be a better place to start? The council has been asked specifically – the council has specifically for a review of this paper, but they haven't asked for a review of the Waters paper, and perhaps that's because it has already gone through the science center and it has already been evaluated.

We have two different approaches here to allocation, and I guess I'm just wondering – you know, we're not reviewing that one right now so we can't say, okay, which one is better, what are the benefits of one over the other necessarily because we haven't all looked at it, but are there some clear reasons why that might be a better approach or a more appropriate approach than the Gentner Model; or, no, we can't say right now because we haven't really looked at it in depth.

DR. WHITEHEAD: Brad did not model the commercial sector. Is that enough? Brad did not model the commercial sector whereas Agar, Carter and Waters did attempt to do that.

MS. QUIGLEY: Okay, so it's more comprehensive approach.

DR. WHITEHEAD: It's a more comprehensive approach; it's under peer review. A paper from it is under peer review. I think it's a good example of people trying to study allocation associations with available data. That might be the best example.

MS. QUIGLEY: What do people think; have we exhausted the discussion? The council is basically looking for this; just a reaction to the document.

DR. MURRAY: I guess one thing we haven't touched on is sort of the economist's intuition on where these – aside from the details of coming up with the actual estimates of willingness to pay,

it is not at all surprising to me that you would have much larger willingness to pay numbers and it would tend to favor the recreational industry.

When you have a group where labor is essentially demanding a negative wage, it's not surprising that you're going to get higher benefits at least by pushing some of allocation towards recreational. I would think we would find that no matter how we did the studies to some degree, and so then we're still left with the practicality that you may just have to split it 50/50 or split 80 percent of it 50/50 and then maybe play around with the rest on the margins.

DR. SCHNIER: I agree with what he said.

DR. LARKIN: I don't know another study would turn out. I know that there exists some summary of a very thorough critique on this. I think I probably even have it somewhere. I'm not really motivated to go into all the details again from what happened in the Gulf. It almost pains me to say this, but when we talk about those allocation decisions there is so much more than just a willingness to pay.

You could probably never even design a study to capture everything that you'd need; how to people react to size of fish? This was only based on people in Florida, and it was supposed to be for the Gulf. I think all trips in Florida were seen as substitutable. It's like I don't know, I mean, you can't go from Destin down to Miami and just decide to do that in a day. There are so many details in how it's carried out that might affect that value, but it still is just one component.

If you look at the national standard, sure, half of them are qualified by where practicable that you're going to consider them, but certainly there is a lot to do with community stability and the characteristics of these communities that serve on the charterboat and recreational and the commercial side that are more than just what we can provide for willingness to pay.

I like that we're moving in this direction. Seeing a document that addresses both sides I think is extremely important, because at the root you need the same measurement for each, and you need somebody to take the same approach when they're looking at commercial and recreational together, but it is just one piece of the puzzle.

DR. SCHNIER: One thing with that is we talk about the external sort of side effects that if you got rid of the commercial sector, the jobs and losses like that, but one thing that this report does find out is that there are, what, 1,500 jobs recreational versus only 300 jobs that are commercial; and so even from an equity standpoint, there is a large number of jobs.

If you were to shift away from recreational, take some away from recreational and give it to commercial, you could easily lose the 300 jobs in the recreational that would be offsetting what was in the commercial. I think it seems as though we have this preconceived notion – and this would be coming from any large-scale fisheries where the commercial sentiment is the protection of the family business and protection of this; and with 300 commercial fishermen, I'm not sure what the picture is here.

It's not these large boats that are 300 feet long operating in Alaska. These are smaller boats. I'm a little curious about that equity judgment when it's a small sector to begin with. I'm not making any judgment calls; I'm just curious about that.

DR. LARKIN: Well, one thing that sort of always intrigued me in looking at data on particular fisheries is how much these guys participate in multiple fisheries; so to look at them only from the snapper grouper perspective, is it okay if it's only 20 percent of their income? I don't know; maybe not if they are relying on 20 percent from five different fisheries and you can't just give up one sector of that. We can't address that in that study like this either.

MS. QUIGLEY: Okay, this is all good information; and if we have exhausted it, then that's fine and we can go ahead and move on. I think this is all good stuff for the council members to listen to and to hear. They want a discussion basically of allocation from an economist perspective, and that's what I think we've given them. I think that's completely sufficient.

DR. SCHNIER: Isn't most of this discussion about allocation? Those other reports are all about the different potential amendments, right, to a certain degree?

MS. QUIGLEY: Yes, there are allocation issues in any management decision. Almost any management decision that is made has some sort of indirect allocation issue, and, of course, catch shares does have an allocation issue among commercial fleets and specifically among individuals. This specifically focuses on between commercial and recreational; whereas, the others, those issues don't arise as often and as directly. If everyone is ready we can either take a break if we need to and then go into Amendment 9.

MS. QUIGLEY: We're going to start again and move on towards the third agenda item, which is review of Snapper Grouper Regulatory Amendment 9. Some of you saw this at the last SSC meeting where Myra had given a presentation on Regulatory Amendment 9, which deals with trip limits for four commercial species, but there are some recreational aspects in there as well. A presentation was given and the biological effects analysis was done.

The SSC saw that, but then the social and economic analysis was not yet complete. In fact, there was nothing there at that time. The attachment that you have, Attachment 2, contains the complete social and economic analysis. You received one copy, which came with the briefing book, and then you received an updated copy which had some changes in it to amberjack. We also had some changes to the RAR with regards to amberjack.

I started to put together a powerpoint presentation. First I was going to use Myra's presentation, which is here, which is the presentation used in the public hearings a couple of weeks ago, which basically just outlined the actions and alternatives in the document, but you can go ahead and take a look at those as well.

What I thought I would do is just focus on the economic and social impacts, and then I thought, well, we're just reviewing this document and maybe we should just look at the methodologies. I have two slides with regard to the methodologies. The methodology that was used is very simplistic. Basically I'm just going to kind of talk you through what was done since the SSC.

I know some of you have not seen – this is your first time seeing the document, so I apologize for not going through the whole thing again. It's rather lengthy, though, and it's something that at least two of the people have seen before in this room. What I'm going to do is just kind of talk about it right now, so you've got this document, Regulatory Amendment 9.

Chapter 4 contains the economic effects sections. There are four species deal with. There is black sea bass, gag, vermilion and greater amberjack. Black sea bass, gag and vermilion do not have trip limits at this point in time. Greater amberjack does have a trip limit, and the council is looking at increasing the trip limit; I think going from 1,000 pounds to 1,500 pounds.

In that case the analysis is a little bit different. Jim Waters did the bulk of the quantitative analysis for this amendment. What he did is he applied the trip limits to the past three years. He pretended that the trip limits actually went into place in 2007, 2008 and 2009. He applied those trip limits and took a look at what the X-vessel revenue losses would be and added those up.

The economic effects analysis contains X-revenue losses for each alternative. If you take a look at the document itself on Page 85, Table 4-10, what you see is we have all these trip limit alternatives, Alternative 2A through 2H. Those are the trip limit options. PDF Page 121 and Word Document Page 85, Table 4-10 contains the revenue losses in thousands of 2009 dollars for Alternative 2A through 2H. Those are the trip limit alternatives.

The other alternatives that we have in the document, there is analysis but it is qualitative because we were not able to do quantitative analysis. We didn't have the data available to us, so basically it just follows from the biological effects and says, okay, well, the economic effects are likely to be this in the short run and this in the long run.

What we have is revenues losses in thousands of 2009 dollars. Of course, what you see is the smaller that the trip limit gets the greater the revenue losses, because it's relying upon 2007-2009 data. Now, one thing that we admit in here is, of course, we don't know how people would change their behavior.

How many more trips would people take if you bring the trip limit down to, say, Alternative 2H, 340 pounds? Well, quite a bit for some people. For some people it's not going to be worth it. For some people with larger vessels, they're going to simply have to drop out of the fishery and focus on other species.

But then some people, for small boat operators, this is something that they would like to see, and they've actually come to the council and requested that you put a trip limit into place and that this could make the season last for quite a bit longer. The 340 pounds is the NMFS analyst's best guess at the pounds it would have to be – the trip limit would have to be in order to get a much longer season.

What we're experiencing with black sea bass, gag and vermilion are shorter and shorter seasons, and so this is an attempt to lengthen the season. We talk here about the revenue loss in thousands of 2009 dollars, but admit that we really don't know what the impacts on profit would be to these individuals.

We can't really say does these trip limits result in higher profitability because prices have gone up because you no longer have this derby fishery, so we're not able to really comment on that, but we do admit that it's possible that if you don't have the fish coming all in at once, you're going to get a higher price to a certain extent, and then you would have higher profits in the long run; or, if you're just going to have people dropping out of the fisheries, and this is very inefficient for larger vessels, and therefore you're going to have loss in profits, in the long term this is not going to be something that increases the economic profits for the entire fishery.

That's the kind of analysis that we have for each of these trip limit alternatives for each of these four species. That doesn't give you a lot of detail but that's really all it is, is basically just applying trip limits to the past, taking a look at the X-vessel revenues and then doing qualitative conversations.

What the SSC and the council would like from you is if you could just comment on this Chapter 4, the economic effects, the social effects, and any suggestions you have for ways to do this differently; or if this is something that is acceptable for economic effects analysis that has been done, is this acceptable or not.

You were sent this briefing book analysis and then you were sent an updated one at a later point in time. The only difference between them is the amberjack analysis. Action 4 has to do with amberjack that is increasing the trip limit. Initially in the first document we have some analysis that says there is going to be losses in the Florida Keys primarily. That's because people went over their trip limit some time ago, and now they're going to experience losses.

Well, we talked with Jim Waters about this and other economists and said, well, I don't know if we would really call those losses because people were going over their trip limits in the first place, so perhaps we could just talk about it qualitatively. In the second document that you received, we talk about it qualitatively. It's very brief what we actually say, but we weren't able to quantitatively say what the economic losses would be because they were going over the trip limit in the first place.

DR. SCHNIER: Could I ask a question about the data that they could have potentially been using for this analysis like what type of data – I mean because the question – I think as an economist we'll probably all look at this and go, oh, come on, you can't really do this, but the other question is, well, maybe this is all you can do because you don't have data elsewhere, so what type of data would you have that could potentially be used for this?

MS. QUIGLEY: We do have some cost base, so, of course, we have revenue data from logbooks, from trip tickets – well, from trip tickets. Then we do have some cost data. The thing is that the cost survey that we have is applied to 20 percent of the snapper grouper fleet. The snapper grouper fleet is about 800 vessels, and it's applied to 20 percent each year and that rotates so different people get the survey each year, so we have some data.

The thing is we don't have enough that is applied to a particular species. The cost data that is gathered is for the snapper grouper fishery as a whole and not for an individual species. Anytime we get down to where we have to analyze changes in profitability as a result of an action applied

to a specific species, we're always saying we don't have the data available, we don't have enough available.

The science center has looked into this and they have simply determined that with regards to the cost data, we don't have it for these specific species. Maybe we could do it for a larger fishery or for a larger grouper of species, but for one individual species there are so few people that actually participate.

In the gag fishery, more than a hundred pounds per year or in the golden tilefish fishery or in whatever fishery it is, it's such a small number of people that we can't go and apply the cost data for the entire snapper grouper fishery to those individual fisheries because people go out for specific things. There are fishermen who focus almost entirely on vermilion snapper.

And there are people who – gag is usually caught with red grouper and black grouper. Then we have amberjack and we don't know a lot about who targets amberjack. We've got black sea bass; there are people who target black sea bass specifically, and those are trap fishermen primarily up in North Carolina and there are one or two people down in Florida.

If you were to apply that data from the entire snapper grouper fisheries to these species, it would not be appropriate. It wouldn't fit because they're entirely different fisheries. We could have used that data but chose not to because it didn't seem to be a good fit. I don't know if there are other suggestions for how to evaluate this.

Another thing we should say is that this is one of nine amendments that we have on the table right now, and so the analysis that was done was done very carefully but it was done with a lot other workload. The amount of time that could have been spent on it, they were not able to, most likely, so there might be suggestions that you have on how better to do this.

DR. MURRAY: I just wanted to say aside from cost data that is missing, correct me if I understand what we have here, but the two big uncertainties are, one, we don't know if these revenue losses will occur at all because people may re-allocate the number of trips they make. These may all be zero or with some cost increases potentially because you're making more trips for the number of fish you catch. But then there is also this huge uncertainty about what this does to the populations which would affect all the future years' returns, right, so those are two sources of unknown bias.

MS. QUIGLEY: On the first point, yes; on the second point I think the biological effects basically said, well, we're going to close down the fishery once these trip limits – once the aggregate quota is met; so applying a trip limit is not that big a deal with regards to the hook-and-line fishery and with regards to the trap fishery.

If it was applied to the longline fishery, that might make a big difference; but with regards to these gears being used for these trip limits, there didn't seem to be a big biological impact because they were just going to shut down the fishery, so it's basically an economic impact. People are going to be affected differently, but we don't really know what they're going to do, so, yes, the actual revenue impacts could be zero.

DR. MURRAY: So why would there be no population impact and there is no impact on total catch, then?

MS. QUIGLEY: Correct.

DR. MURRAY: So it's just being done to lengthen the season? Okay.

MS. QUIGLEY: I mean, that's my take as an economist is that, yes, it is being – and from what we've talked about with fishermen, it is being done to lengthen the season; and, yes, to slow the derby fishery that we're experiencing.

DR. MURRAY: So, then I'm confused on why there would be any revenue losses. I could see why cost per pound of fish would increase that way if you have to make more trips; but if you're still catching the total number of pounds per season is the same, then I don't understand where the revenue change comes from at all.

MS. QUIGLEY: Right. Well, basically what Jim Waters did was he took a look at the logbook landings for each trip and a trip that went over the trip limit, he assumes that trip had to end right then. Now, the person could have made two trips in one day and made up for it, and that's likely what they would have done if they could if they were off of Florida or perhaps North Carolina, but you can't do that off of South Carolina or Georgia or northern Florida as much. He basically assumed that they would only take that trip and that trip would end earlier, and that's where the revenue loss comes in.

DR. MURRAY: But doesn't that imply a reduced seasonal tonnage?

MS. QUIGLEY: Yes, but then you could have a longer season but later on in the season people aren't fishing as long because there was a derby fishery, so what use is this analysis really in the end? It was done in place of coming up with anything better. That's why we say under each of these we don't really know what the economic effect is. Yes, we gave you these numbers, but we really don't know what the economic effect is going to be because this is not a good type of analysis to be doing, but we don't really have anything else that we can do. Yes, you're right on the mark.

DR. SCHNIER: Just a question; I'm sort of new to this region; has there been any other regulatory changes over the past ten or fifteen years that mimic this with regard to the bag limits so that we could maybe figure out the cost and factor that margin?

MS. QUIGLEY: Yes, with regards to trip limits, there have but very few. There are not trip limits on all the species in the snapper grouper fishery. There are trip limits on a handful. There is golden tilefish, there is greater amberjack, and, Gregg, I'm trying to think of other species that have trip limits. We really do not have many.

The council has tried to stay from trip limits I think it benefits some people, the smaller vessels, but disadvantages the larger vessels, and so trip limits have not been a major tool applied here.

However, it has been applied in the Gulf, and that analysis that was done there is this analysis. This analysis was based upon the analysis done there.

That analysis was not done in the same way because the model that we have for the logbooks we don't have for the mackerel fishery. We only have it for the snapper grouper fishery, so that analysis was done in a different way, and I don't I remember exactly how that was done. We've had other regulations such as closures like area closures.

And so we've counted out how many landings were made in those areas; okay, well, those aren't going to be made anymore. Well, that's not true; people are going to go to other areas, people are going to focus – maybe they'll go into another state or something like that. So in all respects the analysis that has been done is deficient because we cannot predict what people are going to do and have not made any assumptions about what people are going to do. Instead we said that these revenue losses are an overestimate of what would probably actually occur.

DR. SCHNIER: I think I would feel more comfortable if we were to look at doing a transfer of the percentage increase in cost from another fishery that had a similar type of mechanism of these changes even if it was a different species, using that as a percentage transfer than doing this type of gross implication but sort of cutting off the trips here and there that would give the cost that would be incurred there. I would be more in favor of seeing that than what has been done here.

MS. QUIGLEY: So you're saying take the cost data for the entire snapper grouper fishery and say some portion of that cost will be – or some portion of those profits will be eliminated?

DR. SCHNIER: Look at one of the other fisheries that you mentioned, the fish species that has had a similar transfer, that went from trip limit – not having a trip limit to having a trip limit and figure out the increased costs that were incurred resulting from that transition and looking at that percentage being transferred to these other fisheries. That is what I think I would be more in favor of doing than having what I'm seeing here.

DR. MURRAY: Right, because it seems like in reality the revenue changes should be very small if not zero and that the real action would be changes in costs.

MS. QUIGLEY: Yes, and I'm not even sure we have that for this fishery, because like I said I don't think we even have a cost survey for the mackerel fishery where this has been applied in the past. I don't think that we do. I have not heard about a cost survey in the mackerel fishery. I think it's specifically snapper grouper.

If we were to go ahead and do that, we would have to borrow from the Gulf. Of course, the Gulf – the economic structure of those vessels are very different from here, but we can look into that and see if that's a possibility.

DR. MURRAY: Did you say the reason these are being considered here is that some participants in the fishery requested these or they're in favor of these trip limits?

MS. QUIGLEY: Yes.

DR. MURRAY: So these are the people who would be bearing the higher costs, right?

MS. QUIGLEY: Yes. I don't know if they entirely understand what theoretically we think is going to happen. With regards to, say – well, any of these, gag, black sea bass or vermilion, I think it was a surprise to some to see that the fishery would basically close – our prediction is the fishery would basically close within maybe one month or a couple of weeks compared to what is occurring now.

I think they think it's a solution because theoretically – well, just to them it seems logical that, okay, you're going to get a much longer season, but we don't that's actually what is going to happen. What we think is going to happen is people are going to take two trips a day that can. People that can't are going to focus on other fisheries, and there is going to be spillover.

We think this is not going to help a whole lot. As economists we just don't think this is going to help a whole lot and that a long-term solution is going to have to be made, but, yes, fishermen have requested please put in trip limits and here is what we're suggesting. And then you have a step-down – you know, we do 75 percent and then you have a step-down, and this has worked for the golden tilefish fishery or this has worked for other fisheries, and we really think this can work so please do this analysis.

I think the council basically gave in and said, okay, they asked for trip limits, let's do trip limits because they're at a loss for what else can possibly be done in the short run. Catch shares may be a long-term solution, maybe cooperatives are a long-term solution, and maybe there are other things, but as far as a short-term solution, let's just try and give the fishermen something that they requested and let's do the analysis. You'll notice black sea bass, the preferred alternative is Alternative 1, no action.

DR. SCHNIER: I guess I would like to add in there that just from an economist's perspective they're going to be losing money doing this rather than taking the status quo would be my hunch until they actually are willing to think about more long-term solutions.

MR. WAUGH: In answer to your question, some of the individuals that are suggesting this are smaller boat operators, so they wouldn't be bearing as much of the cost. Also, I think it's in the face of long closed seasons and the only other alternative being catch shares. They know they don't like catch shares, and so the only other alternative to try is the trip limits.

DR. MURRAY: I'm just curious. Anecdotally why don't they like catch shares?

MS. QUIGLEY: Yes, we'll get into that.

DR. MURRAY: Okay, maybe that's a whole other topic for today.

MS. QUIGLEY: There are many different reasons, but I can give the background. A lot of people are taking a look at the Gulf of Mexico and saying, well, I know a guy and he didn't

receive anything in red snapper, and he only received one pound for the grouper. Well, these were part-time fishermen in those fisheries.

A lot of people are looking at New England saying, oh, my gosh, it's horrible up there and you should see what is happening. A lot of it is that they don't have the – some of it is they don't have the facts. The other thing is they know people who were left out or they didn't receive much of an initial allocation.

Down here basically there are two different reasons. What we've seen is a bit of support from highliners; so people who have a lot of landings' history are supporting this, which is typically what you see. There are some highliners who are not supporting this because at the same time that we're talking about catch shares we're also talking about implementing ACLs that decrease the total quotas in the past.

They're seeing their possible allocation as being much smaller than what they have historically landing; and so what they're saying is that they're really good fishermen and that they would rather go out and have a race to fish because they're going to do better. At least for a few years, they're going to do better than everybody else.

That's why we get some highliners opposing it, but we've had a lot of highliners who are in favor of it. We've had some people down in Florida, some people in the Florida Keys, we've had people in South Carolina and some in North Carolina. All these people vertically integrated. They are dealers and they are vessel owners.

Now, if you look at the part-time people and the people who haven't fished for a while because they've been participating in the mackerel fishery or in the shark fishery or participating over in the Gulf of they've been fixing up their vessel and looking to enter fishery, these people don't want catch shares because their initial allocation is going to be small, and it takes away their opportunity.

What they have fished in the past is not what they want to be able to fish in the future. When we run their initial allocation, which we've done with a model that I came up with some years ago, what they see is they have fished in the past or a little bit lower than what they fished in the past, and that's not what they want. They want to be able to have some flexibility. That's in general but then you're looking at specific regions.

You're looking at the Florida Keys, which several people hold on to a snapper grouper fishery and don't use it for perhaps five or ten years; and then when they have a hurricane year, they use it. Well, if you take a look at their allocation, it's not much. They want to hold on to that and have that opportunity to fish in the future, and they won't have that if you just do an initial allocation based on historical landings.

Now, historically the South Atlantic Council has taken the approach, at least with the wreckfish program, of doing 50 percent equal allocation plus 50 percent historical landings. Well, the council has said in the past we want to support full-time fishermen. Now, what do they mean by

full-time fishermen? Do they mean mackerel and shark and all these other fisheries or do they just mean snapper grouper? We don't exactly know.

But taking away some portion of that to do an equal allocation, especially when you have a large number of latent permits in the fishery, is going to disadvantage the historical fishermen, and so people are thinking that they're probably going to go with historical landings as the initial allocation, so you have a large number of people in opposition to catch shares because they are part-time fishermen or they are multispecies fishermen that go from one fishery to the other within the snapper grouper fishery, so they don't want what they've taken in the past because things have changed so much in the past with regard to regulations;

Instead they want to have the opportunity to fish in the future; and so they think if trip limits can save them, then, okay, but we'll talk about that more. That's just in a nutshell. It's your typical thing. You get the historical fishermen who want it, part-timers who don't, and you get a lot of recreational people coming in the room and giving comment and saying that they don't want it because they see it as really nailing them down to an allocation, which is happening, anyway.

Regardless of whether you do catch shares, doing a comprehensive ACL amendment and we have had all these other amendments that nail down allocation between commercial and recreational, and some people don't realize that, and so they think catch shares is really going to cut off from any future catch.

So you've got recreational people coming in the room; you also have people from other fisheries coming into the room, such as mackerel people who are very much opposed because we've had a large influx of new mackerel fishermen into that fishery because they're being pushed out of the snapper grouper fishery, so you get those people opposing catch shares in the snapper grouper fishery.

And then you have people who are dealers who are not vertically integrated; they do not have vessels, and they are opposing catch shares because perhaps – I don't know, perhaps they see a loss in power, a loss in catch shares from the community. Also, there are people from the Gulf of Mexico fishermen who are very much interested in catch shares over here and are buying permits here in anticipation of a catch share program. So what you already have is the perception of people with money buying out people who don't have money.

DR. CROSSON: I just wanted to add a couple of things in here. One is that from the broad perspective, the initial way that the council has gone about addressing issues with trying to reduce catch has been to reduce the number of permits that have been out here initially by capping the snapper grouper and then having a two-for-one buyback where if you wanted to get into fishery you had to buy an extra permit and retire and then buy the one that you keep. So now that has not been sufficient to account for some of the problems they've been having in different stocks, and so now this sort of the next step where the other option again, as Kate brought up, being catch shares, which is has been very politically hot.

The second is that in terms of the seasonal issues, there has definitely been a shift. If you look at the document and look at some other data sources, there has definitely been a big shift as some

of these seasonal closures have come down in the past couple years. It really has been in the past two or three years that they've had to suddenly cut off access at a certain point because the quota had already been met, and you'll see in the next season that people are starting to push – they're changing their behavior already and starting to push earlier into the season.

A year later you find that the season had to close a few weeks earlier than it had the previous year, and then the council go in and try and split into two different seasons so you have a quota that's set maybe January through June and the second one is July through December. Again, these are all attempts to try and keep and extend the season because there is an infrastructure as well. You can't have a fish house where you just have product going through occasionally.

There has to be some sort of steady supply because his market share – you know, if you can't meet the market demand for a particular product, then usually you have to bring that in from other places; and so there is a big question as to whether a steady that can't be met, whether that market share is permanently going to be lost.

The catch share discussion we have for the next item on the agenda I'm sure is really going to get into a lot of these things, but in terms of this, this is considered to an alternative by a lot of fishermen to moving into that proposal for 21.

MS. QUIGLEY: One thing that they have asked for – this is Regulatory Amendment 9, but we also have an Amendment 21 that looks at comparing trip limits to catch shares. That's really what they asked for in the beginning was, first of all, please give us the trip limits; but if you're going to do catch shares or consider catch shares, you've got to compare it to trip limits. This is the beginning of that but only for four species. We've got to do Amendment 21, which we'll talk about after this, that compares everything to catch shares, including trip limits, endorsements, co-ops, everything.

DR. SCHNIER: Could I ask a curious question about the fishermen in response to this is that are they at all seeing that the regulations are pushing them in one dimension or causing the next regulations that come later in the sense that, so, okay, we've got the season right now, we're going to trip limits and now we're going to be going to this, and things are still getting worse and worse and worse.

I mean, go look at New England and learn from this a little bit. I'm trying to figure out is it the same mindset as New England or are they learning at all from the fact that their poor decisions before are still causing some of the problems now?

MS. QUIGLEY: Well, the way they see it is the council's poor decisions before are causing the problems now, and now the council is forcing them to have trip limits and trip limits are going to force them to have catch shares. That's the way they see it. They don't have the same perspective as some council members and economists where, well, there has to be efficiency improvements for this fishery. It's not so much about creating increases in efficiency. It's more about just creating some way for people to survive.

Yes, they do see that these things are cascading; it's a domino effect; and the race to fish has led to trip limits which is going to lead to catch shares, where these closures are going to lead to trip limits, which are going to lead to catch shares – they do see that, but they see it as the council's mismanagement mostly.

DR. MURRAY: So back to this Table 4-10, are the vessels that you would expect or fishing groups that you would expect to be leaving due to these trip limits? Are they expressing opposition to this?

MS. QUIGLEY: Yes, they are. It's not popular, of course, for fishermen to express opposition to something that a whole bunch of other fishermen want, but, yes, we have heard from people who have larger vessels and people who have many vessels and people who have to go out further, perhaps off of southern North Carolina and off of South Carolina, off of Georgia and off of northern Florida saying, "Don't do trip limits because we can only make one trip, and we're not going to be able to make it."

Now, there are other people who have said, "Well, we can survive with that because we'll fish 24 hours." But we have already seen that with these condensed seasons, people are going out back-to-back trips and there have been some safety issues with people having to be evacuated off of their vessels because a rogue wave hit them or they couldn't repair their equipment or they went out in bad weather. We have seen some emergency situations like that.

Some fishermen, their reaction to that is don't go out in bad weather. Well, that's easier to say down in Florida perhaps – easier and not easy, but easier to say down in Florida than it is in North Carolina where people are going out in the winter months in smaller vessels. We have had some safety issues.

DR. LARKIN: So it's fairly straightforward from an economic perspective to say that when you put on these trip limits, you're going to do more trips for the same amount of catch for that one species. I'm curious because the first thing we worry about with trip limits is this notion of high grading; so I'm curious as to whether from a biological perspective anyone is worried for these critical species, whether the trip limits could backfire. Has there been any discussion about that?

MS. QUIGLEY: We have discussed that verbally a little bit. Gregg might be able to comment on this, but it seems to me that there is disagreement among fishermen as to whether the size of fish gets a higher price or not per pound for some of these species; for some species it matters, for other species doesn't.

As to whether high grading would actually occur or not is – people say, well, high grading already does occur so it's not going to be any different, we're already high grading. And then other people say, "No, there won't be any difference in high grading because I just bring in my fish and I throw them back because I care about the resource." It's unclear to us as to whether high grading is occurring or not and to what extent and what species.

DR. SCHNIER: Are they sold as filets or whole fish?

MS. QUIGLEY: Whole gutted except for – well, sea bass is whole and the others are gutted, so it's not filleted until it gets to the dealer; and then do they filet or not, I don't know. I know they put it on tractor-trailers to go up to Canada, some of the fish, and some of the fish is sold locally. This is really good; we've heard your suggestions about what you think a better methodology could be for analysis. I will look into this and see if that can be done as an additional analysis for something to give them. Are there any other suggestions?

DR. MURRAY: Ultimately I think we would probably all agree it's a pretty inefficient management strategy; but if those who are going to be bearing the costs are small enough – either there are really small guys who aren't going to be facing this constraint, who are pushing for this, and so they're just trying to take over what is left of the fishery and push out some other guys. If the ones who are bearing the increased costs are actually the ones pushing for it, I guess, fine, right?

MS. QUIGLEY: Our perception is that the ones who are pushing for it are not going to bear the cost. They're real small boats.

DR. MURRAY: So the ones who would be bearing the costs would be the ones who should be pushing for, say – I don't want to say the words "catch share", because I think we don't have catch shares, but something that allows them to have a limit that they can spread out throughout the season however they want so that they don't have to do inefficient or dangerous fishing practices.

MS. QUIGLEY: Yes, so they don't know exactly what the answer is but they've asked the council to explore catch shares or they've said we don't know what the answer is but there has got to be something better than catch shares.

DR. SCHNIER: My assumption here is the ones that are pushing for it are the ones that it's not binding restraint.

DR. MURRAY: Right.

DR. SCHNIER: I mean the rate that they're pushing for new regulations for that.

DR. LARKIN: Yes, and you said why, right; I mean they'll have a larger share which will set them up for the catch shares. If that has already come out – and I do think we should care. I kind of like to look at the resource as a whole and to sort of mandate something that is going to cost everybody is just crazy.

DR. MURRAY: The bottom line it's a terrible idea.

MS. QUIGLEY: Economically at least, yes, as a whole. Okay, we've got your suggestions on alternative methodologies and we've got your overall perception of the amendment, so that's great. This is a regulatory amendment so this is not as much analysis as a full amendment; so unless there are other things to say about this particular amendment, we can probably move on to catch shares.

DR. CROSSON: It's my understanding this was going to go through much more quickly than 21. What is the timeline for this regulatory amendment?

MS. BROUWER: I just wanted to mention and remind you that this amendment is scheduled for final approval at the March meeting. We've received several comments on it. The feedback that I got when I was in public hearings for it was, like you mentioned, the small operations, they came out and they were in full support of the trip limits. They understand that they're going to be making less money, but they just want to stay in business. That's what I kept hearing, well, we just want to stay in business, so that was the feedback that I got.

DR. SCHNIER: Are we making a recommendation here that they don't pass Amendment 9 is what we're saying or we're making the recommendation – I mean, are we making a recommendation or just saying that we don't agree with it? What are we really doing?

MS. QUIGLEY: Yes, you can make a recommendation to the SSC. This is the last time the SSC members and this panel will get to take a look at this amendment. If you feel very, very strongly that this is a completely insufficient analysis, then I think you should say so. If you feel that there is a better way to do this but that perhaps you'd see similar – you know, what has been written here is what you're going to see or if you'd like to instead have perhaps a discussion about why we couldn't do some other sort of analysis, which we haven't really gone into in Chapter 4.

We could at least talk about why other analyses were not done, what a better analysis have been, why it was not done, we can do that. You can make a suggestion of things to add in, things to look into, however strongly you feel to the SSC.

DR. CROSSON: I guess my question for is – backing away from catch shares for a minute because we're going to discuss that later today – compared to the alternative of continuing to have a foreshortened season when the quota gets hit and everything gets closed down; what is the market impact of this set of regulations compared to just not doing anything at all, because that's the real decision the council is going to have here in a few weeks.

MS. QUIGLEY: With regards to black sea bass, they have chosen not to do – right now the preferred alternative is Alternative 1, no action. They have chosen not to do anything at all because they have a number of other actions that they're taking in other amendments that could possibly slow down the derby fishery.

One is endorsements in Amendment 18A. They're looking at implementing endorsements for select members of the fishery; so basically saying that unless you have an endorsement, you cannot be in possession of black sea bass – this is for the trap fishery – and in order to have an endorsement you have to have landed a certain number of pounds over a specific period of time.

Basically what we're looking at is the same number of people that participated last year are participating this year, so trying to prevent spillover from other fisheries into black sea bass, which we're starting to see. There are a number of actions happening in other amendments that

maybe will slow down the derby and the increase in fishing in black sea bass specifically. The others they actually have preferred alternatives that are different from that.

DR. BROUWER: Actually Alternative 11 under the black sea bass had been chosen as a preferred. I can't recall which one that is at the moment, if you have the document in front of you. They didn't want to choose a trip limit alternative for black sea bass, but there are other management measures that are included in that action. I believe there are 12 different alternatives for Action 1 in this amendment.

DR. SCHNIER: I guess I'm a little bit puzzled here. If we're just looking at sort of the efficacy of that analysis, I think that we can all sort of say these are really, really high-end estimates of what potentially could be and the odds are the costs are much, much lower than this. That's what I think we could probably all make sort of judgments and agree upon.

People are nodding heads a little bit around here. But then there is the other question of does it even make sense to be doing this altogether just from a general economic framework? What do they really want the feedback on, just the methodology or just the idea or both? This is a difficult think to get our head around.

DR. CROSSON: I guess what do you think is going to happen if they implement these?

DR. SCHNIER: Risks are going to go up straight off the bat because people are going to be fishing more, they're going to be doing more time at sea. You're going to have a little bit of higher cost on transportation costs, you're going to have people probably – maybe you're going to extend the fishery a short time beyond what it is, but that's only to the degree to which you have to take multiple day trips versus two double-up trips. Safety is going to get worse. I don't see how it's really a win situation from my perspective.

DR. WHITEHEAD: So, Kurt, does the model overestimate the cost or underestimate the cost?

DR. SCHNIER: I think if we had the tallies, it would probably underestimate the cost if it went to the extreme of having that level.

DR. MURRAY: Right, it overestimates revenue losses and completely ignores the significant costs of either just fishing effort costs increase or cost per pound landed, and then the real bad news of people getting hurt.

DR. WHITEHEAD: So we need to explicitly say why we think it's a bad idea in terms of this analysis other than the long-term efficiency implications of trip limits versus catch shares, I think. I think it's the potential loss of life and all the other things that we think are wrong with this sort of policy.

DR. SCHNIER: I don't think we want to interpret the advocacy of the policy. It would have to be from fishing for 24 hours a day continually. That would be a pretty dicey thing to be thinking of.

MS. QUIGLEY: Okay, so we can go ahead and incorporate this type of discussion into Chapter 4. We have not mentioned the whole loss of life thing. We all know it's an issue. Maybe we mentioned it but in passing. We can make sure we clearly state that for Actions 1 to 3, which are the implementation of trip limits. We can talk about alternative methodologies that could be used. If will look into them and if they're not possible to do, explain why.

If they're possible to do, then we kind of have to look into it and see if we can do something quickly to put into there. We can talk about the increase in costs, the increase in travel costs, the fact that people are going to making more trips – it's going to be an increase to them – probably the price remaining the same because people will take more trips so there won't be an increase in revenues to cover that cost. We can talk about those things. Is that sufficient, do you think, to say, okay, this amendment is okay – not okay, but the analysis that has been done is sufficient.

DR. SCHNIER: I just had a harebrained scheme for trying to estimate those costs is if you were to go into the cost data and estimate the cost for a trip and then take the cost for a trip for the boats and then figure out what boats are reaching those capacities and that they'd have to take a second trip in order to meet those limits and then add those costs for the second trip.

Let's suppose they're catching a thousand pounds and now they're going five hundred, add into the extra costs from the trip versus the revenue loss, and so that the only margin by which the costs are really being incurred is from the trip expense cost versus the revenue loss, because the revenue losses, they're not really revenue. The revenue is supposed to be going into pockets. I would approach it from that perspective to actually answer this question that's here versus the way they have it. You might have the data to do that.

MS. QUIGLEY: Yes, we might. Okay, so I'll look into that. If nothing else, we can talk about it qualitatively, just say that here is an approach and just from a logical perspective this is why costs are increasing, so can you really just spell out –

DR. MURRAY: Yes, and even if you don't have the cost data, per se, you might be able to proxy it with fuel costs.

DR. SCHNIER: Yes, just look at how much they travel and fuel costs. Sherry doesn't like it.

DR. LARKIN: Actually, my concern is that you're sort of leading them down the path, well, let's have a regulation of one trip a day or one trip a week. The basic problem with this – I mean, when I first look at it is it just seems reallocation from large boats to small boats the higher you go up.

I don't know if that's the underlying current that goes on there, how do you assess that? I mean what do you want this fleet to look like? Do you want it to be small boats or do you want it to be large maybe more industrial type boats? I don't know what is right, but to me that seems like a big undercurrent.

If you start saying we're worried about loss of life because they might take two trips in a day, I would hate for them to say, "Okay, well, the logical conclusion is we do one trip a day," or we

do so many trips a week. I mean, you could just keep going down that path of trying to restrict different measures of effort when one overwhelming concern for me is what seems to be just trying to set themselves up for catch shares and not looking at this and what it's supposed to accomplish but just purely as a means to set themselves up for a future management action.

DR. SCHNIER: Let me start by saying that I agree. I think it's nonsensical to begin with. It's more of what do you do in a world when you're going to be living with nonsense. That's basically what I'm thinking of. If we're going to be doing something that's nonsensical, how do we rationalize something nonsensical and come up with a cost of it?

DR. LARKIN: I think the way to do it is to point out what those additional costs are, absolutely, because that's not being accounted for. That's one thing that you can show, look, we know this is going to take more trips to catch the same amount.

DR. CROSSON: An observation of mine, I guess, and thinking of the fact that the council has reduced the number of permits over the past decade or so, all the fishermen that remain in the fishery think of themselves as being above average. They are the guys that survived because they've watched all these other fishermen in their same area that are no longer active in that fishery, so they're pretty confident in their own abilities to get by and to deal with whatever regulations come down the pipe, but the fact is that mathematically that's not going to be the case.

I think in and of itself – the fishermen may be very confident that they can deal with this in a safe manner, but I don't personally feel like that is going – and if you put more small boats out there in the water, again I would think that's going to be a increased risk compared to having a larger fleet.

MS. QUIGLEY: Well, the council is likely not going to just drop the amendment, so what I'll do is incorporate your feedback into Chapter 4 and to explicitly list out the costs. We can go ahead and do that, talk about loss of life – that's more under the social effects – talk about the indirect reallocation issue from large to small vessels. That can be under the social effects section.

I'll talk about costs and I'll look into the data thing. I think that improves the document quite a bit, so we can go ahead and do that. Is that acceptable? Okay, I'm seeing nodding heads. That's very helpful. We can probably go on to catch shares if we like. What I can do is start by providing you with some background about catch shares in the South Atlantic, just specifically what the South Atlantic has considered in the past, what they've done and where they are.

We've got two catch share amendments that are actively going through the council right now. We actually have three. The first one that I've got here is Amendment 21 to the Snapper Grouper Fishery Management Plan for the South Atlantic Region. This is the amendment that compares catch shares, all different kinds of catch shares to trip limits, endorsements, state-by-state quotas, regional quotas and changes in participation. That's Amendment 21.

Then we have Golden Crab Amendment 5, which is another catch share amendment, which is next on the agenda, and that considers implementation of catch shares for the golden crab fishery. I'll provide background about that later – two with completely different stories. The snapper grouper fishery has about 800 unlimited snapper grouper permits and then some limited snapper grouper permits, or 225 permits, and then you've got the golden crab fishery which consists of eleven permits and four participants.

They go very, very far out to sea. There may be may be five participants. They go very, very far out so we're talking 30 to 40 miles out. They're operating right up in the Gulf current. They are right up against the corals. There is a management plan in place so that they're not on the corals. They are close to the corals. They have allowable fishing areas. The industry wants catch shares; they have asked for it. They've put together this document that you have as an attachment.

They want catch shares for a very, very different reason than people typically want catch shares. The typical thing has been, well, you've got a derby fishery, you want to slow down the derby and increase profits at the same time because you're going increase price, because you have a change in the quality of the fish or you're decreasing costs or something like that and you can increase profitability.

They are concerned that there is going to be a derby fishery. There is not a derby fishery right now. They're concerned that there is going to be a derby fishery, and the reason why is because – so I'm talking about these both at once; this golden crab thing and the snapper grouper thing because I think our discussions are going to get into both probably.

Basically they have been bringing in a frozen catch, live crab packed in ice, for many, many years. They have received something two dollars a pound for those. They're a substitute for Dungeness crabs and snowy crab and other crab species, and they've been selling them locally. But as they're coming back from the six- or seven-day trip, a lot of the crabs die, so they've implement this \$50,000 recirculating refrigerated seawater system on each vessel.

They've started to bring in those crabs, and now all of a sudden they can deliver to global markets, and so they're getting a much, much higher price than before, much higher. We haven't heard exactly what that is, but it's much higher, and so people are starting to enter the fishery. They're selling primarily to Asia, and so we've seen people from Asia starting to get involved in the fishery, basically finding U.S. citizens of Asian descent to buy permits.

DR. WHITEHEAD: Sorry to interrupt. It might be a naïve question, but how does the price stay secret?

MS. QUIGLEY: Well, it's not secret, but the National Marine Fisheries Service no longer in this region, from what I understand, no longer collects information from dealers on the price. We do have some price data. We have revenue data and we have landings' data, so that implies a price, but the price increases have only occurred over the past year, year and a half.

Some of the prices are very low because people are still bringing in crab packed in ice and others are bringing in live crab. For some reason, with these refrigerated and recirculating seawater systems, they seem to have a lot of breakdowns and so sometime they're fishing with it and sometimes they're not because it's breaking down, and so they're off the water for a while.

When you see the higher prices, you know that they're bringing in this better product, and so you get much lower mortality – much, much, much lower mortality. We've gotten estimates of prices from the fishermen who have these systems, and it's much higher. It's three or four dollars a pound, so it's doubled.

They want to prevent a derby and they see a derby coming. Also, with implementation of ACLs and the fact that this golden crab fishery does not have a quota – you can catch as much as you want right now until implementation of the Comprehensive ACL Amendment, which proposes to implement a 2 million pound quota – they are afraid people are going to come down from Alaska, someone is going to land their trips onto corals, and that will be the end of the fishery. That's their fears.

They want to have people who are in fishery now who know the benthic habitat remain in the fishery, and they want to have this other barrier to entry in catch shares. They also want to be able to work together perhaps as a cooperative some day; perhaps as an RFA, regional fishing association, as defined under the reauthorized MSA. They would like to work together so that they can increase their efficiencies.

They have three different areas. Pretty much all but one participates in the middle zone, which is a smaller zone, which has a high density of crabs, but there is also the northern zone, which has more crabs than any of the other areas, but it's up north; it's not where they live, so they would like to get some other vessels out there, but some of the permits say, well, you can only use one vessel at a time.

I can't remember the details of that, but it's in the document. They would like to see some improvements to that and they see catch shares as the answer. They want catch shares for entirely different reasons than some fishermen. A very small number of fishermen want catch shares in the snapper grouper fishery. The snapper fishery is end the derby to have a product year round and to decrease costs.

DR. MURRAY: Did I understand correctly that you said one of the reasons in the golden crab fishery they want the catch shares is to prevent allowable catch limits?

MS. QUIGLEY: No, it's not to prevent the allowable catch limits. What I meant to say or what I'll clarify is that right now there is no catch limit. Now with the Comprehensive ACL Amendment, which we have and is going to be approved by the council likely in June, it implements a 2 million pound ACL. That's going to happen regardless of whether you have catch shares or not.

Two million pounds, though, is still quite above what they are harvesting at least on the books right now, which is about 500 to 600,000 pounds, so they would like to increase their operations,

but they don't want a vessel from Alaska coming in, so they wanted to have this additional barrier to entry, but there is no way to stop the 2 million pounds from being implemented. They are quite with the 2 million pounds.

DR. MURRAY: And the barrier to entry, I take it these are not tradable, the proposed catch shares?

MS. QUIGLEY: They are transferable, but they see it as a small increase in the barriers to entry that do exist. Right now there are permits and people have to buy permits, they have to buy a larger vessel, they have to know how to fish the golden crab. They have to know where they're located, and now they have to catch shares.

DR. MURRAY: Right, but what prevents an Alaskan vessel from buying catch shares?

MS. QUIGLEY: Nothing.

DR. SCHNIER: So in essence this is a rent/capture exercise?

DR. MURRAY: Yes.

DR. SCHNIER: Basically this is what it looks like; not that I'm opposing it –

DR. MURRAY: No, not at all.

DR. SCHNIER: – because these are the ones that have invested the capital and actually created the fishery in itself, but –

DR. MURRAY: It's one of those rare opportunities.

DR. SCHNIER: – it sounds more like a rent/capture situation.

MS. QUIGLEY: And this is the number one priority for the council with regards to catch shares. They have put this above the snapper grouper catch share. They said. "We want to get this done," so our hope is that between March and June to work on the document, have a final document by September for the council to be able to perhaps vote on maybe in December, but to really get this moving for them because it's something the industry wants.

There are some people who are not crazy about it, but they have bought into it because the other members want it who have been in the fishery for a bit longer, but, again, we're talking about four people here, and they've all been invited to the table. All permit holders have been invited to the table. That's the position with golden crab.

With snapper grouper, the council has been talking about catch sharers for quite a while. They put together a Snapper Grouper Exploratory Workgroup in 2008. That group of fishermen were from all regions, all gear types. They met for a year; they had nine meetings, over three days, each of them, and they talked about catch shares.

They were education on catch shares. Then they said, “If you’re going to have a catch share here in the South Atlantic, what would you like it to look like?” This is Amendment 21. That options paper incorporates all of their preferences. It also incorporates preferences of other fishermen who have held meetings. This incorporates council members’ ideas. It incorporates ideas that staff thinks that the council might want to consider.

The council approved of this document, and so this will be the starting point. We received public comment from people, and now we will bring this back to the council in March for the council to really talk in depth about to take out actions and alternatives, add actions and alternatives, and we’ll start analyzing this document as time allows.

Basically this workgroup got together. They talked about catch shares and in the end we took an anonymous vote, and about 55 percent said go ahead with the catch shares amendment. We want to see all the details of what this would look like. We don’t know if we want catch shares, but we want to see all the details about what this would look like. We need to see details in order to say whether we really want it.

Then you had 30 percent who said, well, we’re kind of undecided. We really don’t know if we want catch shares or for you to go down this road or not. There is really this perception that if you do an amendment it’s going to happen in the council. The council will not drop an amendment, they’ll do the amendment and then it’s going to happen, so some people are very hesitant; they’re undecided.

Then there were two people that said absolutely not, this is not the answer for the South Atlantic, don’t go down this road. They presented that information to the council in early 2009, I guess, and the council said, well, we’re really looking for something unanimous from the fishermen. They dropped catch shares at that point in time. This was in March 2009. They said, “We’re not going to go ahead with catch shares right now; it’s not the appropriate time.”

In September, later that year, someone came forward and asked for catch shares and for that to be compared – two people came forward and said, “We really want catch shares and here are all the reasons.” They gave a presentation in September 2009. Another fisherman came forward and said, “I don’t want catch shares; I want trip limits; but if you’re going to evaluate catch shares, I want it to be compared to trip limits.”

So the council at that time says, “We’re really not going to know if we want catch shares or not or whether catch shares is an answer or not until we do the analysis, and nothing we’ve done so far is going to tell us whether we want catch shares or not, so let’s just do the analysis. Let’s just go ahead and do Amendment 21, do catch shares and compare it to everything else.” This is the product of that, so now we’re finally getting started on that, so that’s what we’ve got.

I guess what we’re looking to do – what I would like to come out of this over the next year or year and a half with you guys is to talk about if the council did a catch share program for the South Atlantic, what should it look like? We’ve got lots of different kinds of catch shares. We’ve got cooperatives, we’ve got sector allocations, we’ve got IFQs, we’ve ITQs, all these different things.

What is appropriate for the South Atlantic, what kind of benefits can we expect to see. I'm looking for someone to brainstorm with me. We can talk about anything. We can comment on this document. We do whatever you like. There is nothing the council is looking for specifically from you. The SSC I don't think is looking for anything specifically from you. This is kind of wide open. This is your opportunity to have input into the catch shares discussion.

DR. SCHNIER: I think from an economist's perspective as a first step I think we would probably argue that the more flexibility the better. The more restrictions you put on it, the more layers of regulations that get put on top of any sort of catch share system are just going to yield inefficiency.

I guess speaking from experience if you look at what has happened in Alaskan fisheries, where they've had things like regional delivery requirements, cooperative structures and things of this sort that has generated some of the deficiencies that could have been alleviated if those weren't in place. In fact, I think some of the fishermen are now trying to find ways to get around those issues, and we might want to take some lessons that that.

MS. QUIGLEY: One big questions is, is it reasonable to consider catch shares for the South Atlantic Region? The thought process of many fishermen is that we have got a very low-volume fishery compared to the Gulf, compared to everywhere, very, very low volume, low revenue fishery, and we've got very, very low annual catch limits. I mean, we're talking in tens of thousands of pounds, not metric tons.

So, is it appropriate even to consider a catch share type program for this type of fishery or is this when you really do want to consider a catch share program because you have more people fighting over a small amount of fish? I mean, not that you have to answer this right now, but that's a general important topic.

DR. MURRAY: The only problem I could see with a low volume, a low number of participants is that you have a thin market for the tradable catch shares, but that's not even necessarily that bad. What other problems would there be?

DR. SCHNIER: I think regulatory costs could be quite high if you have got a relative small group or even small landings, where are you getting the money. You've got large federal dollars that are going to go in and be pumped into regulating a fishery for 10,000 pounds. The taxpayers may not be really excited about that.

DR. MURRAY: True.

DR. SCHNIER: And that might be a situation where the turf might be more appropriate than having a catch share program. You could see that working under these systems.

MS. QUIGLEY: So, first, administrative cost is not the fishermen's concern. I'm not saying that's not the fishermen's concern. They have not brought that up very often as a concern. That might be a NMFS concern, but they're concern with the low volume is that nobody is going to get anything. We have this small, small fishery; is it better just to fight over it and people who

work hard will reap the benefits instead of just giving everybody a teeny tiny bit and then nobody can fish.

If we do that then a corporation is going to come in and buy everybody out. Now, we've made them aware that there is going to be limits. I'm just saying what the fishermen are thinking. It's basically nobody is going to be getting anything.

DR. MURRAY: Right, it's just such a confounding of the way in which you organize the limits and the fact that there is a limit at all. It sounded to me like that concern, right. I mean, if we're going to put in limits, then you're going to be catching less unless you get a disproportionately high share.

MS. QUIGLEY: I'm sorry, what was your second; you had a question and I didn't answer it because I can't remember it.

DR. SCHNIER: What I was suggesting was maybe an alternative type of regulation is the turf which as a setup where basically you'd have these regional groups that are managing the area, and there are sort of property rights in a given region is another way of looking at it. I mean, as far as the consolidation thing, I don't really buy that argument. I mean, they're getting money in their pocket. If they don't want to sell it, they don't have to sell it; you know, I don't buy it at all.

MS. QUIGLEY: Yes, turfs we've talked just very, very little. Most of the literature that I've looked at is good for – it seems to be something you can consider definitely for a sedentary species, so for shellfish or something like that for species that kind of stay in the same place, but there are a lot of fish in the snapper grouper fishery that move around quite a bit.

So people are saying, well, maybe it's not appropriate, but some sort of regional management might be appropriate, so some sort of sector allocation or, yes, sector allocation or regional fishing association or a co-op or something like that. Fishermen have said, well, we can't get a lot of cooperation, but I said, well, all you need is two people to get it started. Some people think that's a possibility and regional fishing associations appeal to them.

DR. SCHNIER: Well, I see in many respects the crabs that we're going to discuss is actually a regional fishery argument if there is just a minimal group of friends that have decided to get together and do that. I mean, if you can somehow get that internally with these people, it might be advantageous as well. How many fishermen; you said about 800? Well, it's a little hard to get 800 people that all agree.

MS. QUIGLEY: Well, there are 800 vessels but about 90 of those are latent, meaning zero landings for five years plus. If you take a look at each individual species, so if you take a look at gag you've got like 200 people who have made more than one pound of landing of gag. Then if you look at golden tilefish, you're looking at 20 people who have landed a hundred pounds or more. It depends on the species that you look at, but it's a very small number of people who are actually – gag is one of the largest – a very small number of people who are actually harvesting a particular species.

So you've got very small participation so that might be something you can consider in the long run. I guess maybe one way to start the conversation is what do you think of this options paper, Amendment 21? It has all of your typical actions and alternatives that you would expect to have, at least in my mind, for starting a conversation.

It has very little detail; basically Section A, so PDF Page 8, talks about effort management approaches, and it gives all the different approaches that are going to be compared. Now, there is really no way that we can actually compare all these things. It would be a document that's 2,000 pages, which does occur in some regions, but we would rather not go through this exercise if we don't have to.

The council has to find some way to whittle down the options. Anyway, they'll have to decide which ones they want to take out and which ones they don't, but certainly a large portion of the discussion will be trip limits, endorsements, regional quotas and then a catch share program for fishermen, communities and regional fishing associations.

We talk about some different options and you can see they're rather scant for some of these actions, but for catch shares we have it pretty much fleshed out but very, very low on detail. Maybe we should go through the document. I'm not sure how you want to handle this.

MR. CUPKA: One thing I want to mention very quick in terms of background information; the council at this point or at least the members that are on the council now have taken the stand publicly that we will not pursue catch shares unless the fishermen actually want it. We've even gone beyond that and said even though we aren't required under the reauthorized Magnuson to do a referendum in this area, that we would do a referendum, which gets us down to the question of how do we do the referendum.

Does each permit holder get one vote; do you get the number of votes based on what your historical catch has been? This is going to be a really important issue on deciding whether we want to move ahead with a catch share program or not, and it's something that I would like to see some discussion at some point about what would be a good way to do a referendum.

The whole thing is going to kind of hinge on that. There are different ways it could be set up; and obviously depending on how you set it up is going to have different impacts or different requirements. Maybe at some point you will get into a little bit of discussion on that because that's pretty basic to our concern.

MS. QUIGLEY: And in my mind the council needs to decide how to set up the referendum. Of course, the referendum is done after all the details of the document have been laid out and all the effects' analyses have been done. The way they decide upon the referendum is they need to decide who it is they want to support.

If they want to support historical fishermen, they give historical fishermen the vote. If they want to support everybody, then everybody gets one vote. A lot of this to me has to do with what are your goals for the program and who do you want to support. What do you want the fishery to

look like in ten years? Just in my mind, that's how a referendum would be set up, but another idea is to do a referendum and then to tally it in different ways.

You send out a referendum and people send back their vote, and that vote for each permit holder, that counts one. For people who have landings within certain years, that counts one. For people who have landings in other years, that counts one. Then you go ahead and tally and you could see, okay, under this type of voting rule this is the result that you get, that the majority of permit holders don't want a catch share, perhaps.

Under this type of voting rule this is what you get. What you find is that people with higher landings want a catch share. You provide all this information to the council and then they can go ahead and make their decision. That's another way to do it.

DR. SCHNIER: Could I just add a suggestion? Maybe you take a referendum and take their yeses and then take those yeses and weigh them by all the proposed different allocation schemes that you've got for the quota and see whether or not different allocation schemes pass versus them themselves.

If you've got an allocation scheme that's based off a grandfathering of poundage in this year and this year, then you weight their vote by their poundage based on that grandfathering scheme. From that you can determine whether or not there are certain protocols that you have as alternatives that would be acceptable for some and it's not acceptable for others and finding out where those thresholds are of acceptance.

Because, if you got a yes vote, but that yes vote is going to be weighed by the fact that you're a player or not a player under this allocation mechanism. It would be like a scale, so one vote could be worth 5,000 pounds because that's their allocation for that year, and it's a percentage based off of that. You could see the breakdown that way.

MS. QUIGLEY: Right, that's what we've talked about is one vote per pound over a certain number of years or something like that.

DR. WHITEHEAD: So how was the votes on the referendum conducted in the Gulf and ex-post what was the perceived equity of the outcome?

MS. QUIGLEY: In the Gulf – and someone who knows more, please correct me if I'm wrong – in the Gulf they wrote up an amendment. They preferred alternatives. And then for the red snapper IFQ you had to meet a certain eligibility requirement and you had a certain number of votes depending upon landings' history that you had in the past, so you got one vote per pounds that you had harvested in the past over a certain time period.

That went ahead and passed, and I don't remember what the margin was. Then for the grouper tilefish IFQ, they did one vote per permit holder, but again I believe there was an eligibility requirement, so you had to have harvested so many pounds in order to get a vote. Those were two different ways.

When they did the red snapper vote, there was opposition because people said, well, that's unfair; the heavy hitters got to vote and everybody else didn't. I don't think I've heard what the reaction is as to how it was done for grouper tilefish other than, well, you had to be eligible to have a vote, and that was perceived as unfair by some. You're never going to make everybody happy, but at least they tried something new, they tried something different.

DR. WHITEHEAD: So what are the reactions to the way they voted in the Gulf from the South Atlantic fishermen?

MS. QUIGLEY: The same reaction; you know, the small-time fishermen, fishermen who don't have many landings are saying that the only fair way to do it is to have one vote per permit holder, and then fishermen with landings are saying we need to be able to survive and we need to have the votes. You need to have one vote per landings made in the past. That's how I've seen it split; that's my perception of what I have heard.

DR. LARKIN: What is tricky about this is it's just the devil is in the details, right. It's so hard to hear people criticize catch shares when they can really mean anything, but it's entirely understandable when how the rule is set up can change the whole game. It's easy to talk about people who have been historically involved.

Everybody wants to go back and grandfather everybody in; and when you start with a ten-year landing history, what happens is an allocation that leaves nobody able to operate as they have in the past. Even decisions like that, like how many years you go back to justify how many people could go in, have an effect. With red snapper, that five-year rule runs out January 1st of next year, and they don't know what they're going to do about who is going to be able to buy in, right.

In theory, maybe recreational can start buying those; but if the vote is based on the percentage of people based on pounds in the past, they're never going to vote for something, so that shapes your program, and there they have this history that only the big people are going to vote. Well, they're going to end up with a program that is very different than what you might envision the result of a catch share program is, because those people are the ones that are going to vote on everything that happens from here on out.

DR. CROSSON: I remember actually hearing during Kate's – when she was running the exploratory workgroup, a fisherman bringing up, you know, if you get to use the best seven out of ten years, right, then everybody would be better off, and it's like it's a zero. Anytime you allocate more to one person, you have to take it at the expense of somebody else, and so I think there is even confusion about that.

MS. QUIGLEY: Well, yes, there is also confusion about if you have the best three of five years, well, what you get is the people who have gone in and out get the advantage, and so you have things like that as well.

DR. SCHNIER: Aren't they sort of aware that the efficiency side of this is that with a catch share program there are people who are just not going to fish and that's the nature of the game,

so you're definitely going to have consolidation and you're going to have people that have low catch shares selling their quota or leasing their quota out to those guys who make the argument that we need a higher volume to succeed. Well, you lease it out, they make some money, you make some money, and it's done. Are they not seeing that is what has to happen here?

MS. QUIGLEY: There are community concerns. They're afraid that fishing vessels are going to leave their community and people who aren't vertically integrated – dealers that aren't vertically integrated see that as a problem because then they won't have the catch coming in. They see it as a social problem, the consolidation as a social problem.

DR. SCHNIER: Are they arguing for processor shares, then?

MS. QUIGLEY: That was actually brought up and that was talked about straight from the beginning about – anyway, that was shot down very early on. It was pointed out the problems with that and that NMFS does not endorse those. There is a letter from GC that says that they don't endorse those, but that was something that they talked about.

Just to clarify, when you asked me don't they understand this; those fishermen are saying all sorts of things. There are different groups of fishermen saying all sorts of things. When I answer, I'm just giving my general perception, but there are really people saying all sorts of things. There are people concerned about community.

Then there are people just wanting to survive in those states, so they've said, well, let's have an eligibility requirement right now that unless you make 50 percent of your income from fishing, you're out. There people who want that. There are people who say you've got to cut everybody out and we've got to do a buyback.

Of course, there is no money for a buyback, and they can't really do an industry-funded buyback. We don't have a politician to really get the money to do a buyback and would a buyback be successful or not. We've talked to them about some of the problem with buybacks. There are people thinking all sorts of things, but one thing we've tried to do is educate the public about share programs, and that, yes, you do assign a cap.

There is a cap and there is typically a use-or-lose policy and there will be a referendum, and some of those things calm people down quite a bit. I think they're just afraid of losing out and that their community is going to change, and they don't know what it holds for them. One thing they have asked for is details which this options paper does not provide at this time.

DR. MacLAUHLIN: So I'm just now starting with this, but I'll be working with Kate on it. One thing that I would be interested in from you is like some creative ideas. I think the southeast is very unique and different from the rest of the country in that we're really small scale and our guys switch back and forth a lot and working multiple fisheries and changing whenever they need to.

I think because we have a unique situation here, we can get really creative with our catch share program. I feel like we're not confined necessarily by 303A and we can take pieces from it and

we can do some community quotas and regional quota thing – anything we want, really, and so I just would like to hear encourage you to think a little bit outside the box of some ways to address some of these goals without hurting the small-scale fisherman. I don't know; I would like to see like a little bit of like it's not necessarily an ITQ, you know, that we can do just about anything with this and address this problem without really nailing the fishermen.

DR. MURRAY: Well, if there is overcapacity now for what we think that the stocks can provide, then the necessary goal is to get some people out or least some effort out and necessarily people, so it seems like there is necessarily going to be some losers here who are going to oppose it if they have some foresight that they're going to losing. If we're going to try to find a way to get people to vote for something that at least for some of them is against their own economic interest at least in the short run, I'm not sure if there are any creative solutions for that one.

DR. SCHNIER: Well, the other thing I want to ask here is you said goals, and this gets back to even what you said earlier, is that what do you mean by goal? I mean, from an economics perspective, we'll maximize rent from some fishery, but that doesn't sound like a goal here at all. If that was the goal, catch shares would be a no-brainer, but I think the question is maybe how would you allocate those actions or sort of optimize over other goals.

And so if you're talking about community protection, then have the council tell us how much – I mean, if they could do a hundred percent breakdown and prioritizing, it being maximizing economic rents in the fishery, maximizing community rents and preserving X, Y, Z, if we knew that breakdown, I think we could easily design a catch share system that could address those systems by allocating catch shares in such a way that you preserve revenue flows through the sectors that you're worried about protecting.

But, you really are arguing about a total unknown here. I mean, we can go ahead and say if there is all these goals, but we have no idea what those goals are. From an economist, we're just going to go right back to maximize your rent, and that's just where we're at. I would like to hear, no, we don't care as much about that as we care about that. Okay, fine, you care about that, this is how we design it. That's what I would like to know, what are we talking about?

MS. QUIGLEY: Yes, the fishermen in the LAP Exploratory Workgroup, they actually laid out goals. Now, of course, lots of them are conflicting and they're not prioritized, but they came out with a list of like 15 goals. Well, they have a goal and then they have like 15 objectives. The council took a look at those, but, yes, perhaps one way is to have the council take another look at those; suggest to the SSC that a recommendation is made that the council take another look at those goals and perhaps prioritize them or change them in some way.

But we do have one overarching goal and let me try to find it, and this was something that the council – there was an overarching goal for catch shares, so I'm going to try to find it right now while we continue to talk.

DR. WHITEHEAD: While Kate is doing that, can I go back to the administrative cost issue? I'm asking a bunch of questions because I don't know. The administrative cost of managing these fisheries is pretty high right now; it's not perception. If catch shares are implemented and

they become successful, would that decrease the administrative cost over time instead of rolling out a bunch of amendments? What would be the long-run projection – long-run comparison of administration costs?

MS. QUIGLEY: Yes, that will have to be evaluated, but my perception is the following; is that it depends if you increase enforcement and what you're monitoring is going to be for the catch share program. I costed out the administrative costs for the Pacific Fishery before, and that's what it comes down to.

All this development and the meetings and everything, we're doing meetings, anyway, so that's not the big cost. The big cost comes down to the monitoring and observer coverage and any increases in enforcement that you're going to have. What enforcement has said is that you need to have VMS. Okay, well, there is already a fund out there to pay for VMS units, but the fishermen will have take care of maintenance of those VMS units once they're installed; installation, maintenance and then monthly fees because they can do e-mail on it and they have to pay for their e-mail.

Some of the cost is covered by fishermen and there are different estimates of how much that is per year. Then you've got the administrative costs of monitoring. That could be video monitoring; it could be on-board observers for this fishery. There is a video monitoring pilot that has occurred, and it's looking to see how cost effective that is. We don't have the final results from that yet.

On-board observers for all vessels is really not an option here. The cost is way too high and the fishermen would likely have to pay it, so it's not going to be like on the Pacific which is going to have a hundred percent observer coverage. We have to think of really inexpensive creative ideas if a catch share is going to be implemented here.

One is have certain places that you can land so you limit enforcement only having to go to certain places. Have only certain hours where you're going to land; that's another way to decrease cost. The real question is what kind of monitoring are you going to have, and so that's where the big comes in. Other than that, yes, there is an increase in costs, but there could be decrease in costs for fishermen over time; and so, yes, that all needs to be evaluate My perception is there will be decrease in cost over time, but you've got to decide what you're doing with regards to monitoring. I don't mean VMS; I mean some sort of accountability. If it's going to be a paper trail, it is going to be cheap.

DR. MURRAY: Well, one of the advantages of turfs is that VMS is almost sufficient in terms of monitoring. We just know where you are; and if you're not where you're supposed to be, then you're in trouble. You mentioned, when we talked about turfs initially on this, that the snappers and the groupers move around, but they're not highly mobile, right. What is their range; do we know on these guys, 50 kilometers, more than that?

MS. QUIGLEY: Gregg, can you help me out with this? The question is what is the mobility –

DR. MURRAY: Adults.

MS. QUIGLEY: – snapper grouper adult species; so if turfs, territory use rights were implemented; would it be appropriate or inappropriate?

MR. WAUGH: It varies by species and there is some movement; but for the most part as far as they're managed, they're managed as once they settle out, then they're managed separately in the Atlantic and the Gulf. They're managed as if there is no movement, but definitely there is some movement by species, particularly in the Florida Keys. There is some recognition that fish in the Gulf contribute some to the Atlantic, but they're managed as two separate stocks.

DR. MURRAY: But that's in reproduction, right?

MR. WAUGH: Yes.

DR. MURRAY: An adult grouper hangs out in a pretty small area, right?

MR. WAUGH: Yes, you do have some movement. For instance, gag move a fair amount. There are some species that have migratory movements, but not across council jurisdictions.

DR. MURRAY: I guess the question is would they be small enough to make regional fishing rights sort of – if that made economic sense because we're interested in maintaining certain fishing communities; would their movement be sufficiently small so as to have sort of sub-stocks that are associated with socio-economic regions.

MS. QUIGLEY: So what is the range that we're thinking about for territorial use rights? Are we thinking about ten or ten miles or twenty by twenty miles, sixty by sixty?

DR. MURRAY: I guess that's what I'm asking. I don't know enough about the specifics of the socio-economics or the biology, but I'm wondering if for these particular reef species, if they're going to be moving little enough to match up with communities, right, or maybe clusters of communities.

MS. QUIGLEY: I think the fishermen's perspective is no, but that might not be accurate.

DR. SCHNIER: The other alternative – I mean, we define turfs by the area in the ocean in which they fish. The other way of defining turfs is by the port out of which they come out of, and so you could monitor it from this is the port they use, and we're going to allocate X-amount of pounds to everybody out of this port, this is your group, have at it; you know, allocate among yourselves through whatever mechanism you want to use for enforcement and things of this sort.

That's another way of doing it where then you're just putting restrictions based on landings and you can't have boats coming from one port going to another port, and that's where the enforcement comes into play. The VMS is a non-issue at that point because their spatial constraint is their capacity of the vessel to go out.

MS. QUIGLEY: So, basically is that the same thing as a sector allocation?

DR. SCHNIER: Yes, basically a sector allocation. I think sector and turfs can be analogous. Turf has a spatial component and sectors have an aspatial component, but they're fundamentally in principle the same element.

MS. QUIGLEY: We haven't talked about sector allocation too much down here. During the public hearings, Kari did some explaining to people on TV cameras before she even works for us about sector allocations, what sector allocations are and kind of how they work. There were already people railing against them even though no one really knows anything about them. Yes, that's something we can definitely explore. We just need to do some clear education and perhaps not even call it sector allocation but call it something else.

DR. SCHNIER: Just out of curiosity about the regulatory costs that John brought up; what is the ratio of cost to revenues in fisheries, regulatory cost to revenue?

MS. QUIGLEY: Don't know because the administrative costs have not been tallied as far as I know. They're not tallied for this specific fishery. The enforcement is provided – so coast guard and enforcement is provided for the South Atlantic Region and not for this specific fishery. The mackerel fishery is more profitable than the snapper grouper fishery.

I mean, we're looking at \$12 million I think are the revenues – 12 to 15 million are the revenues for the snapper grouper fishery, and it's going down because of implementation of ACLs, so I don't know what the administrative cost is. Also down in St. Petersburg, Florida, they also do work in the Gulf and in the Caribbean, so no one has bothered to say what the administrative costs are because they'd have to split up between three different areas.

DR. WHITEHEAD: I think the cost of the scientific study of fisheries is pretty high as well; so that we're not picking on the administrators, we're picking on ourselves as well.

DR. SCHNIER: No, no, we're guilty; we've gotten money from them. I'm just thinking from the perspective of that we're really arguing over really a thin margin here, and that's why I'm wondering how much is it really worth arguing over?

DR. LARKIN: Aren't they limited to 3 percent X-vessel value for cost recovery?

MS. MacLAUCHLIN: Well, that would only be if it was a three-year program. For example, New England sectors are not considered 303A so they don't have a cost recovery, and it's just up to 3 percent. If it is less than 3 percent, you don't have to collect 3 percent. The Atlantic Scallop Fishery figured out a way to not pay that and the quahogs, so there is a way to I guess calculate cost recovery and bring down the administrative costs. It helps when NOAA gives you bunch of money like the New England sectors and Pacific trawl.

MS. QUIGLEY: It seems to me one way to start is find out what is it that the fishermen want, and the best indicator we have of that is this workgroup. I found the goal that the council came up with. Robert Boyles and the council wrote this overall goal that they had for an LAP Program – at the time LAP so a catch share program – and that is – and I've got it up on the screen – to refine a system whereby profitability, efficiency, fairness and capacity of the commercial

snapper grouper fishery are aligned with the available yields from the South Atlantic Ecosystem and which contribute to conserving healthy stocks and/or rebuilding overfished stocks consistent with the Snapper Grouper FMP and the Magnuson-Stevens Act. So it's basically everything, profitability, efficiency fairness, and it's everything in there. It's a goal; it's very overarching.

DR. WHITEHEAD: Can you work with that, Kurt?

DR. SCHNIER: My point is, relatively speaking, weight each of those. Say, okay, you have a hundred points; tell me what hundred points you want allocated toward profitability, toward efficiency, toward fairness, toward capacity. If it's equal, then, fine, we can come up with a mechanism that can do an equal allocation across those objectives, but otherwise I think – I mean, that's what we're arguing about. We're arguing about the weighting scheme of these things. We're not arguing that much beyond that.

DR. LARKIN: Well, I think those terms mean different measures to different people. I don't know if it would be easier for them to think about specific quantitative measures that they would like to see in ten years. Do they want to talk about the number of boats? Do they want to talk about the number of communities? Do they want to talk about the number of fish?

I mean, what are the quantitative measures that you could come back to in ten years and test whether or not you're getting toward where you want to go because when you look and efficiency and capacity you could look at them the same way. I mean, are we talking fewer boats? Okay, so maybe that would be one; we would be looking at number of boats.

I don't know if it would be easier for them to think like that; I mean, if they wanted to look at number of trips taken or they want to look at days at sea. What are the metrics that define their measures of success?

MS. QUIGLEY: This is just my perspective – and, David, I think you should probably maybe respond to this if you have something to say – my perception is that there is a hesitancy to really go and say, well, we want to see 200 vessels in the fishery in ten years, and we want them all to be full-time snapper grouper fishermen.

I don't think they're comfortable with saying that because it upsets the status quo and it's not really for them to say. Some people feel it's not really for them to say, and so instead they've asked this workgroup to come up with, well, what do the fishermen want? And so the fishermen came up with these objectives that they thought would achieve that goal. Of course, they're not prioritized. They do talk quite a bit about protecting fishermen historically invested in the fishery, provide them with opportunities to continue harvesting in the fishery, enhance the viability of fishing for fishermen historically invested in the fishery, protect current crew employment.

They have all these different things, but a lot of them are conflicting in some ways. I think the council might benefit from staff and the SSC and the SEP coming up with perhaps what do we think could possibly work here, what could work? What could benefit the most people here that would be low cost and would be least upsetting to the status quo.

What do we think is one option or what do we think are five options that could actually work here? A community, a CD2 is not going work here. There is not enough money. They spend \$16 million a year funding that program in Alaska. You have to have a non-profit group for each community; it's probably not going to work here.

There are some things that can be cut off the list right away. Gregg was just saying it depends on species – what species move around. Gag moves quite a bit, he is saying, but I think red grouper, he was saying are pretty – stay in the same place. They're pretty sedentary. Should turfs be taken off the table if we came up with a list of things that probably weren't – you know, if it wasn't going to work.

I think the council is looking to us to really come up with – and they've given us almost full flexibility with regard to the options paper – and instead of coming back with something, well, we think this would work, this would work or this would work; instead we came back with something very generic, very generic, so now we need to get down to work. David.

MR. CUPKA: Another important aspect of this, too – and I agree with you somehow some of these things need to be quantified because in five years you've got to evaluate the program. We ran into this very thing with wreckfish. The goals and objections are so generic and general, you really couldn't evaluate the success of the program because you just didn't have anything to pin it on. There were no quantitative goals or objectives, and that's similar to what you're talking about that we're really discussing how to weight these different things. At some point it has got to be done or we won't even be able to evaluate these programs.

DR. MURRAY: Is there anything about status of the stock in this document? I am just curious as sort of how much we're looking to ramp back on future catch versus what is going on right now.

MS. QUIGLEY: Well, we're not really looking to decrease catch beyond what is being implemented in the Comprehensive ACL Amendment. We have this Comprehensive ACL Amendment, 17A, 17B and Amendment 16. Those all deal with placing a cap for each and every species in the snapper grouper fishery. So, Amendment 21 should not have to be concerned with cutting back. It should only have to be concerned with –

DR. MURRAY: I guess the reason I'm asking is because I'm looking at these goals, and I'm thinking so the only way you could really pull all these off is if you didn't reduce the catch at all given what has been historic or you imposed incredible technological restrictions.

MS. QUIGLEY: Yes, and the fishermen realized that and they were just like throwing out stuff and they're like, well, this is what we want.

DR. MURRAY: So can we tell them that's not possible?

DR. WHITEHEAD: Well, they know it's not possible, right?

DR. MURRAY: Right.

DR. WHITEHEAD: Because they know there are catch limits. Do we have those numbers?

MS. QUIGLEY: Yes, we can have them after lunch.

DR. MURRAY: At least there are specific ones that should be pointed out; I mean, particularly maintaining crew employment and stuff.

DR. WHITEHEAD: If we're not given specific goals; if we just adopt the goal of efficiency and work with that.

DR. CROSSON: Well, we can certainly point out that some of these are in conflict with one another and go down that list. Maybe we should do that after lunch.

The Social and Economics Panel of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Tuesday afternoon, February 15, 2011, and was called to order by Chairman Scott Crosson.

MS. QUIGLEY: Okay, we're back and as promised I have those numbers for everyone to look at. These number that I've got up on the screen is Table 4-18. This is Page 206. This table shows the ABCs for assessed snapper grouper species. These are from previous documents, from 17A, 17B, Amendment 16. These are the overfished species or some of the overfished species. These are the ABCs that people will need to fish under.

We've got the ABC equal to the ACL as the preferred of the council. What you see here is what is available for commercial and recreational fishermen to take. This is 75 percent of the OFL – no, sorry, not these. That's the table below. These are the numbers, though, that we're working with. These are the species that people have, well, primarily targeted; that people actually go out for.

And then there is a table below that, Table 4-19. You guys don't have this document that we're looking at, Table 4-19. This lists all the other species in the snapper grouper fishery that are remaining within the snapper grouper fishery that are in the Comprehensive ACL Amendment. In this first column – well, the first column is the species common names. The second column is the OFL, and then the fifth column is ABC equals 75 percent of OFL. That is the preferred of the council.

For example, yellowedge grouper, which is the first species on this list, they're looking at an OFL of about 26,000 pounds and an ACL of 19,471 pounds, so we're looking at very small numbers for some of these. In a catch share program, the fishermen have talked about doing catch shares for the species in this first table.

They've talked about it for black sea bass, gag, snowy grouper, golden tilefish, vermilion. A lot of these have got higher ACLs than some of the species down here, which often are not targeted. Some are beginning to be targeted, though, because there is not a whole lot else to fish, but a lot of these are bycatch. That's the numbers that we're looking at is in many cases below a hundred thousand pounds and definitely below a million pounds.

(Question asked off the record.)

MS. QUIGLEY: What's that, for gray snapper?

(Remark made off the record.)

MS. QUIGLEY: Yes, and I haven't heard of many people targeting that, so I don't know if that's a bycatch or why not, but, yes, that's a larger number.

(Remark made off the record.)

MS. QUIGLEY: Right, so, for example, blue runner has 665,000 pounds, so that's a lot, but people don't typically target the blue runner that I'm aware of. Maybe they will start, though, because it's available and maybe markets will develop for those. For species that we're talking about, the fishermen actually came up with species they really wanted to see incorporated into a catch share program.

One of the options, they said, was all marketable species. Of course, what that means is the species that aren't chosen probably would start to be targeted. Right now we're seeing triggerfish targeted and amberjack targeted more. Blueline tilefish has just really ramped up. People are targeting that whereas before they weren't targeting that as much.

Then another fisherman said, well, we have to incorporate everything because everything is going to be targeted some day. Anyway, that's where we're at. And then Kari had a comment before about trying to figuring out something that works for this fishery and trying to be creative. One of the things that I had wanted to point, if I can just find it, was that in the Snapper Grouper Amendment 21 that you have, on Page 12, Section E, catch share design, Action 8, so it's the first action under the catch share design, so it's PDF Page 12, catch share participation, there are options here for different types of catch share programs.

Alternative 2 says participation will be mandatory for fishermen harvesting catch share managed species. Alternative 3 says participation will be mandatory as long as the referendum is passed, and we don't know what the criteria would be. Alternative 4 says we could have a catch share program that is voluntary, and then the people who chose not to participate in a catch share would be left in some sort of common pool.

DR. SCHNIER: That's exactly what they did with Amendment 80 up in Alaska. It's actually an interesting program because you've got basically the catches' allocation; and then if people make their catch allocations, then say, oh, well, if you're not part of this, and that's part of the common pool for everybody, and what it has actually degenerated to is that they're basically – the guys that didn't opt in now formed their own cooperative basically. It is in essence a full catch share system. It's interesting that you came up with this idea.

MS. QUIGLEY: Andy Strelcheck wrote this up. We've been talking about a voluntary catch share program for a long time because we have these Florida Keys fishermen who don't want any part of catch share, except for a few, don't want any part of a catch share because they rarely

use their permit, and they're afraid they're not going to get anything and they won't be able to remain in the fishery.

One idea was, okay, let's leave the Florida Keys off. But then there are North Carolina fishermen who don't want any part of it, and so the idea was, okay, well, why we don't have a voluntary program, we see that as possibly the only way to go at this point in time. Andy Strelcheck, who works for the National Marine Fisheries Service and helps to run the red snapper and grouper and tilefish fisheries, suggested that.

DR. SCHNIER: Can I ask a question about catch composition? My hunch would be then these fisheries – you can't really necessarily target a given species at any point in time; and so when you're catching things, you could be getting vermilion snapper as well as red snapper and any other species at the same time.

And so I'm actually wondering whether or not a sort of cooperative pooling catch share system would be to make sense from the – solve a portfolio or management problem; because if you're part of a cooperative and the cooperative has the allocation, then if you catch something, you just subtract it from your pool or within your group versus being counted against you, because otherwise it's a huge portfolio problem. I don't if anybody has actually addressed that yet or not.

MS. QUIGLEY: Yes, fishermen have brought that up. There are some people, for example, the golden tilefish, they only target golden tilefish. It's a pretty clean fishery and they might catch some snowy grouper, but that's about it, and they bring in only golden tilefish and maybe a little bit of snowy grouper.

Then there are other people who are just fishing blueline tilefish, so these are longline fishermen. Then you've got other people who just go out for vermilion but they do bring in a little bit of a diverse catch. Then there are people who just go out for anything that they can find at all, and that's where the problem comes in.

That's where they say, well, we can't do catch shares because we go out for everything, we don't target anything. For some people, it's okay; for like golden tilefish, it's probably okay; for vermilion, it might be okay. But, right, then we have these other people who go out for a portfolio of – who participate in a portfolio of fisheries and in the snapper grouper fishery and they just go out for whatever they can find, hogfish, triggerfish, grunts, anything they can find.

DR. SCHNIER: Could you structure a two-tiered system where it would be elective on a cooperative section and then non-elective – I mean, elect to be in a cooperative group for a species portfolio or go into a single-species quota management regime so you could either participate as a group or you could participate by yourself; so the species that target purely, you're able to go do their own thing on their own. The people that tend to do things as a group can form cooperatives.

MS. QUIGLEY: Yes, and I think that's the kind of suggestions that I'm looking for and perhaps the council is looking for is can – and this would be done species by species basically; you know,

is it going to be voluntary or not and each vote would take place for each species. Yes, that's the kind of suggestions we need; I think it could be.

Another suggestion is for a tiered initial allocation system where you have the council saying we want to support full-timers and part-timers and people who don't fish very much but want to have the opportunity in the future, so you allocate a certain portion to full-timers and you say, okay, let's allocate this among people who harvest 10,000 pounds or more each year.

And then you have another portion allocated for part-timers and you say, okay, you just have to harvest a thousand pounds per year and then you're in. And then you have another tier that is for people who have harvested from zero to 999 pounds, and those people get an equal allocation of so much, and then it's up to them to form a cooperative, if they like.

I think there are different ways to go to try and incorporate everything. Maybe you won't make everybody happy, but incorporate other people. I think the suggestions, though, that you just came up with have not been discussed. Those have not been brought up, and I think it's probably good to just expand the council's kind of thinking about what catch shares are, to maybe start writing some of these down and say these are some ideas if you want to have people that opt out or want to have people who just don't think they're going to make it in this system; what are the options? Maybe that's a way to go and here are some suggestions.

Another thing that I was talking about before, when we ended the meeting, was another way to go could be – if your goal is economic efficiency, then what you want to do is create maximum flexibility. If your goal is fairness and equality, what you want to do is have a tiered system; or what you had suggested, a voluntary program or two sectors where you have one IFQ program and then a cooperative type program; and say if you have this goal, then are options, that's another way to go. So I'm not sure exactly where we're going with this or we're going to end up, but just throwing some ideas out.

I guess maybe what you could think about is what kind of product in the end would you like to provide the SSC with that they could then provide the council with; like what kind of product in the end do you think would be useful to the council. I think what would be useful is something like I just said; either say if your goal is this, then here is some advice we have; or, to just come up with programs that you think might be successful in the South Atlantic snapper grouper fishery given the situation and the limitations that we have; here are some things that might work; just here are some ideas, and then we could incorporate them into the options paper. That's actually the easier route to go.

DR. WHITEHEAD: The easier route sounds better to me; knowing the SSC and what they might do with the first option. I don't think that would work well at all.

DR. SCHNIER: Would you explain what the easy option is again?

DR. WHITEHEAD: The easy option sounded harder, actually. The hard option is to say, okay, our goal is efficiency and this is what we think they should look like. The easy option is Kate knows what these folks want and we're going to work our way down that path.

MS. QUIGLEY: Yes, what my perception is – and, of course, Gregg can chime in and everyone else and David – you know, what is our perception of what people seem to want at this point in time, and then you provide us with feedback on, well, here are some options that we've seen work elsewhere or here are some options that might work.

Of course, this would go through the SSC. It would be passed to the SSC, but the SSC could pass it on to the council and say please incorporate into the options paper. We could then incorporate those options in, so I think that's the easier route to go rather than – the council is really looking for some maybe full-fledged ideas; but the prior, the one where you say, well, if your goal is this, then here is some advice, that might be a longer road.

It might be more difficult for the council to handle than just coming up with some example programs that might work here. So maybe what we should do is just list out what we know about this fishery, just some of the major things that we know about this fishery that are limitations on catch shares or maybe you have some questions about the fishery.

For example, experiencing derbies in several species, that's one thing that we know about this fishery. Another thing we know is we have a mix of fulltime, part-time and latent permits. Another thing we know is no strong support for catch shares thus far. The support that exists is coming from people with lots of landings; low-volume; low-value fishery.

DR. MURRAY We also know that there is a plan to reduce catches one way or another.

DR. SCHNIER: I think what you had pointed out was that it's actually a mixture of multispecies fisheries and tier-species fisheries like in the sense that you can purely target some species but some you can't, and that makes it a real difficult scenario to deal with if you're dealing with them all simultaneously.

DR. CROSSON: Well, maybe that's something to write up there. The first thing that pops up in my mind is that trying to reduce the number of permits has not been sufficient for controlling effort in this fishery. Those permits are very broad based right now and they're not sufficiently dealing with the fact that you can for some species selectively target catch and for other it's a group. That's something that any reform should incorporate, addressing both of those issues, anyway.

DR. MURRAY: It seems like one of the things to address is that several of the – before we broke for lunch – several of the objectives or goals, I don't remember which one it was, of the fisher interests are just impossible to reconcile with the required reduced catches. It just seems like we're not addressing – I mean, you can't address specifics of the catch share program until you address the fact that you're going to be reducing capacity and so everybody is either catching less or some people are out.

MS. QUIGLEY: Yes, and that will take place prior to the catch share to Amendment 21, so that will happen January 1st probably 2012, because it will be approved in June, and then it will be implemented and then they will be living under those ACLs prior to implementation of a catch

share if the council decides to go that route. I'm thinking of it more as a separate issue, but we need to go under the assumption that the status quo is going to be very low catches.

DR. MURRAY: I keep coming back to turfs; but I think that Kurt's comment about the difficulties of dealing with the multispecies and the single-species aspects, one of the nice things about turfs is you've got regional groups who are just managing a multispecies ensemble. They have rights to that potentially perpetually and so they have an incentive to manage it as well as they can.

DR. SCHNIER: I guess the idea – if I were to undertake this, there is that idea; but the other idea that I was thinking about was if you had a referendum on each species and each species had to vote whether or not they wanted to manage it as a single-species quota assemblage or if a multispecies assemblage was warranted; and then conditional on that vote, making an optional referendum of, okay, now that you're going to be in a multispecies, do you want to have individual quotas or do you want to have a co-op quota where you form co-ops for management would be another way of addressing this issue that has much more of a regulatory top-down approaches to it than a turf but preserves some of the quota regime type properties that we kind of like. That could be another way of addressing it. That really does seem like a pretty massive issue that I could imagine with this fishery.

MS. QUIGLEY: One thing I should mention is Action 3 of the Comprehensive ACL Amendment establishes species groupings for snapper grouper species. There are species groupings the council is deciding upon as far as assigning ACLs. This is the Comprehensive ACL Amendment and you don't have this document, so Myra is going to do a little explaining.

MS. BROUWER: The species groupings' approach was basically – you know, the SSC was very reluctant to endorse any kind of species groupings, but the council – the reality is they have to figure out a way to track these ACLs for all these species. The first thing they did; Action 1 of this amendment removes – they're looking at removing probably 35 species from the FMU.

And then the remaining ones would be grouped under an approach that combines life history characteristics and also the species that are landed together, so it captures what you were talking about. The way they would do is they would individual ACLs for those species that you see on the right, and those are species that have an overfished or overfishing status for which there is a lot more information.

Then the other ones would be grouped into these complexes. They would continue to have individual ACLs, but then accountability measures would be triggered when the overall ACL was exceeded. If only one species within the complex exceeded their individual ACL, then only that species would be subject to accountability measures. It's a little hard to explain, but it's sort of a tiered approach that doesn't penalize the entire complex. It doesn't shut down the entire complex if only one species ACL is exceeded. That is currently what the council is looking at as their preferred for species groupings.

DR. SCHNIER: It's basically just a sector program down here, right, in essence. I mean, it's like you'd have in New England. I think New England was assemblages I thought and then the sectors were allocated quotas and then managed beyond that. Do you know?

DR. MacLAUCHLIN: The way the New England Sector Program works is that there are 16 stocks that are allocated. Some of them are the same species but in different regions; like Gulf of Maine; and then Georges Bank, east and west; cod and stuff like that. There are 19 sectors I think for this year, but 17 in the last year.

Each member of a sector has – based on their permits that they own has a potential sector contribution, is what it's called, and then that goes into like the sector's pot, and then the sector is allocated – you know, they are the ones that get the allocation and that's why it's not considered a LAP Program because it goes to the cooperative basically based on who is a member of it.

And then they are jointly and severally liable; so if a sector hits its limits for any of the species, then the whole sector gets shut down. They can trade inside and they can trade between each other. What it's supposed to do is that those choke species that have really low ACLs, it's to protect them from – you know, like one fisherman having one bad day where he hit a bunch of yellowtail and maxed out his quota, and that was it. Now he can – it's a risk pool and he can go back to his sector and they have to help him out legally, but there is peer pressure and stuff like that to help out.

DR. SCHNIER: When you call it the risk pooling, that's exactly why I was proposing that you would have those people that opt into groups and assemblages in this sort of way because then when – precisely, if somebody has a bad draw and they don't have the quota for it, they can get it from somebody else in their group. And likewise vice versa for other species going across, it would make a lot of sense.

DR. MacLAUCHLIN: I think if there is some kind of multispecies – I mean, it's a complicated program because it's multispecies and then it's the sectors, and they have to trade. The way that everybody is okay is that market has to work really well. There has to be a supply of quota in some way for them to draw from, do you know what I mean, like if they have to trade.

DR. SCHNIER: Well, I think in New Zealand they had something that is referred to as “deemed values”, I think is what they were using; so that if you got caught in sticky situation, there were penalties that were coming out of it from the deemed values of catching something that was beyond. I haven't studied New Zealand that much or much at all. The deemed value stuff was a way of getting around some of those issues that could cause problems with multispecies assemblages.

MS. QUIGLEY: Yes, it was. There were a lot of problems with that program, though, and I think they're trying to do away with it or they've done away with it, I can't remember which. There were a lot of problems in that they couldn't assign the correct prices. The problem was they had to assign the correct price and finding out the correct price to deter people from taking

those species was the real trick. It hasn't been followed much in the past, but, yes, that is one way.

I think down here with such low ACLs, yes, there are going to be some species that trigger our problem with red snapper and snowy grouper. My thought is that once they set up the system in this way where we've got deepwater grouper and tilefish complex, which is three species, yellowedge grouper, blueline tilefish, silk snapper; and then you've got a jacks complex; a snappers complex; porgies, grunts and hinds complex, because these are all caught together; and then you've got the individual ACLs, it makes sense to me that the way they would go is to transfer these over to catch shares.

They would individual ACLs for each of these and they would have the individual catch shares for each of these and they would have individual catch shares for each of these complexes. That's kind of the way that I see it happening. But, yes, you could assign each – a certain amount to each group or community group or tier.

Right now I was just making a list of assumptions about the fishery that we believe to be true. Number one, catches will be reduced from current levels. Another one is fresh catch is being brought in right now. There is nothing frozen. What are the actual product changes that you might see under a catch share? We don't know. I don't think there would really be any except maybe a better quality fresh catch or niche markets can be targeted.

There is a mix of multi and pure species – pure species being tilefish, black seat bass and perhaps others – mix of fulltime, parttime and latent permits; derby fisheries going on right now in several fisheries, not all but in several fisheries. I'm trying to think of other assumptions that could help just in conversations about different catch share options.

DR. MacLAUHLIN: How are the prices like in market prices for the fish? Have they been stable pretty much or they fluctuate in season or have they been going down overall?

MS. QUIGLEY: Yes, I just did some of this analysis with Chris Dumas and it looks like about five years ago prices were two dollars or two-sixty and then they went up. They were at their peak in 2007 and they've recently come down. We think they've recently come down – one reason might be the recession but another reason might be the fact that we've got a greater derby now than we did back then.

Right now the species that are targeted are two dollars to two-fifty, but people are starting to target species that are a dollar or a dollar-fifty because they've run out of things to catch. Black sea bass, we've seen prices go down recently due to the derby, so we could have some higher prices under a catch share type program.

DR. CROSSON: Are there competing suppliers for this market coming, what, from the Gulf, the Caribbean, Central American, other places that are supplying some of these same fish to the market?

MS. QUIGLEY: Caribbean and Gulf; it's basically everything sold as a grouper, primarily. They're competing with imports from the Caribbean and stuff coming in from the Gulf as well. They're a price taker, but there can be some local impacts on that.

DR. MacLAUCHLIN: Is it a regional market like southeast?

MS. QUIGLEY: No, I think a lot of it is shipped up north. What we've heard is that there is a tractor-trailer that comes down every week and people load up whatever they can into the tractor-trailer and it goes up north to – I thought it was to Canada. Anyway, all we know is it goes up north and the perception is that it goes to Canada. Some of it is sold locally, but I think the majority is shipped up. I guess that is a good question for the Snapper Grouper AP.

DR. CROSSON: I know at least Jack Cox is shipping a lot of his stuff up to the Washington, D.C. area, some of it is being consumed in the U.S. northeast and not just out of the country.

MS. QUIGLEY: Yes, some is shipped up to New York for the New York Auction. There are some fishermen who do their own thing and they sell to restaurants. There are a couple of fishermen doing CSX. Okay, I'm going to also add just as an assumption – I guess we're just kind of brainstorming right now – another assumption is we have certain regions, so some regions don't use permits often such as the Keys.

Some regions participate in portfolios of fisheries more often. We have strong opposition to catch shares. I think some people are kind of in favor of cooperatives but they don't really know how to set them up themselves, so that hinders their talking about catch shares and sector allocation because they feel it has to come from the fishermen primarily. What is your understanding; is that true or can the government set up something like that, like in New England?

DR. SCHNIER: The distinction here between sectors and cooperatives seems a little nebulous to me because you're dealing with a small fishery, like small poundage and small-sized fish, but the sector and the cooperative itself can almost be an entity unto itself versus large-scale fisheries where the cooperatives would be groups of 50 or 60 boats who have gotten together; and from that group ten boats might fish and they'll pool their quota and move it accordingly.

If you do the assemblages, fine, but it would be interesting to see how many boats are within those sub-assemblages because that in itself might actually form the sector and co-op jointly. They might be self-compliant by assemblages. I'd guess if you wanted to add some distinction, you could add regional definitions to them like different states, because I imagine people that are in Florida or Georgia don't want to be lumped in with some other people that are in different regions.

MS. QUIGLEY: There is a strong preference among the fishermen for state-by-state management or for regional management. For a long time it has been pushed, well, North Carolina is very, very different from the Florida Keys. We can't fish year round so we want to have our own quota. I think there is support for some sort of regional management. I think that is there.

It's just in the past we've talked about the state taking over the management. In some cases like in North Carolina they're ready to do so and they've been willing to do so. In other cases, not for corals but for other species, the snapper grouper species, Florida has said, no, we can't because we don't have the staff, we can't. I just wanted to say that because I think what we're talking about here is not necessarily the state taking over management.

But, when we're talking about regional quotas or regional management, we're not talking about the state necessarily taking over management. We're just talking about an allocation to a particular region, right, that's what you're talking about.

DR. SCHNIER: Yes, I'm talking about an allocation to a particular region where the co-op would be defined by the ports and the assemblage. You've got the jack assemblage at X, Y, Z port, and that actually in itself could actually help preserve some of the community interests if you're looking at sort of the multi-dimension objective of making sure that you preserve the economic viability of the community. That could work as well.

DR. MacLAUHLIN: I'm thinking about like port-defined allocations specifically. I mean, would it be you could belong to more than one port because fishermen land in different places I guess depending on whatever they're doing. Would you have to like choose one? I don't know.

DR. SCHNIER: I really don't know how those work. I guess this whole thing that I'm sort of brainstorming here is more of like it almost seems like a second-best alternative because I just don't feel that the first best is just allocating them catch shares and letting them go figure it out is probably not going to work.

I'm just sort of thinking of ways so people could potentially get some more outcomes given their objective. I would imagine then if there are multiple ports, you still probably aren't necessarily – my hunch is in small-scale fisheries you wouldn't have somebody that is landing in South Carolina also landing in Florida. I just don't know if that would be happening as much as it might be a few ports. And to what degree you can spatially define those regions would be advantageous.

DR. CROSSON: I was working for the state of North Carolina for the flounder allocation through the Mid-Atlantic Council. Occasionally they would swap quota back and forth on a – I think this was a formal basis; but just because a boat might be coming down from the northeast and because of winter conditions or Oregon Inlet, they would be allowed to land in Norfolk or something like that, which the state would temporarily shift allocation from one state to another with the expectation that would be shifted back at a later point. You could allow different ports to do that, I would think, under this system.

DR. MacLAUHLIN: And who would manage the quota?

DR. MURRAY: That would be the key, though, is that the council would have to determine the share that each unit – whatever we're calling them; whether they're ports or collections of ports get and then within the unit they determine how it's divvied up and they can trade it between units if they want. They don't have to.

MS. QUIGLEY: So we would need some sort of non-profit or group of fishermen to say we are an entity and we will manage this quota?

DR. MacLAUCHLIN: In New England they're voluntary. You can choose some – you know, I think the contracts are for a year so you can switch in between them, but most of them are based on an organization that the fishermen were a part of to begin with, so they know each other. You're counting a little bit on peer pressure with bycatch rates and reporting and things like that. I think in the South Atlantic that is going to be a challenge because we're not –

DR. MURRAY: Well, you could always come up with a default that they get if they can't agree on something, right. You say each port can manage itself as it wants; or, if they all want to do something different, then you just allocate their whole share equally and then let them argue about it, or something like that; some default that if there is no agreement, that's the way it's shared.

DR. MacLAUCHLIN: Well, I guess like, for example, if Key West had an allocation, most of those guys are on Stock Island and they're all, you know, right there. Would we give it to a non-profit or would they have to hire a sector manager? In New England each sector has a manager that manages everything that they do.

DR. MURRAY: I think that is sort of – I mean, we've talked a lot about heterogeneity and the different regions and stuff, and that's sort of the advantage here of just letting them figure it out themselves and just build into the amendment some kind of fallback. If they can't come up with a deal, then we hand you the way you manage it.

That way some of them could pick the five best guys and send them out and some of them can share it equally and just let them – I mean, there was talk of a referendum so they have their own referendum as to how to divvy their regional shares.

DR. SCHNIER: I think a rational fallback plan would be just straight up catch shares, go figure out; go figure it out; I mean, here is your share. If you don't want to be part of this – we provide a structure that would be a good alternative and provide a middle ground for communities; but if you don't want it, your fallback is here is your catch share.

DR. MURRAY: I guess one thing we haven't thought about, I just remembered, is does the council or NMFS have the resources to create these region-specific quotas? I forget which acronym we're using for allowable catch right now, but there spread over this entire fishery generally, right, so I imagine it's rather resource intensive to come up with a biologically meaningful regional sub-ACL. I think what we were talking about would kind of depend on something like that, which is expensive, I guess.

MS. QUIGLEY: Yes, it's all considered one stock in the South Atlantic and that is how it has been set up; so for people to come in and say, well, actually, those aren't harvested in the Florida Keys, but then because of global warming and things; oops, all of a sudden people are harvesting things in North Carolina that they harvested before, and so things move around and so people have been hesitant to assign species to specific regions or biologically.

DR. MURRAY: Yes, from an efficiency point of view it shouldn't matter as long as it's tradable, but from the initial allocation that's going to be really important for anybody to buy into this. They're going to all want to think that they're regional – to accept it they need to be convinced that their regional share initially is constructed fairly and sensibly.

DR. SCHNIER: Isn't the regulatory framework right now structured as a dockside reporting system with the logbook in which case this would really beat the –

DR. MURRAY: To do it historically.

DR. SCHNIER: Yes. I'll say what you said, which it tells where they landed and not where they caught it, which is true. I think with the sector groups it would be reporting on this port has that allocation; so those boats coming out of that area, we're not necessarily going to think about where they were catching it but that's their quantity that they have attached to them; unless there is a lot of spatial mobility, which it sounds by your statement, that there can be some sizable fishing mobility, which is another issue in and of itself.

MS. QUIGLEY: Well, there is spatial mobility among fishermen for certain species. For example, golden tilefish, if you wanted to participate in the golden tilefish fishery before the season runs out, then people from the Carolinas need to travel down to Florida, and that's what they've been doing.

And then for some species, if you want to participate in this other fishery but there are not that many vessels left in the fishery, some people choose to serve as crew on some vessels up north. They'll come up from Florida and serve on vessels up north. What I'm seeing just from anecdotal information from fishermen is people are starting to move around more than they did in the past. They starting to move around more in response to the regulations and having to find new species, having to search for where these species are.

DR. SCHNIER: Where is the data on all this? I mean, you've got an amazing amount of knowledge and/or is this actually coming from data you've collected?

MS. QUIGLEY: On golden tilefish there is actually data, and then some of the other information is from individuals. A lot of the data analysis that gets done is all biological; and so when we do logbook data, it's always for a specific amendment and looking at specific actions. We haven't actually had time to go and do what we need to do, which is what is the status quo; what does the fishery look like right now; who are these people; what fisheries do they participate; where are they moving to and from? That's kind of what we need to do.

There is someone from Environmental Defense doing a description of the snapper grouper fishery; what does it actually look like; who are these people; what are they doing? We have been meaning to do that, and that's the first step I think in catch shares. First, what have we got; what does the environment even look like?

The data request just came through, so now we have the data, but we have no time to analyze it, so a lot of what I'm talking about is conversations that we've had over five years; things we've

been hearing from fishermen over five years. As far as the data, yes, we do know which ports bring in the most and what species they are bringing.

We kind of know, but then recently I asked for that data and they said we have to put in a special data request. People are backed up for a year at the science center, so just getting that simple, simple data is extremely difficult. So, yes, what we need to do is come up with a description of what the fishery looks like right now, what ports are landing what, how much; who are the people participating; how many vessels per port; and what other fisheries are they participating in; are they in mackerel, are they in shark; what are they doing?

DR. SCHNIER: First of all, I want to point out I wasn't saying that you didn't have anything to back it up. I was think there was fascinating pieces of information. I think really what you're dealing with here is you're dealing with assemblages. We need to be taking this whole management policy one step backwards and be thinking of what is the individual decision that they're using that then forms into these assemblages because that's where everything is coming from.

I mean, that's what you're pointing out, which is that you've got people moving up and down the coast and bouncing in and out of species. Well, I think until we understand the dynamics of those individuals and how they're doing that, we're kind of throwing darts at a board and trying to figure out what is happening on this board.

MS. QUIGLEY: Yes, and Kari and I and Gregg were talking about that just the other day is who are these people who are catching greater amberjack. Okay, we've got a stock assessment coming up. Who are these people catching these different species and what else do they catch? We need to get a good handle on that. Some people we know.

Some people we know do Spanish mackerel; then they do golden tilefish in September. These are hook and liners down in Ben Hartig's neck of the woods down in Florida. We know what it is that his group of guys does. Then we know there are people up in North Carolina who do black sea bass year round.

Then we know that there are people up in Little River who go out for anything, all snapper grouper species. Then we know that there are people like Jack Cox who go out for black sea bass and some other species. We know that there are pockets, but there are people who never show up at meetings, who we never speak to, who we don't know actually what it is that they do, so getting a handle on that I think is the first step in trying to figure out what assemblages do they fish for and out of what port.

There are probably 20 groups, I would guess like 20 to 25 different groups of fishermen that fish for similar species. I think we're looking at trying to characterize who are these people and what they do at least from the data if we don't go out and touch base with them. Maybe that's just too difficult to do, but we need to at least describe the fishery itself.

The least we can do is we can look at each and every one of these species and say how many people are catching how much and we can show a histogram of, okay, here we're got all these

people and then we try to link it to what else are they fishing for, what else are they catching? I think maybe that's the first step. Maybe that's a good recommendation to the SSC is your step is to find out what this fishery looks like.

DR. SCHNIER: I'm going to put in a self-plug. Sherry and I and Chuck and Rob Hicks, we actually wrote a paper looking at how people switch within a season across the species in a dynamic context in looking at these things. We did a small number of fishermen. The data set that we had was not the greatest thing on the planet. It didn't have a lot of good resolution of things that we wanted, but that's the type of thing you kind of want here is you want to be able to look at how people are bouncing between things, because that's really going to define how effective this is would be my hunch. I'm not saying I'm going to do it; I'm just saying somebody should do it.

MS. QUIGLEY: Yes, I think that's an excellent suggestion. What we've got on the table right now is just a description of the snapper grouper fishery. A second suggestion could be how are people bouncing between fisheries; and then the third one is to go out and actually reach out to people and see if this is accurate or what it is that we're missing.

We've found that with the wreckfish fishery, golden tilefish and golden crab is that when we go and try to talk to all the participants of these small fisheries, we get the whole story. I don't know if we're getting the whole story, but we're getting a story and all the details. Kari and I and Gregg were talking about how perhaps a couple of species a year we could go and call every single person that catches those species or has historically and find out why did you participate in this fishery, what else do you fish for, what is the story behind these species, what is the market behind this species, and really start doing that.

I think that will take a decade or more to really do all the species but I think it's a way to start. In lieu of that, though – because we won't have all of that information – I think just doing a quantitative look at the trip ticket and logbook information is doable. I think that's doable and we could maybe look into hiring someone to do that or do it ourselves if amendments ever slow down.

DR. LARKIN: Why wouldn't the landings' data – why couldn't you get that from the landings' data directly without having to go back to them?

MS. QUIGLEY: I think you could, but there are certain things like, for example, we looked at the wreckfish data, we looked at the golden crab data, and we looked at the golden tilefish data, and that didn't even tell a fourth of the story that there was to tell about the fishery and what keeps people in the fishery.

It didn't tell why people participated in the fishery and what would make them leave the fishery. All it told was a snapshot for a five-year period, this is what people actually did, but we didn't know why and why it might change in the future. For example, for the wreckfish fishery, we had people participating in 1991, 1992 and 1993 and all of a sudden everything dropped off and now we have two participants when at one point there were 89 participants.

The data told us what was happening but it didn't tell us why. Come to find out the reason why people aren't participating is because it's a really, really hard fishery, and it's way, way out there, and people had better economic opportunities that allow them to stay closer to shore than going way, way – 40 miles offshore to catch these fish in these very dangerous – you know, basically going up against the Gulf Stream.

It didn't tell the whole story so I think you can start out with the data, but then you've really got to talk to people to get the story of why they're participating. For golden tilefish catches go up and down, but we didn't really know why and why people got in and out. Well, it was because of the shark fishery. The shark fishery was more profitable so people go into the shark fishery, but then the shark fishery fell off and they went back into golden tilefish.

DR. LARKIN: Okay, so this is probably going to sound really dumb, I would think that the data could tell you that. I mean, if you know they're fishing – from an economic perspective, we know if they're fishing Species B instead of Species A, that we might be able to – that might tell us why they've – does that make any sense at all? I mean, why doesn't that tell you what you need to know?

MS. QUIGLEY: Well, it should, but the problem is you've got to look at the shrimp permits, compare them to the snapper grouper permits, compare them to the shark permits – the shark is not managed by the South Atlantic Council – and you've got to somehow match up those vessels and those permits.

We put in a data request to just match up the permits without the landings and that took about nine months to get, just get the permits, and we just received it. Now, to match it up with landings would be an enormous undertaking. This is a big project. It seems like it should be something very easy to do, but because of the way they've set up the data base is none of these data bases are related.

You've got to find some common thing between them, vessel number, typically, and you match up the vessel number and get that to somehow merge with each other. Sometimes it's possible and sometimes it isn't, but I don't even know who to work with in the shark fishery to get that. It just comes down to practicality and trying to actually do it just takes a very, very, very long time.

DR. LARKIN: But I think that's the key point to get across. I get that and we did that for shark. I remember we had to go with 34 different permits and say what collectively do these guys fish for. I don't know who hears that message, but it's not that the data can't tell you it's there. The data is in no way, shape or form – we don't track individuals, we don't track fishing effort. We track everything by permits which lead us back to managing fishery by fishery and not tracking what their motivation is.

MS. QUIGLEY: Yes, the first part of that data has been requested. We do have it so we've got the permits. Now we just have to link it to the landings. This is across fisheries. We're talking about all fisheries; not shark but everything else, including Gulf, so we have that; so who participates in mackerel and the person who stays in snapper grouper.

We know the number of permits but we don't know what they're catching, like what level they're at, so, yes, that's the next step is getting that data request started and for the science center to do that. To link up all the vessel numbers is the way to track it. Yes, that needs to happen, and we need to request the science center to do that.

They do that for us for a specific fisheries like the snapper grouper fishery, link up the permit to the vessel to the landings' data, but now we need to do it across fisheries. Yes, I think that would be first step and then describe that data. Just taking notes, I've got something called assumptions about the fishery; topics for discussion, so different types of catch share programs that might apply here. And then maybe we need a topic called things needed; you know, a description of fishery participation and their portfolio for fishery participation or something like that. How would you describe that; what is an easy to describe it?

DR. MURRAY: I got a little lost in the most recent conversation about how exactly this information would inform a management decision like designing a share system or quota system or whatever. I don't deny it's of intellectual interest.

MS. QUIGLEY: I guess my understanding was if you're going to do something like sectors, as in sector allocation like in New England; if you're going to assign quota to different groups of people, then you need to know who your groups are. To find out who the groups are, this seems to be something you'd want.

Regardless of that, even if you just did a catch share program and you wanted to see what the impacts were going to be, I would think you would want at least a basic understanding of fishermen and what other fisheries they participate in. I think that was the point. If it could take two years, then you might want to say forget it let's –

DR. MURRAY: Well, it seems like the first kind of data you listed should be a lot easier to get; what are sensible groupings of these places; is it by port, is it three ports that go together; is it ten boats at one port and the other five boats at that port; should it be separated? That's something that presumably is more available just from the permit data, right?

MS. QUIGLEY: Sometimes it's just available from talking to fishermen. For example, there is a port in South Carolina with two different fish houses. People seem to organize themselves by fish houses. In South Carolina we've got one town that has two different fish houses with completely different views about how things should be run.

One fish house has small vessels. Our understanding is that it's small vessels that go out for whatever they can catch. Then there is the other fish house across the street that goes out for specific things, and they have a little bit larger vessels. Asking those two fish houses to work together is something they're not willing to do.

Even though they both come into the same port, they just deliver to different fish houses, and so the philosophies are completely different. One opposes catch shares and one is for catch shares. But, you know, the other solution is you just do an IFQ and then people can solidify themselves however they want.

DR. MURRAY: Right, but I guess I now agree that we should get the description of the fishery participants because that at least gives you an idea of what the levels of aggregation are likely to be; and then, of course, yes, the best way to get buy-in is to have themselves aggregate with a suggestion that you guys don't like each other so why don't you do your thing over here and you guys do your thing here?

MS. QUIGLEY: Yes, and there are also people within the same port where some deliver to restaurants individually and cart their fish around in a pickup truck, a refrigerated truck, and then there are other people who just deliver to the dealer.

I'm not sure that just assigning fish to a port – yes, it would keep the quota in the same place; so if there are strong community concerns, I think that is the way to go, but it causes a lot of – it might cause a lot of social unrest because those people would be forced to work together and they don't want to.

DR. CROSSON: You just brought out the question of what happens to people when they leave their fisheries, so it might useful to have information – and I'm trying to think about how you conceptualize this, but a description of former participants in a fishery over the past decade and what they're fishing for now would give you some idea of where people might go. Again, it would have to be narrowed down because it's a pretty broad question, but it would be useful information for guessing at what might be some of the impact of the stuff that people leave the fishery voluntarily or not.

MS. QUIGLEY: Are there any reactions to the specific options paper; do you guys think that the catch shares option papers incorporate all the basic design characteristics that you would consider under a catch share program?

DR. WHITEHEAD: That's a long list; I can't think of anything else. Can I say one more thing about collecting the data? It seems like things move very slowly, so time spent waiting for data might be time spent waiting, anyway, for these things to drag along, so I don't think that should be considered a barrier up front.

MS. QUIGLEY: I don't think so; I think it's something that they would like to provide. It's just they're so bogged down with other data requests from the Gulf and Caribbean and from here, and it's just so much. Amendments are moving so quickly, changes are happening really quickly, yet the data to analyze everything that is happening is very slow; but, yes, we did put in a data request over a year ago and we're getting it now.

Starting on this project, it's going to be useful whether we do catch shares or not, and so just doing it I think is an important thing to do; or perhaps ask that a data base be created that's updated every year. I mean, that's what we really want, and that's what we wanted from the beginning is some sort of data base to have all this linked that can be updated every year; so whenever you need it, you can just draw on it. We've been asking for that for years and it just hasn't happened yet.

DR. CROSSON: This is the reason I'm going to be at the SEDAR hopefully for black sea bass in April is to try and involve – we figure I guess if you get into the process earlier – and this is one of the things Jim Waters wanted to get a move on before he retired and he suggested to me is that we start sending people to the SEDAR process and try and give some background to a fishery that is going on at the same time that the stock assessment is being done, and that's probably the only way you can get ahead of the game.

MS. QUIGLEY: That is one thing we have talked about, too, is every time SEDAR goes and does a stock assessment and has one of their data workshop with the fishermen, what you do is you do some work beforehand – I don't know, Kari, if you want to chime in now, but what I was thinking and what Gregg was thinking and Kari was thinking, what we were talking about yesterday is do some work beforehand to get really information about the fishery and then bring it to the data workshop for SEDAR to have and incorporate into the stock assessment.

In that way you incorporate new information every time a new stock assessment is done and that informs the fishery management process. Anyway, we were going to talk about it more tomorrow. Okay, what do we want to do with catch shares? Do you guys have ideas about what – I mean, you have contributed suggestions, so that's really great. Is there eventually a report you would like to contribute to or write or would you like to track the progress of what we do and provide suggestions along the way or how would you like to be involved in the catch share discussion?

DR. SCHNIER: I want to be involved in a way that I would like to know why it is that the council prioritizes different types of allocation schemes if they go down the catch share road versus others just so that we can get in our heads what the priorities are. I think how you decide to do the allocation and what percentages here, there or how it's decided is going to help inform us quite a bit with a lot of the questions that we've had about where is your breakdown; you know, that thing up there that has this is what we want to do type statement. I think that would be informative and knowing why something was not supported versus something that was. Maybe you guys aren't but I'm new to this program.

DR. WHITEHEAD: Could you add non-conflicting to goals in your second sentence there. It might sound a little harsh; it would be a less harsh way of putting it. It sounds like a criticism of the council that I don't want to make. The non-conflicting; it sounds like a demand and I don't want to make demands. I suggested the non-conflicting; just that one word, I'm trying to think of something less demanding.

MS. QUIGLEY: Well, we could say non-conflicting and measurable goals and objectives would be helpful in advising.

DR. SCHNIER: Yes, that would be better, because even the word non-conflicting makes it sound like we're not really that informed about what you want when we're making these decisions. I don't want to be that way.

MS. QUIGLEY: Okay, so non-conflicting and measurable goals and objectives would help in –

DR. SCHNIER: Different designs of catch share programs.

MS. QUIGLEY: Streamlines goals and objectives?

DR. SCHNIER: Another way of framing this is that instead of even being kept abreast of catch shares systems is give us information about how you want to prioritize those goals and we can help give you advice on what would be the best portfolio of a catch share program, and so we could respond to an objective that they gave us instead of us making recommendations that are sort of shots in the dark about what we think is going to be what they want when it may not actually be what they want. I mean, we all know what assuming does, right.

DR. LARKIN: That would also help in the long-term evaluation of any program because ideally any program that is put into place is for the purpose of improving a certain subset of very specific measures to that fishery.

DR. SCHNIER: And I don't think it would be our objective to have economic efficiency try to dominate anything of this nature. It's just a matter of tell us what you'd like and we'll provide the best advice we can for that.

DR. CROSSON: Okay, we're back on the record again now. Kate and I were talking briefly during the break, and my suggestion was to aid the council in this process that we choose a few objectives, somewhere between three and five, something that is manageable for council, and at least get them to put them in some sort of ordinal list to whatever group – again, if it's us, we go back and look at the stuff for different catch share proposals.

If we're given a choice between two different values – and they have to be something that we can quantify – if we're given a choice between different values, we know which ones to prioritize, and maybe that would ease the process a bit. I guess what we'd like the group to do right now is to try to spit out some of these key variables for any kind of program under Amendment 21.

DR. SCHNIER: You're talking about net profits. I think you'd probably put that under the guidance of efficiency and the second one being equity. If I were thinking of three, I would think of efficiency, equity and community preservation would probably be the three big things that seemed to always come up, right, in any of these allocation schemes.

DR. WHITEHEAD: But how is community different from equity?

DR. SCHNIER: There could be equity concerns within fishermen and then there could be the equity concerns of a regional impact, so I'd put them in sort of a two-tiered equity.

DR. MURRAY: And is community different than employment?

DR. SCHNIER: No, I would think that community and employment are probably – to define it would be community survivability like the existence of a fishing community.

DR. MacLAUCHLIN: Okay, I think there is more to the community and there are some money benefits that come with community stability; especially in the Keys, they have a very distinct culture and I think that –

DR. MURRAY: But I guess my question was more does preserving employment preserve the community or is there potentially something else that we should be worried about in terms of how policies impact.

DR. CROSSON: Well, Kari, is there a way to quantify community that we could steer the council towards? I think it was Gregg that brought up this question of how do you go back and look a few years later at the success of a program; and so preserving community sounds nice, but I don't know how to quantify that.

DR. MacLAUCHLIN: This is something that we talked a lot about at NMFS and then we had communities' workshop in January where we talked about communities and catch share programs. Really, if the presence of fishing is important to a community, then that I think we could measure in different ways.

If it's because they supply the fish house which employs people and we go from there, or they're consumers that eat at restaurants or it's the tourism business so they're supplying local restaurants and tourists – like however the impacts of sustaining that community I think are bigger than just keeping jobs in there. There also are some things that have been talked about with community quotas and everything, using them as economic development tools for a community in that you would have a permit bank – and these are kind of long-term things that would have to be thought out – that generate money by leasing out to some of their new people and things like that. It really just depends on what your objectives that have to do with like a community or a working waterfront would be.

DR. SCHNIER: If I could add a distinction here; I'm very concerned about using the term community when the last part you just referenced is actually community rent seeking, which is trying to get their slice of the pie. I think that's what the CDQ really is. The CDQ is a way of getting their slice of the pie, and so you put it under the guise of you need to preserve community integrity, we need to need to have fishing communities, we need to preserve the culture.

I really would think we need to differentiate those as separate entities themselves, because the rent-seeking activity is no different than just lobbyists trying to get their actions sort of respected or their desires respected, I should say. I think we need to differentiate between those two.

DR. CROSSON: Let me ask another question. Is maintaining historical pattern of landings for distribution of landings – I mean, all the things you talk about with community, keeping things intact and local supply of seafood and all these other things, and it's just maintaining the way the distribution is right now; does that get towards that in a way that might be more measurable?

DR. MacLAUCHLIN: I think so. Yes, if that is something that is important and I think it's something definitely that the fishermen bring up when they are speaking, if they're afraid it's going to change everything, you could maybe anchor quota to a certain place. We think that's

one of the things that they bring up a lot; it's like it's going to change everything and we're not going to have any fishing, no more fishermen in the Keys.

DR. SCHNIER: We're making this as one of the five, right? I mean, change is good and so I'm just thinking that –

DR. MURRAY: And inevitable.

DR. SCHNIER: Yes, inevitable.

DR. MURRAY: Particularly if the stocks are no longer what they once were, then those flows can't be maintained.

DR. CROSSON: Okay, I'm fine with variable; I like it because it's at least somewhat quantifiable. Somebody brought up equity; equity, I don't know what that means. There is an initial allocation question, all right, and that to me is separate from what the program is going to look like five or ten years down the road. To me the initial allocation; it's important to the fishermen, but once that is past, I don't know what its impact is on the fleet.

DR. SCHNIER: My reference equity; I was referencing the grandfathering of quotas.

DR. MURRAY: Yes, equity really should only play in role that initial allocation.

DR. SCHNIER: Yes, initial allocation rules and do they care about the fact that some people are going to be left worse off than –

DR. MURRAY: I mean, that's it from what I was hearing earlier about fishermen's concerns; I think that feeling like they're going to get – they're the one who is going to get the shaft is a big issue and that really is just about how much they get to start out with. I think they clearly recognize the tradability, that these things can change and they can either buy more or sell out. It's just are they going to get a fair share to start with. You know, how you define fair is up to the council, hopefully, and not us.

DR. LARKIN: There is some talk in the Gulf about the use and development of – I'm probably going to get this wrong – fishery indicators, comprehensive measures that Mike Jepson is working on with somebody in the northeast where they're trying to – social indicators. Do those factor in economics and landings and are those something that we're looking at here?

MS. QUIGLEY: We haven't started looking at them yet, but that is something that could be used to identify important communities. In order to sustain historical distribution in sustained communities, first you have to identify what the important communities and use indicators to identify those. One indicator can be landings.

Another indicator could be diversity of employment. If you have very narrow employment like everybody looks in the fishery industry, that's an indicator it's an important fishing community. You use indicators to indicate which communities we could label as fishing communities, so

which fisheries are dependent on fishing. That's one way to do it and you use different indicators. Mike Jepson was working something off of that, but I don't know exactly what.

DR. MacLAUCHLIN: At the communities workshop we had one session that was on measuring like metrics – what was it called – like measuring and evaluating community objectives, something like that. Mike was the facilitator and we used some of social indicators that they had been working on in the northeast and Mike, and then some other indices that they have where they are developing these quantitative ways to see how a certain community or a port is dependent on a certain species.

(Remark made off the record.)

DR. MacLAUCHLIN: No, they're quantitative. That was what we were trying to focus on with not just descriptions and qualitative information but these quantitative measurements that incorporate all kinds of data from the system and stuff like that. There are some things that are kind of in the works for evaluating changes at a community level and things like that.

MS. QUIGLEY: Out in the Pacific what we did was we identified what are the most dependent communities on fishing, and we used indicators to guide us to which ones we should label as dependent. We used all sorts of different things; landings, revenues, number of vessels in the port, number of permits with mailing addresses in the port. We did it by species as well.

So you found out which ones were most dependent and then you identified which fishing communities are most vulnerable, and that would be the communities that don't have much other employment, that have lower education, things like that. Those are the most vulnerable and then you put those two together to identify communities that the council might want to consider protecting.

Just before I forget, I took out the word "equity" because I think it's going to cause problems. If you think it's concerns about equity in initial allocation, I suggest we say initial allocation that – and then continue that sentence in some way – that grandfathers in status quo fishermen or initial allocation that offers opportunity for everyone or initial allocation that – something; identify what you mean by equity. They're scared of that word "equity".

(Remark made off the record.)

MS. QUIGLEY: Right, so basically what I think would be most helpful would be say initial allocation of privileges that – and you say some goal, what goal it actually meets – that provides everyone an opportunity, that grandfathers everyone in or that is the least amount of change from status quo or –

(Remark made off the record.)

DR. CROSSON: Yes, we're asking someone else to rank this.

MS. QUIGLEY: We're giving examples of things. I took out "for example". Oh, I said, "For example, choosing three to five objectives for catch shares could provide the direction needed to develop an appropriate catch share program," and these are examples of things – just examples of what you would want, and what you want is something measurable that doesn't involve vague terms that could be misunderstood.

DR. SCHNIER: I don't follow A before we get to C. I was going to say put in maximizing –

MS. QUIGLEY: Well, you can't maximize no profits because you've got to first take care of the biological and you've got all these other restrictions. In my mind, you could put down that maximize profits, but that's not what they're going to be able to do.

DR. SCHNIER: How about maximize bio-economic appeal?

MS. QUIGLEY: Yes, you can say that.

DR. SCHNIER: Because that efficient quota system will give you maximum bio-economic appeal.

MS. QUIGLEY: Right, but in order to measure if that's happening, you need to do a bio-economic model, and for a multispecies fishery that's not going to happen. See, I was just thinking what I think the council would like to see is that there just are some profits occurring, they there are net profits in the aggregate fishery. I think they would be happy to see that.

Now, that's not good enough for economists. Economists want to see maximization of net profits under certain conditions, so we could say that; but in order to measure that to see if it's being maximized, we need to do an optimization problem and figure out if it's actually being maximized. I was just saying bring about an environment where profits are occurring for some people. I mean, I'm trying to think of a realistic goal.

DR. SCHNIER: I actually like the maximum bio-economic appeal from the perspective that Arneson argued that you don't actually need managers to manage the population. All you actually need is a regulator framework that its objective is to maximize the value of quota. If the objective is to maximize the value of quota, then you will get maximum bio-economic appeal.

And so even though the biology may not be known, it's possible to attain maximum bio-economic appeal via maximizing the value of the fishery is the argument he makes. I like that because what is great about A is that it says it's economic is really your objective or not. I mean, is economic efficiency what you really care about or do you want to care about some of these other things more so than the other parts.

MS. QUIGLEY: I think it would be best to not use the word "bio-economic" because I'm not sure people know what that means. I think if we said maybe maximize economic profits given biological constraints would be more understandable for them.

DR. SCHNIER: I'm happy with that.

DR. MURRAY: Since the catch limits are set separately, what we're asking for a priority over is really how much do you care about cost savings? I mean, it's a subset of this, but I don't know if we think it's important to – I guess we're asking the council to prioritize these, right, and we might want to be clear that what we really mean is we're going to take the catch limits as given, and we can tell you – depending on how important cost minimization is, we can give you some advice on how to achieve that.

MS. QUIGLEY: Yes, so I'll put in parentheses ACLs so we know that we're talking about just taking those as given and not changing those in any way. So now we might want to put something in about – I don't know; okay. So what would be an example of, say, C, initial allocation of privileges, and I know that provide equality?

I know that's kind of the initial – what you'd like to put down is that initial allocation privileges – distribution of initial allocation are privileges that provide equality. I think maybe we should say an example of something that grandfather in current participants or – I don't know; what do people think?

DR. CROSSON: I think there is some meat to that, because again I'm looking at these and trying to find areas of tension between these different variables, and there is definitely going to be a tension between that and B and A. If it's something that we think that the council is going to value, then I have no problem in using that as a variable, because again the goal is to try and get them to rank these things that we can come back later and figure what program does best meet these objectives.

DR. WHITEHEAD: Do we care very much about the initial allocation or do we just want it to pass a vote?

DR. SCHNIER: John, your button was not on, but I think the economists were not really caring about the initial allocation, but the question is whether or not we should be when we're thinking about the share scheme. I mean, if I were to try to construct an ideal catch share scheme, I'd really care less about that; but if the management body wants us to care about it, then it has to be part of our objective, would be my take on the whole thing.

DR. WHITEHEAD: The management body did ask us to care about it.

DR. MURRAY: But the question is how to phrase it to ask them to – so we want them to tell us how important it is.

DR. WHITEHEAD: I like stopping at three.

DR. LARKIN: That's not suggesting that we want them to do that, right?

MS. QUIGLEY: Right, these are simply examples of things that are measurable. Well, the way to get to that is a tiering program – the way to do that is a tiering program, a voluntary program with a common pool or – I mean, there are ways to actually do that. Provide opportunities, though, could just mean that, well, they can buy in. I mean, the council could decide that is an

opportunity or the council could decide that's not an opportunity and therefore we need to have a new entrant program. It's still vague, but, no, we're not suggesting that they do that. We're saying this could actually be measurable.

DR. SCHNIER: I think the point here, Sherry, is that we are all leaning towards A and making A the objective. The question is how much do they want us to be caring about B and C when we're deciding on decisions that look at A. Maybe we should put A at C and C at A so that it doesn't look like we're biasing it in a way or in the middle or something. I mean, it's more to figure out how much should we be thinking about curbing our homo-economicus person a bit here.

MS. QUIGLEY: This is a lot of direction. If they were to actually use any of these, they all sound good but they might have other objectives. These are all measurable things, and you could actually design a catch share that would do all of these. Another thing we could say, which conflicts with C, is provide opportunities for people to exempt themselves.

I don't know that we want to say that, but that is an example of something is do an initial allocation that exempts people from having to participate. That's another option. I mean, there are lots of different options, but, yes, three is enough to give an example of something that's measurable and seems to meet their goals from our surface understanding of the problem.

DR. CROSSON: I'm trying to think of all of the different objections that I've heard from fishermen to catch shares and LAPs and ITQs and whether they are reflected in this list. I'm having a problem thinking of any. The big accusations I hear, well, it's going to lead to corporate fishing, which to me fits under B.

It's all the catch share and all of the quota is going to leave the community and nobody is going to be left that can harvest the resource the way they traditionally have. It's going to lead to too few fishermen and it's going to cut employment, which is A; and it's not going to allow new entrants into the fishery, and that is reflected in C. Again, I'm just trying to think of anything else that really you hear a lot of. You guys have been to the public hearings. I heard a number of them in North Carolina.

MS. QUIGLEY: Just a couple of things that pop into my head is people say we want trip limits. Well, that's not maximizing profits. People don't really care as much about maximizing net profits. Everyone wants to be able to survive, but they don't care about maximizing net profits. They don't care about economic efficiency. They see no reason to even discuss economic efficiency.

Well, you need to explain that why would this be beneficial to the nation. Well, it's because people could be doing something else in order to create profits, and so people are actually – well, people don't see any value in that. Just on the surface, people don't seem to see any value in that. I'm glad we don't have economic efficiency because I don't think people see that as valuable.

DR. SCHNIER: The other thing I could think of as a potential objection here is that – and this is what we've heard. I hear that a lot in New England – and it's more of preserving the fisherman lifestyle, which is really nothing that is up there in any way. It's not really on historical distribution of landings, necessarily. It's more of allowing families who have historically been fishermen to maintain that identity.

I think there is a fair amount of New England fishermen that will be opposed to any regulatory change because of that; that it's changing their life. They want the race, they want the game, they want that lifestyle. I don't know if management cares about that or not. Hopefully, they would keep that on the bottom, but it's important.

MS. QUIGLEY: Yes, I agree; I mean that is what a lot of people want and they want to maintain a system where hard work gets you ahead instead of money gets you ahead or how much you fished in the past gets you ahead. Instead it's opportunity and hard work that gets you ahead; you know, people really like that system. But, you know, with the regulations, that might not be possible, anyway, with the closures that we're having. A lot of it is where you live is the disadvantage.

DR. LARKIN: The benefit of putting that up there is just to define it in discussion of what we're going to talk about and what we can't, so I think there is value in adding that. That's sort of the status quo; is that a viable option in the future? Some would argue no way; I mean we just don't have the luxury of that anymore the way stocks are.

So, yes, we recognize that as important and that may be of value to just state that up front that maybe the underlying curve is, yes, we'd love to go back 20 years. I mean that's sort of the Holy Grail of maybe people like to see the way the fishery is, but maybe nowadays we don't have the luxury of maintaining that D, and so where do we go from here?

DR. CROSSON: Again, it seems so hard to quantify that. I know what that means but it's impossible under the current system. As long as you have a total allowable catch of some sort, you can't – I mean given the fact that you have a certain – unless you have radically reduced the number permits from 800 down to whatever, 30 or 40 or something ridiculously low, you're not going to be able to allow fishermen to go out there and have those days where they just pull in thousands and thousands of pounds and make it rich for the rest of the year. It's just not feasible given the TACs that we have.

DR. SCHNIER: I was talking about lifestyle and not necessarily outcome. And so the objective here, I think this is actually a very easy one to obtain if that's the objective, and that's just do nothing. If they want to keep playing the game and they want to keep doing open access and keep competing and keep pushing things the way it is and having less, that is the status quo. I mean if you want that objective and that's what you want, status quo, maintaining current regulations gives you maintaining the current lifestyle.

DR. MURRAY: And maybe some technological restrictions as well.

DR. SCHNIER: It's still complicated.

DR. MURRAY: If you really want to maintain the lifestyle, then ultimately you can't allow fishing vessels to become more and more efficient.

DR. SCHNIER: That's true.

DR. CROSSON: But if the goal is to maintain current regulations, then the obvious solution is just to cut this whole program short and go back to using other alternative measures for controlling the fishery.

DR. SCHNIER: Yes, but let's not lose sight of why we're doing this. We're doing this because we would like the management council to say how they would like to have this stuff organized in a hierarchical way, right, and sort of meeting the objectives of the fishery. My hunch would be it wouldn't be that high up the food chain, but there might be some weight assigned to maintaining the lifestyle as a fisherman and keeping that entire thing that they enjoy.

MS. QUIGLEY: Well, sector allocation might be – I mean, we could say maintain current regulations and lifestyle to the extent possible, and that would be perhaps sector, port-by-port allocations.

DR. SCHNIER: It's a liberty issue, basically. They're saying it's a violation of civil liberties, that you need to preserve civil liberties and that could be an objective of a policy.

DR. CROSSON: So is the goal for the SSC to sign off on this and then I go before the council and then try to get them to rank these or do I try and get them to allocate percentages to this, and then they send it back down to the subcommittee and we start hammering away a little bit more on the document; what is the process here?

MS. QUIGLEY: I don't think you try to get the council to do anything. You present them with what you would need in order to help them to design a catch share program, and it's up to them whether they want to take your recommendations or not. One recommendation is provide an overview of the fishery. The second recommendation is come up with goals and objectives that are ranked, they're non-conflicting, they're measurable. You present that to the council perhaps in June.

You present this to the SSC in April, get the SSCs buy-off, then you present it to the council – say I would like to present this to the council, present it to the council in June and the council can do with it what they wish. It will be up them, so you don't try to get them to rank it or anything. You just say here is what we think and do what you like with it.

DR. CROSSON: So they're not non-conflicting goals and objectives; they are actually deliberately conflicting goals and objectives because you want the council to at least make some initial steps to sort through it.

MS. QUIGLEY: Okay, so do we want to say non-conflicting; because the first thing they're going to say when they see these examples is these are conflicting and we're going to have conflicting things because the MSA is conflicting.

DR. MURRAY: We wouldn't need them to be prioritized if they were non-conflicting, so we shouldn't say both of those.

DR. WHITEHEAD: Prioritize would work by itself, wouldn't it?

DR. MURRAY: Yes.

MS. QUIGLEY: Okay, so if you were going to design a catch program, you would want to know what the environment looks like and you would want to know what the goals and objectives of the program were. What else would you want to know; anything else; any other kind of information you would want to know?

Would you want to have access looking at the data and running different initial allocation scenarios? I mean, maybe we can make that available, anyway, but we couldn't for the SSC. They couldn't see confidential data. Are there other things that you might want in order to develop a catch share type program or is this all you need? Would you want meetings of fishermen?

DR. SCHNIER: Ultimately if it's going to be voted on, then we might want to know some more about the objectives of those who are going to be voting. I don't know how to most efficiently transfer that, but I mean you suggested whether data or meeting with them or something that is similar to those two. I don't know what it would be but some kind of information on what the preferences are of those who are voting.

MS. QUIGLEY: You know, another idea is we've talked about getting the LAP Exploratory Workgroup together again. They haven't met in two years. We've talked about getting them together again just to review any kind of amendment that comes out or ideas that we have or something like that.

One idea would be to have a joint LAP Exploratory Workgroup/SEP meeting. I don't know if you need to put that as a recommendation. I'm just throwing it out as a possibility as something that might be helpful.

DR. WHITEHEAD: That's the snapper grouper guys?

DR. CROSSON: I don't know that it has to be the exact – well, I guess that group has the most experience with this right now. Two members of the group are now council members, right?

MS. QUIGLEY: Yes, one member of the group, Charlie Phillips – oh, and Ben Hartig, right, there are two members, so they wouldn't be able to participate, but it's easier than creating a new group. It is just a group that has been educated on the topic, that have been thinking about it for a long time. It's from every state, every gear group. Anyway, not a recommendation necessarily, but that might be just an idea for the future just to try to think about.

Are there certain types of models do you think will be helpful and the council going this process, the catch share process? I mean, one thing that Andy Strelcheck is putting together, which is

basically what I've put together in the past, is looking at the permits attached to the logbook data and running different initial allocation scenarios, and fishermen can get online, go to the website, punch in their historical catches for a particular species and see what their initial allocation would be. That's one tool that we thought would be a good outreach tool and that we would need in order to evaluate this. Now, are there other models or analyses that we need to get started on that would help analyze.

DR. SCHNIER: I think what you've defined is more of information treatment so they become educated about the process. I think as far as the impacts of the program itself and projected impacts, I think there needs to be some sort of production model going on in sort of a dual-cost frontier model like Quinn Weninger and Dale Spires and those guys have done.

And then from there looking at where the economic gains would come from catch share programs, because those are all based on sort of the efficiency gains and what are the benefits as to the overall industry if they transition. Latent in that is the assumption of contraction. Is that what you're referring to or not what you're referring to when you say other studies that need to be done to look at the impacts of this?

MS. QUIGLEY: Well, what I'm thinking of is when this comes up to the SSC – when Amendment 21 is fully analyzed, it comes up to the SSC; what do you expect to see? There is going to be lots of qualitative analyses. There is going to be running of initial allocation scenarios and giving how many people are left, how many people would participate in the fishery, what fisheries that they're participating in given the caps that we have, and so we're going to be able to give that information, but beyond that there is not going to be much quantitative analysis.

Yes, we could get Weninger to come in, if we could find the money, and do a type of analysis that he did in the Gulf and for the Pacific, and what that basically showed in both cases – not in detail but basically how much – well, I won't say what it showed but we worked with him a little bit.

Environmental Defense hired Redstone Strategies, a consulting group out of Colorado, to do an analysis to come up with what the benefits of catch shares would be, and what they came up with is that the benefits of catch shares in the South Atlantic is going to come from less trips, less number of vessels participating. That's where the profit benefits are going to come in. My question is just what kind of models would you want to see; what kind of analysis would you want to see in end so that we can get started on these types of things?

DR. WHITEHEAD: Could we see that analysis, the EF one?

MS. QUIGLEY: I think you would need a – it took Quinn Weninger like two years, I think, to do that analysis for the Pacific and for the Gulf. If we got started on it now – but I don't know that we have the money to do something like that.

DR. WHITEHEAD: And you said EF did one for the South Atlantic?

MS. QUIGLEY: They did but they used Redstone Strategies, and it was quite a bit different than what Quinn did. It was with the same goal in mind and with the same outcome. It was done completely differently. The methodology was completely different.

DR. SCHNIER: I think Redstone is older guys, right. It's CU Boulder Faculty that runs Redstone. I imagine that there is a production model waiting in there, so it would be nice to perhaps see that.

MS. QUIGLEY: Yes, it would, and they did not release it. They kept it private and would not share it, so we are not able to look at the actual production model. It's just they alluded to it from what I understand. I can take a look again, but we never saw the actual production model and had a hard time getting at that. It was basically just the results.

They told us the assumptions, they told us what data they were using, and then we received the results but it was their property. The production model was their property, I believe, and so we couldn't actually look at it. They may have done something similar to what Weninger does. But because it was contracted by EDF, it wasn't completely accepted by the public.

DR. WHITEHEAD: I don't want to see the report, then.

MS. QUIGLEY: Would you need to see a production model in this amendment in order to say, yes, this is the best available information?

DR. SCHNIER: I would like to see a production model results. I don't actually need to see it, if there is some sort of – I think from our perspective, we're really thinking about the fact that's where the gains are coming from the catch share program; so if we're going to be talking about all these other issues of communities, they are losing returns of X, Y, Z, that could all come out of those production models. I'd like to kind of see that. I think it would be nice to show.

And if you're doing those contraction models and you're doing the production models, you're sort of hypothesizing that people are going to be operating at capacity, you're going to know who is going to actually be transitioning out.

So from that model, if you knew who was leaving and who was staying, you'd know exactly what those regional impacts are going to be on the communities because you know which boats are leaving and which ones are staying, and you can project out quite a bit more than just the efficiency gains from that. You can look at the regional impacts result from contractions. That would be a beautiful thing to see or to have people do but, of course, that's assuming the budget.

MS. QUIGLEY: Well, it's possible the science center might be interested in doing something like this; I don't know. We can present it to them and see what is actually possible, so that's something we can look into.

DR. SCHNIER: I would like to point out that if you do that type of analysis, it's very easy to do that analysis and to figure out what those impacts are going to be at the community level, which

is definitely an issue for a community locations because of the fact that you know precisely where the contraction is going to be coming from and you can project it.

MS. QUIGLEY: Okay, so like I said before, Amendment 21 is not just catch shares. It's also endorsements and, of course, trip limits we already talked about. It's endorsements, regional quotas, and we haven't talked much about that, and there are likely to be questions of why didn't you talk about that? If there is anything you'd like to say about endorsement or regional quotas or anything like that, then, please, if you can, speak up or is there a reason not to talk about those things?

DR. MURRAY: We did talk about regional quotas, right?

MS. QUIGLEY: Yes, a little bit we did; yes, we did talk about regional quotas. They're thinking about –

DR. MURRAY: I thought I was advocating regional quotas rather strongly.

MS. QUIGLEY: When they're talking about regional quotas in Amendment 21, they're talking about the state or the region actually managing the quotas in any way the states or the region wants to, so we're talking about giving an allocation by species to each state and then these states – the actual state of Florida would run it or the state of North Carolina.

I think what we talked about – but maybe we talked about both – was giving it to a non-profit or to a group of fishermen, but what they're talking about is giving it to like the state of Florida or the state of North Carolina, but I guess it could apply – what we talked about could also apply.

DR. MURRAY: I guess not knowing enough about the specifics, I was sort of thinking about some level of aggregation and just calling it regional and some clever person at some point would figure out the appropriate level of aggregation. The other thing you mentioned is endorsements and you defined those earlier, but I have to admit that this is the first time I've ever heard of them.

MS. QUIGLEY: Amendment 18A considers endorsements for golden tilefish and for black sea bass. What that means is that endorsements would be required. An endorsement on the vessel for a specific species – and sometimes it's specific gear type – would be required to be on the vessel in order to possess or land – possess, harvest, land a particular species.

So, for example, a black sea bass endorsement would be required on the vessel in order to land, harvest, possess black sea bass. You would distribute endorsements according to an initial allocation, and that usually means you have to have harvested a certain amount of black sea bass over some particular years. It would restrict – once again, it would restrict the pool of people that can harvest a particular species to a smaller amount than is allowed currently under the current management system.

DR. SCHNIER: I never understand this part. It just makes no sense from an economist's perspective because what you're going to do is you're going to restrict people who might have a

value for something and to therefore depress the value of a quota, if we do have it; I mean, it's a restriction on who can actually buy the quota and then don't use the quota afterwards?

MS. QUIGLEY: No, it has nothing to do with catch shares. You don't buy quota or anything. It's basically the current management system is you've got 800 or something like 684 unlimited snapper grouper permits. All those people can go fish for sea bass, but right now only 49 people are fishing for black sea bass with traps.

All those 824 people, or whatever it is, could enter the black sea bass fishery if you don't go and hand out endorsements; but if you hand out endorsements to those 49 people that fished for black sea bass last year with traps, then you would restrict those people who could fish for black sea bass from now from fishing it in the future.

DR. SCHNIER: This is pre-quota regime; so if you issued quota, you could still have those people buy that quota and fish it.

MS. QUIGLEY: It's almost like having a sector for a particular species, but they don't self-manage. The government manages them.

DR. MURRAY: It's just a new barrier to entry, right?

DR. CROSSON: I guess what I'm understanding is that it is taking one permit right now that is a big broad-based permit that allows you to participate in all these different fisheries and splitting it into lots of little ones that are particular to different fisheries, some of which are in greater biological straits than others.

DR. MURRAY: It seems like not a very effective method of management.

DR. CROSSON: What pops in my mind is that it's the same strategy that they did overall with the snapper grouper permit and eventually it led to attempts to reduce effort further by cutting the number of licenses, but it certainly didn't seem to work as an overall strategy. I'm not sure why it would work if we broke it down into sub-permits. It would seem like the problem would get possibly worse.

MS. QUIGLEY: It's a way to protect historical participants.

DR. MURRAY: It's really just a rents' grab for people who are already in there and don't want anybody else to get their cut. So now we have discussed these and at least a few of us seem to think they're not a very good idea because they don't really seem to serve much of a conservation role for the stock. They're really just a benefit for a few people currently using the stock.

DR. SCHNIER: We have the issue of conservation, which brings up something that we haven't discussed but I wouldn't mind just bringing forward. There is yet to be a fishery in the United States that allows a third party to buy catch shares. This is one of these unique situations where if we're interested in reef preservation or anything of the sort where you might want to think

about allowing groups like the Nature Conservancy to come in and buy these things for preservation of reefs. I mean, this is –

DR. MURRAY: That seems to have been purposely excluded already from the list of options.

DR. SCHNIER: I'm just saying if we want to bring it out there; I mean, it's on the record and everybody –

DR. MURRAY: I think they're going to dissolve the social sciences group, you know.

DR. SCHNIER: Let's have a robust market. I mean, you said be creative; you used those words. I'm just curious about why we aren't even allowing that to be on the table at this point.

DR. MURRAY: If you look in the Document 21 on the action options, it seems that this was purposefully excluded, so I'm assuming that someone with decision-making power has already ruled that out.

MS. QUIGLEY: There is great concern by the public that a conservation group is going to come in and buy up quota shares and hold on to them and not fish them. The use-or-lose policy action is in there to provide them with some security. However, the use-or-lose policy – however, a conservation group has never come in as far as we can tell into a catch share program and bought up quota shares because it's not a good investment for them. That has never happened before, so usually people drop their use-or-lose policy, but initially it's usually discussed and on the table.

DR. SCHNIER: The Nature Conservancy actually – this is recently – bought up a fleet of boats in Morro Bay.

(Remark made off the record.)

DR. SCHNIER: Yes, but now it has just gone to an IFQ this year, and they're sitting on 13 percent of the rents from that fishery, and they're probably going to be leasing that out to get revenue flows from it.

MS. QUIGLEY: That's right; they're getting revenue flows, so at least they're being delivered to the fish dealers. Most of the public's concern is that people are going to hold on to it and not use it. The Nature Conservancy, when they bought the vessels, they said that they will harvest and they will harvest efficiently and in an equal friendly manner and in a sustainable manner, but they said that they will harvest. That's what I see as the big difference between people's concerns. I don't know if people really care that a conservation group is owning. I mean I think they do, but what they really want is to see people landing the fish and maintaining the community.

DR. SCHNIER: I guess they don't understand what economic value is if they don't understand that, because if a conservation group comes in and buys up an area, the only way it takes up any value is if they can potentially sell on the margin and get some value out of it. It's going to be an extremely valuable resource. I like the creative idea.

DR. MURRAY: Furthermore, whoever sold it to them chose to sell it to them.

DR. SCHNIER: Yes. I mean, the whole user clause that's in this document was made me think of like the old prior appropriations doctrine on water, which is basically why you have a lot of water rights problems in the west, which is that, okay, if you don't use the water and you don't put it to beneficial use, it goes to someone else. It's just a ridiculous law, and so why would we want to do it in the 21st century. It's doesn't quite make sense to me.

DR. LARKIN: I think I'll relay probably the most compelling argument I heard against allowing NGOs to buy this, and it was the fact that – now I don't know if this is true, but the biological models that we have, you know we only use the harvestable surplus. The stock is in the ocean to produce a harvestable surplus. That is the non-use value that exists and is out there. That would be an argument for what we're modeling is the usable surplus, so it was meant to be used.

DR. SCHNIER: Can I counter that? The counter to that would be that if you are on the downward slope of the growth curve, the conservation group would come it, bring it toward the top part and you'd get actually more harvestable biomass and larger rents and you could have more coming back eventually. I mean, that's the sort of counter to that argument is that it's an overexploited stock to begin with and everything is going to go up at that point.

DR. MURRAY: I agree with that, but I don't think the council is allowed to consider that kind of stuff, are they? It's specifically about the extractive-use value.

DR. LARKIN: Sort of the other argument is one that's entirely fixable is this motion that, you know, when you put these systems into place, you really change the nature of the fishery, especially people who have been in it a long time. I mean, now all of a sudden you go from being this harvest whenever you want to owning this long-run asset that you might not even – a certain fisherman might not be able to calculate the value of.

I know there is some anecdotal evidence when these program go into place, they get bought out at values that are very, very low, and so that they can get taken advantage of. I think we can think of lots of creative ways to avoid that from happening; and that's why one of my biggest pet peeves is when we put these programs into place sort of say, oh, the market is going to take care of itself without supporting at all what that means. I think thin markets are a very real concern.

If you want these people to get compensated, I believe, even if that's what you want them to do – to just give this asset to them and leave it to themselves, I think there is some concern that these people might get taken advantage of.

DR. MacLAUHLIN: I think this is a really big concern for the fishermen, and we would lose any support really quickly if there is not a use-or-lose policy in place. At least that's a beginning so that they don't get taken advantage of and so everybody can get used to the system. I feel like that's a big fear of the fishermen is that they're going – it's going to go somewhere else and then they're going to even lose access to it in any way, and they go up against the money that the NGOs have. I just think you would lose all support and then you would lose compliance.

DR. MURRAY: They don't have to sell it. I just don't understand why – I mean, almost all of these recommendations for Action 23 revoke shares at some point in time, and you're suggesting that you really have to put that in there to get buy-in, and I'm just curious at this point why because it just doesn't make any sense.

DR. MacLAUCHLIN: Well, I think also that – I know that they don't have to sell and if you want to keep fishing, then you can keep fishing, but there is also this concern that other people are going to sell and then you won't have access to it anymore; that it's going to –

DR. MURRAY: Which makes yours more valuable.

DR. MacLAUCHLIN: Yes, but not – I mean, this requires more capital for new entrants and for anybody wanting to expand their operation, and that in the South Atlantic I think is a big issue is that they don't really have access to capital like that in the fisheries. It's hard to get loans. I mean, I think that's a huge concern for them. I don't think they want the value of the share to go up a whole lot; because then the ones that would need to buy it, it would be even harder.

DR. CROSSON: There are class issues, I think. The people that would tend to support groups like the Nature Conservancy are coming from a very different socio-economic background and likely don't live in the community. It's the idea that they would fund a group that would then now go in and control a resource that local people now don't have the access that they used to.

I think that's the tension. At the same time, a lot of these guys are the biggest advocates of personal property or private property rights that you're ever going to run across. It's a strange tension that you run between these two.

DR. MURRAY: Yes, I didn't mean – you know, forget about NGOs; let's say we don't let them ever touch them. I'm thinking, you know, going back to Sherry's point about how this is changing things fundamentally because fishermen own an asset whose value depends on the future status of the stock. It means that we don't want to punish people for choosing not to fish. That's one of the huge benefits of these programs is that you can actually earn money by choosing not to fish.

DR. SCHNIER: Yes, actually there is – you were probably there in Asian, Vancouver, where they had the guy that came and spoke about the blackfish thing they're doing in British Columbia where the community that had been allocated the quota, they actually consciously decided as a group to not fully execute the quota for like three to five years to build the stock because they thought that they knew more than the biologists and they could restore the population and harvest more later, and it worked.

They guys were all multi-millionaires because they had the assets, they insured the assets, and it was good. You're basically barring their ability to sort of step up from the perspective where they say that we know a lot about the fisheries and we can do what we know is right, and you're barring them to do that.

MS. QUIGLEY: Yes, there are benefits and drawbacks to having the use-or-lose policy and hopefully the – well, the effects analysis that I write up will show that and draw examples like that into the analysis.

DR. CROSSON: That was in British Columbia? I mean, in the U.S. you'd have to go through everything through us because of Magnuson, and so it's NOAA that would have determine that the stocks now were in a healthier state. There is no ability – I don't believe that is an ability under the current version of Magnuson where you could carry a portion of the stock forward a year or two and then be able to harvest a greater amount.

DR. SCHNIER: They weren't; what they were doing is they were just consciously deciding to keep the overall catch at like 10 percent below what the TAC was; and then as time matured, the realization from their actions came up and management came in and increased the catch rate. And then they said, okay, we're happy, let's go for it.

MS. QUIGLEY: Yes, they could do that here. I don't see really why not.

DR. MURRAY: It seems like the use-it or lose-it policy, if it's based on a fear of non-fishermen holding them, then maybe it's much more important to make sure we keep the part that says no NGOs and no other groups that aren't fishermen, but why would you want to punish a fisherman for choosing to hold the quota for a year? That just seems counter to the whole –

MS. QUIGLEY: Right, the reason why we don't identify – you know, say no NGOs or something like that is because – or, you know, no non-fishermen is because any group could just get somebody to buy it for them, so there is just no easy way to do it. This is something that the council may not adopt or that the council could do away with in the future if they don't see that it's a problem or put it in if they do see that it is a problem.

Another thing that fishermen have been talking about that they really fear is armchair fishermen, fishermen who own the quota and then lease it out and make lots of money. We're thinking of it as a good thing; you know, fishermen get older or they're sick or their vessel is broken down. I'm thinking of it as a good thing, but they see it as a bad thing; some do.

DR. SCHNIER: But they sold it to them. The only way they're armchair quota holders is because somebody – I mean, somebody bought their quota. Sorry; I don't want to get down this road too much, but the only problem I would say is that you mentioned this point about we could change the regulation later if time came around; and can we?

I'm wondering how flexible these regulations are once they're in place. If I wanted to go change and make an amendment to the crab rationalization program in Alaska, it would probably take five or ten years to get anything changed up there. I mean, we're talking about something that would be set in stone for quite some time.

MS. QUIGLEY: They can change certain things. I think doing a redistribution or a reallocation would be enormous and probably would not happen, but I think changing something like a use-

or-lose policy could happen or changing a rollover or a carryover policy could happen. I mean, it just seems like that right now; that those kinds of things could actually change.

It seems like it could change, but, yes, you need to be very careful because how easy is that really going to be because other people might suggest that we change other things. Perhaps nobody wants to bring it up, so, yes, they need to be very careful because once something is in place, it is just kind of in place unless the council wants to undertake the change.

Okay, I think this was a really good discussion. Are there other things people want to talk about with regards to catch shares? If not, if we see that this is what we can do at this point in time, then that's fine. We can use the remainder of the time to talk about other things or to –

DR. MURRAY: I guess we skipped over the crab quota program. I would just like to say it sounds like a really good idea and express my full support.

DR. SCHNIER: Actually I think from the crab thing, I think it's a great idea and especially since it was actually organized from within and that it's basically set up. I know it's set up as sort of a preservation of friends for themselves, but I think they should get hats off on it. I would support it. It sounds like a very good idea.

DR. CROSSON: I think I mentioned it to you guys over lunch, but there is actually something in the Federal Register right now; a notice of intent to go collect economic data on those guys, so at some point there will be some numbers. I don't know if it will be at the rate that the plan is progressing. I'm not sure if it will be before or after a catch share program is implemented, but at some point we'll have some economic data coming out of NOAA.

DR. SCHNIER: I think the point here is that if you give them those rights, though, they a direct incentive to maximize the value at that point. Those four companies or whatever they are that are running that, they're not going to mess it up would be my hunch.

DR. CROSSON: If you have any interest in doing any research on this, anybody, just let me know because we still have not submitted the final questionnaire. There is opportunity for some academic research here.

MS. QUIGLEY: One thing that Gregg was bringing up was, is there anything in between trip limits and regional quotas and catch shares that the council could explore? Is there anything else the council could explore?

We've got people yes, yes, yes, we want trip limits, but those don't look so hot to economists and to others. And then you've got shares; it sounds like a good idea, but a lot of members of the public don't want it. Is there something in between or something that we're not considering that we could consider?

DR. MURRAY: Taxes.

DR. WHITEHEAD: Is the answer no?

MS. QUIGLEY: I think it probably would be; we might want to bring that up. I'm just joking. I mean, yes, it's something you can talk about. I think it's unlikely because it hasn't been done before, but you know that.

DR. WHITEHEAD: That's all we've got, right, regulation by quantity or regulation by price?

MS. QUIGLEY: Are there things that you want from the golden crab catch share that you would want to see. The production model, given the small number of participants, I don't know if that's a realistic possibility or not.

DR. MURRAY: I think the point is that this is one of those rare situations where it seems to be in good shape and they're about to make the right decision; and by making the right decision, we won't need to do any research on them. We'll just let them make lots of money.

DR. SCHNIER: Yes, that's exactly right for those situations. It's like when you're dealing and sort of got started out, they didn't mess things up too much beforehand so they got things right. The only thing that would be nice would be to piggyback some sort of data collection process on them on the post side to get more information about what they're doing and how they're doing it; maybe how it has affected different markets.

I would imagine that having the property rights we have seen that actually increases market value for a product; other ways that they're marketing it. They can space things out over a longer period of time and target their markets. That's another sort of from an economist's perspective pointing out some of the benefits of property rights, but that's sort of a selfish viewpoint.

DR. LARKIN: Actually, it's an interesting one because my first reaction is because there are so few you would bump up into confidentiality rules, but it seems like the verdict is out on how much information can be collected on catch share programs or LAP Programs. I would sort of argue that it's a national resource and we have the right to collect every data that we need in order to help future programs and design systems that are going to be able to work. I guess I would lobby hard for you need to be able to collect the data in order to analyze, and that's the only way we're going to be able to hopefully improve over time.

DR. CROSSON: Considering that there is a Federal Register Notice out there right now, if you wanted to comment to that effect, feel free to go do it because the only person that has commented so far was just somebody who thought that generally collecting economic data was a waste of time. The Silver Spring office sent me a copy of it, but I know it's still out there. It has to be published for like six weeks or something, a notice of intent to collect data. I know it's still out there right now and I'll go dig around and see if I can track and sent it to the group.

DR. SCHNIER: Actually, I was kind of concerned about the confidentiality issue; because when you were originally talking about the lack of information, I was immediately drawn to the fact that the NMFS data used to be set up that you had to have four or more vessels reporting activity in order for it to be public. I think that has changed to six. I thought there was a new change. Is it still four? It's now three?

MR. WAUGH: Three or more.

DR. SCHNIER: Three or more so the four actually hits because you can't be sort of just right at the threshold so if one of them drops out – That's what I was concerned about, but with four I guess it would okay.

MR. WAUGH: And this may be something that you all might want to comment on. It's sort of following up with what Sherry said. We're running into issues now where we're being told we can't show annual headboat catches because of confidentiality; headboat catches by species. We're being told that for some species, dolphin being one, that what we really need to show in our FMPs in order to not divulge confidential data is averages of years of data.

My view is that this is a common property resource and we need the data. This confidentiality issue in Magnuson really needs to be removed because it's getting to the point where we're not going to be able to show the council or include in our documents any numbers. You're going to be telling the public, you know, we're doing an allocation – if we were to split the dolphin and wahoo allocation between commercial, for-hire and recreational, here are the percent ages but we can't show you the numbers that we calculated that from because it's all confidential. It's really getting kind of bizarre. I don't know if you all are interested in commenting on this issue of confidential data.

DR. MacLAUCHLIN: At NMFS Headquarters this is a big issue and we talked about it a lot with general counsel, because in New England they probably like in two days posted all the inter-sector trade data, and general counsel took it down, and then there was this whole issue about the market.

I know in New England, also, they can't collect data on the prices because of, I don't know, some confidentiality, but then they can't do the cost models. It was like a whole issue. And it was kind of – yes, it was kind of bizarre and in the end it really hurts the fishermen. I was talking to a Maine fisherman about it and kind of explaining that we can't estimate your costs with the state program because we can't get the information; do you understand that?

They do understand it, so it was just kind of this really weird gray area like there were some arguments, some legal arguments for the data being available to show all of this, and then there were some legal arguments against it. I think it's an area that probably NOAA Fisheries needs to give some hard guidance on and general counsel as well about what is legal and what is not and what we can do and what we can collect and what is going to be harmful, really, for the fishermen for us not to have.

DR. SCHNIER: I think that the line that Sherry took is actually pretty good. It's a good one from the perspective that I think we'd like to go – from the constitutional perspective, it's the right because it's a property held by all the public. It's a public domain right and so therefore since we all technically are owners of that resource and once we allocate that property to somebody in our population, then the question does become does that mean we get to know what they do with it, too?

When it's an open access scenario or you're a capture-type fishery, that's more like a perfectly competitive industry that we envisioned and maybe you don't want to preserve information like that; but in this other sort of public trust type thing, maybe we do have the right and should have that information publicly available.

DR. MacLAUCHLIN: That was one of the arguments that I had when we would talk about this with general counsel at headquarters was that it's a public resource. It was going to come down to with the example of New England and posting their trade data – or it was the Northeast Regional Office that posted the trade data.

I mean, I think it's going to take someone like Food and Water Watch filing a lawsuit or a complaint and saying if you say it's our resource, then we deserve to see who is making money off of it, but I don't know if –

DR. MURRAY: Is it covered by FOIA?

DR. MacLAUCHLIN: No, they're saying that it's confidential information because some of those sectors I guess are a bunch of permits that are only like three people.

DR. SCHNIER: That's the predicament of Magnuson-Stevens, which is my understanding of the Magnuson-Stevens is that protection came around because of data leaks that came through that were not favorable; so that's why all of us, when we get this data, sign confidentiality agreements and stuff so that we don't do it.

MR. WAUGH: Well, Magnuson has I think since its inception included this provision that you have to protect confidential data. It sounds good on the face, but when you look at – aside from the fact that it's a common property resource, it's not the private sector. If you want to operate in the private sector and have that protection, go into the private sector.

Our jobs managing these fisheries are tough enough. It's really now getting such that before long we won't be able to show any data in the southeast because the number of dealers – once you get down to below three dealers, then you can't show any of the data. It's really getting bizarre. The root issue is changing Magnuson and getting rid of that confidentiality requirement.

Certainly, there is no intent to then publish where individual fishermen are fishing. That to me is the one area that you need to be careful of, particularly if you go to electronic reporting with GPS so you know site-specific information. That's no problem to protect; but these others, the cost and the difficulty that it introduces is tremendous, and now it's getting to the point where it's just going to prevent us from being able to do the analyses and the council to have the information they need.

MS. QUIGLEY: Okay, I've added a recommendation under here and I want to see if you guys like it; mandatory data collection program; share prices; annual pounds' prices; amounts traded; permit prices; cost and revenues for catch share program should be strongly considered due to the public nature of the resource.

DR. SCHNIER: I guess what I would add to that is that in the Gulf of Mexico and the Southeast Region, from my understanding the spatial resolution data is just horrible. I mean, the spatial scales were really, really large management areas, or the size of Texas is what they look like. Having a more refined spatial resolution of this would be really, really good from a lot of the things that we're talking about.

That could easily be piggybacked on like GIS coordinates. They don't have to be a grid; just tell us the GIS coordinates of landings or something like that. That would be an easy way of doing it versus saying I caught it in Management Area 510 or some huge area. That would be very beneficial especially if we're looking at potential habitat protection zones, closures, anything of the sort. There is a lot of analyses that we can't do very well especially when we're talking about the Gulf areas where we're looking at closures.

MS. QUIGLEY: Okay, thanks. I just have to put on the record, because I know if the golden crab fishermen were here, they would put it on the record. There was an allusion made if they created a catch share now, they're going to make lots of money. They would probably say that they have yet to make money and that they're hoping that maybe they will make money if they have this 2 million pound ACL. If they can get a catch share program in place, they're hoping that they actually will be able to make some money for the first time ever. That's the plan right now. I just had to put that on the table.

DR. CROSSON: We said we'd finish up at 4:30 and it looks like 4:30. We'll finish up the meeting for today and we'll start again tomorrow morning.

The Social and Economics Panel of the South Atlantic Fishery Management Council reconvened in the Crowne Plaza Hotel, North Charleston, South Carolina, Wednesday morning, February 16, 2011, and was called to order at 9:00 o'clock a.m. by Chairman Scott Crosson.

DR. CROSSON: I guess the first thing we have on the agenda this morning is Kari's presentation.

DR. MacLAUHLIN: I wrote up a really brief outline so at least you guys can follow what I'm doing. This is really in the baby stages. What I was going to start out with, to begin with is just explaining what the Mid-Atlantic has been doing over the past few months, kind of talking about using advisory panel performance reports to help the SSC set ABCs for data-poor stocks.

It came up when they were talking about squid, and they were really being forced to use landings. They knew that there was some more information. The stuff put together the strawman paper, and I have a copy of that and I can send that around if you want to look at it. It's from a couple of months ago. It was like really general, you know, kind of what they were thinking about and so the social scientists and the economists on the SSC have been getting together and talking about it regularly over the past couple of months.

Then they got together with the Northeast Science Center, Social Sciences Branch, and then they've also I think kind of been coordinating with the New England Council on this. When this first came – when I first heard about this, I was really excited about it. I think it's a really great

way to get the fishermen more involved and get that qualitative information – you know, get just more information about the stocks that we don't know so much about biologically; and then also to really figure out a way to get the fishermen's input.

I got in touch with all the councils and most councils have some kind of informal process when they're setting ABCs where they will bring in fishermen to talk about landings and stuff like that, but nobody has a systematic formal process, and that's what the Mid-Atlantic is trying to do. The first thing is that it's based on SAFE reports for the Mid-Atlantic, and we don't have those. So, if we do something like this, it's already going to be a little different. And then some of the other things they've been talking about is a concern about if it's just the advisory panels that were putting together these reports and they're the ones that are commenting on the SAFE reports or giving more information about landings; is there representation on the AP for different operational sizes, different regions, different interests?

And basically what is going on is how to turn qualitative information into quantitative and put it into a model, which is kind of the long-served thing. Gregg and Kate and I were kind of talking about this the other day, and in my head, what I'm thinking is a short-term outlook and then a really long-term involved project.

So we were just kind of talking about maybe doing some pilot projects with the golden crab guys and the mackerel and figuring out a way to take their information and incorporate it into the SSC's process for making these decisions. And then a long-term project would be kind of way over time – do you all know what the Beige Book is that the Federal Reserve uses? You do, okay.

The Federal Reserve uses – they collect quarterly information and qualitative information, you know, interviews and surveys and stuff like that from all the different regions and districts, however the Federal Reserve has that set up, about basically the economic environment in that region. They have a system now where they take that information – and some of those things that come up in the interviews are coded and then they're put into a model and they actually use it to set interest rates.

I have a little print-out thing from the Beige Book that kind of talks about how they quote, how code it and all this stuff. I think I could get the nitty-gritty on that methodology if I needed to. Well, I would like to kind of see what they're doing exactly. And then we are also talking about in the long-term kind of this would be a way to really – you know, all these fisheries that we don't necessarily know a lot about and have descriptions about, it would be this ongoing project that could maybe even be incorporated into the SEDAR process.

These are all really long-term, down-the-road things. The way the long term would have to be set up is that over time, you know, doing interviews and figuring out what situations, what – you know, even words that the industry uses is going to be an indicator of something that has in the past happened after they've said something happened.

I also think this is great because I think incorporating information all the way from North Carolina to the Keys; maybe things happen in North Carolina that triggers something that

happens in the Keys – I don't know; I think there is a lot of information in a way to systematically do this.

So, with you, what I wanted to do was just really brainstorm what information would be useful for the SSC and what would be useful for the biologists as well, what would they be okay with, and access what kind of information and then what are sources of data and the partners like with the science center, our regional office and the Gulf Council and then even maybe Mid-Atlantic. There are a lot of challenges but I think a lot of great opportunities for getting the industry involved in this and a lot of really great long-term projects to be done. Anyway, that's about it.

DR. CROSSON: I was on the Mid-Atlantic SSC until this summer, and I have not been involved in this process. This started after I had left. The original squid discussion I was present for, and what happened was that there are two different species of squid, I guess, that are managed by the Mid-Atlantic SSC, and there wasn't a whole lot of data on either of them.

When it came time to setting the ABC for those stocks, all we had basically were landings' data. If you looked at the past decade, there was a period where there was a big dip and then it climbed back up. And the question was what caused that dip; was it biological, was it market conditions, was there not a market for the squid that year, was it some serious weather events that year?

And what ended up happening was there was a commercial representative in the room for the Garden State Seafood Association. We consulted with him and he is a pretty reasonable guy; he is a biologist from his background. He just sort of kind of thought off the top of his head what he thought had happened, and he gave his answer, and the SSC sort of accepted that.

It worked for setting it for one year, but the council was not really happy with that informal process for a number of obvious reasons. I guess this is what the council has decided is they want to try and find ways to incorporate that on an annual basis, you don't have hindsight bias or anything else.

MR. CUPKA: I just wanted to mention at our last Snapper Grouper AP meeting this idea was floated before them. We did make a commitment at that time to look into this further and kind of track and see how the Mid-Atlantic situation was working out. One of the main reasons is precisely what you said; it was to try and explain and to look at I guess what you might term metadata or information that the fishermen had associated with things like why catches changed, whether it was biological or some other reason, and so that could all be incorporated in the process and give the SSC and the councils a little better perspective on what was actually going on in the fishery from the fishermen's point of view to explain some of these changes in bait and things like that.

They were very receptive to the idea and I think would really welcome an opportunity to have more formal input on some of these things that from their perspective they see going on; that maybe when they do a SEDAR or something like that, you're just looking at numbers and you don't really understand some of the dynamics going on there.

A lot of times it can be things other than just biological issues involved. I think it's something that we ought to pursue, and I'm glad to see that we are because we did kind of make the commitment at least to that AP that we were going to look into it further. Like I say, they were very receptive to the idea.

DR. SCHNIER: Out of curiosity, is there any interest in doing independent sampling outside of fisheries data? That's another way of sort of collecting information when you've got years where you might be concerned about maybe there are other events that are causing – market-driven events that are causing them to not target species and having them put down because it's not advantageous.

I know like in some other regions they actually will lease a boat for like a week or something like that and go out and randomly – well, actually not randomly – basically go on a grid and they basically sample to figure out what different reasons have. I don't know if that might help with some of this information. It sounds like you're trying to fill voids in a data set this is coming from catch history, but catch history has got a bunch of other incentive layers on top of it that you can't really peel away and figure out the true underlying biology.

DR. MacLAUCHLIN: Scott, do you think about there are some people – at the science center are some projects that could be a part of this? I know the golden crab project could be a part of this.

DR. CROSSON: I'm sure that there would be some interest in it. I mean, everybody has got time pressures down at the science center. I don't want to make any big commitments. I had floated this around. I remember David Carter, who works our recreational economics, David expressed an interest in it from what I recall. There is definitely some curiosity about it.

The big question is are these market factors and the weather conditions and all this other stuff. You just don't see that reflected when you go to a SEDAR; and so there is a dip in landings, the biologists almost always assume that it's some sort of biological factor that is driving it, and that is what gets incorporated into the model, and I'm sure that is pretty frustrating from the fishermen's perspective.

This to me is a way of trying to get the data in as early as possible into the process so that we can use for management purposes. I guess some of the questions are going to be who is going to be producing the reports. That's a big one, right. I'm sure the fishermen are in favor of getting their input in, but I'm sure there is also a significant time commitment for that. I know council staff has got a lot to do; but if it's done through the advisory panel process, then it's going to be council staff that are probably going to be taking the lead on this and not the science center.

DR. MURRAY: I guess the obvious thing is prices; are we already collecting X-vessel prices? If you're looking for something that causes yields other than biological factors, changes in prices are the obvious thing to look at, right?

MS. QUIGLEY: Right, we have X-vessel prices; we do have that information.

DR. MURRAY: Just going back to that example that you brought up, Scott, was were price changes thought to be responsible. There was a dip in – I don't remember what yield.

DR. CROSSON: For the squid; yes, it was a question of what the market was looking for and there just wasn't a market supply for a – there wasn't a demand for it in the market for a few years for the squid. I can't remember – there are two species of squid. One is turned in calamari and the other is used for bait, and I think it was the bait squid. The bait market is its own entity. There was stuff coming in from overseas; and then for whatever reason that demand picked back up and so guys went out and caught it.

DR. SCHNIER: I don't think I would add to the price discussion, it's like the obvious for most people, but it's not necessarily the absolute price that matters. It's the relative price within the other species groups that they could potentially be fishing for. If you normalize on a given species and kept that species at a constant so that you're always comparing it to a common species in the price information, they give you really information about what is the better thing to be looking at a given point in time because absolute prices are not going to help that much, I would imagine.

DR. MacLAUCHLIN: I think with the fishermen in the South Atlantic, they switch a lot and so sometimes it's a matter of switching fisheries and that's for different reasons. For example, when I was down in Key West, the lobster prices were not only at three dollars, which was an incredibly low price, for the beginning of the season. It usually would start out at seven dollars a pound or something.

Not only that, but they have never known beforehand. They always are told when they first bring the first catch into the dock; and so they knew before, like a couple of weeks before; and so some of them only put out like half their traps, and so they weren't even putting the effort in, and they were focusing on other fisheries.

And then when the price started to go up, they switched, and then stone crab started, and they switched, and then they had like major theft issues that year with people stealing from traps. There were just all these factors that you wouldn't see, I don't think, in the price. I think that's why this would be really a good way like when do you switch and why do you switch. Is it just because of the price or is there something else happening there, a lot of factors.

DR. SCHNIER: The stuff that Sherry and I did, we actually were looking at that switching behavior; and actually I'm kind of curious about this area, to what degree people are full-time fishermen or there is time off and they're doing other things. In our data set there was a fairly high number of people that would not fish during periods or time of the year, and so I'm wondering if you're going to be collecting information on people and you're going to try to get more efficient.

One of the things to do would be is what is the non-fishing alternatives for these people because maybe that's the relative benchmark is that – I mean, these people aren't going to be fishing for a few months at a time. Then you need to be knowing what are they doing during this time. There is a huge impact there. They aren't large-scale commercial fishermen operating 365 days a year.

There is an outside alternative that they're always comparing this to that you don't know, and that's also going to cause some serious problems.

DR. WHITEHEAD: Is the Mid-Atlantic looking at prices?

DR. MacLAUCHLIN: They are still in like very much the discussion stages of this; like, you know, basically where we are a little bit, probably slightly further. But I think that they are really wanting to hammer out the methodology and everything before they really get rolling. That seems to be what they're kind of arguing about. They're just kind of taking inventory of information they have, data sources, who is interested, what the science center – you know, ongoing projects that could be incorporated into it. That's where they're at right now.

DR. CROSSON: Bonnie McKay is on the Mid-Atlantic SSC. Is she the one that's – she is heavily involved in this process? Okay.

DR. WHITEHEAD: I think prices are a really good idea.

DR. MURRAY: I think the alternative incomes is a very good idea, too, particularly if you're going to be doing policy analysis if we're going to try to figure out what is going to happen if we cut this ACL or whichever acronym we're worried about that day. Also, you mentioned that they face price risk, which is an interesting thing to think about. Most other places where you face price risk individuals find ways of smoothing that risk with future contracts and that sort of thing. That may be something that the council or this group could consider as used price information and somehow facilitate risk smoothing the price of it.

DR. SCHNIER: On a related note to this, I know that Marty Smith was doing a survey of people in the Gulf where they're trying to collect this type of information and to get at the risk thing is looking at sort of financial obligations, mortgages, that are sorts of things that people have in their background.

If somebody could by any chance get maybe a copy of that survey; I don't know if he has really done with that data. I know he has done other work for the data, but I don't know what he has done recently, but that survey might be a good way of building off of other information that we're talking about here. He is really interested in looking at outside alternatives, financial obligations, which give you sort of this idea of how risky are you going to be making certain decisions and that sort of stuff.

DR. CROSSON: Fuel prices are always something that we're wondering about and even fluctuations within a year, like in 2008 when everything spiked up and then dropped right back off again. That's probably the single biggest per trip expense for most fishermen is the price of fuel. Any way we can get a handle on that would be useful. I know that is a big topic of concern at the science center.

Our group is discussed this repeatedly. You can probably track the prices at the pump with new federal data, but dockside prices and then there is also – you know, the fishermen have

relationships with certain dealers. It's pretty complicated. I'm sure the advisory panel could be of value on that.

DR. WHITEHEAD: I've always refused to attend a SEDAR because I didn't think I had anything to contribute; but if you're looking at landings and they see a dip and they ascribe it all to biology, then there is a reason why an economist might be there. This is great. I'm not volunteering for any SEDARs.

DR. CROSSON: I think a lot of us have brought up weather, and I don't know how to conceptualize that. It's just sometimes – I mean, up in North Carolina where the winds blow, you just can't go out to sea, and I'm sure the case is like that up and down, but the weather patterns change when you go from one region to another even during the same time period, so that's going to have to be – that's definitely going to have to be incorporated in there. How that is going to be incorporated and how you make a statement about weather over the course of a year, I don't know, but it's a big factor.

DR. MacLAUCHLIN: There are a lot of things that could be brought into this, and it's not anything that is going to happen I don't think very quickly, and I'm okay with that. I think it's okay to take it slowly. I just wanted to go ahead and explore some ways and methodologies and interviews and stuff like that.

MR. WAUGH: On the weather issue, one thing we had talked about before, Roger in our office works with a lot of the groups that are doing remote sensing, but you've got all these buoy systems that are looking at wave heights. We talked about working with the AP and coming up with some wave height cutoff that changes a day from being a fishable day into an unfishable day. And that, you should be able to go back in time quite a ways, and there may be a way to look at a correlation there. That's something we've talked about before.

DR. CROSSON: The relationship of wave height to wave period. If it's a background swell, four foot or five foot background swell, the guys may be able to deal with it if it's calm; but if it's a short period, yes, there is no chance that they can go out there.

MS. IVERSON: Thank you for letting me comment. As kind of a seasoned veteran at public hearings, I have a suggestion. If you wanted to go back, perhaps, all of our meetings are transcribed, all of our comment periods are transcribed, all of our public hearing minutes are transcribed.

If you're looking at things to consider in this process, you may want to look backwards and do word searches for things like weather, seasonal conditions, hurricanes; look back over the public comments that are available. I believe since 2004 maybe they're transcribed, and so you can either search the audio files or the little transcription and see – let the fishermen speak because they will tell you what conditions they would like to have considered, whether it be fuel prices.

There is a long laundry list of items that could be considered based on previous testimony over years, and we have all of that information available. I would just ask that maybe you consider what has already been said and what are the factors that are there that could take that qualifiable

data and put it in some sort of model and let the fishermen speak. They're tell you; they're very, very happy to tell you over and over again.

DR. CROSSON: Yes, Kim, I don't know if I said it during the meeting yesterday, but I discussed informally one of the projects that I have. I have a graduate student in the University of Miami who approached me about doing some research and our looking in the text mining software, because all of the councils have just volumes of public transcripts that are available.

I had a need to do a complete literature search and learn about the processes for doing text mining, but it's obviously something that companies like Google do very well, and so I'm sure there is lots of information in there. I hadn't thought of it in this context, but I could certainly see how that would be of value for this. It's statistically analyzed, so it would be useful that way, too.

DR. MURRAY: I was just wondering when you mentioned qualitative information if you had any stuff in mind. I think that was related to the beige book that you described for the Fed. Were you thinking about surveys of qualitative questions towards fishermen like their expectations or – I'm just trying to imagine what else.

DR. MacLAUCHLIN: No, what I was talking about more is – and maybe Kim's suggestion of a few things at public comments where they had talked about it – is taking text like that and just basically like text analysis and coding it or doing some text mining. That would be fun. I think it would be not so much like surveys, sort of structured questions. It would be more innovating and just letting the fishermen talk about like, you know, semi-structures where so maybe you would say, okay, what – tell me about what happened last year; and just getting in touch with them, how is it going down there, and they'll say, well, at the beginning we can do this and then we switched and then we went here and then it did this in the market, and then he didn't pay me, and then you can say, okay, and then pick out little pieces of that.

DR. MURRAY: Just out of curiosity, do these fishermen negotiate prices prior to taking off, because I'm wondering if that sort of information could be recorded or price negotiation agreements that they have with people.

DR. MacLAUCHLIN: From what I've always heard the fishermen in the South Atlantic are price takers so houses and dealers set the prices.

MS. QUIGLEY: Is this something that you guys think would be useful to the SSC?

DR. WHITEHEAD: Yes.

DR. SCHNIER: Yes.

DR. MURRAY: Yes.

DR. CROSSON: I don't know – again, we brought up yesterday this question of where the fish go and we just sort of – people threw out some first-hand knowledge they've had from talking to

fishermen. Any information about where things are getting shipped to and what the actual market is for a lot of this product would be of huge value I think for this, especially for stuff in the snapper grouper complex that is trying to find a high end market.

If that market is international, the value of the dollar is important as well. I remember the last time I was up in Vancouver talking to Canadian fishermen, they were upset with the decline of the American dollar versus the Canadian one because it was making their exports – you know, it was dropping the value of their exports.

MS. QUIGLEY: What David just said, in case that wasn't picked up, was product form – it's good to get information on product form as well. The next item we have on the agenda is discussion of predicting future catch for amendment analyses.

Every time we do an amendment, we take a look at what has been harvested in the past, so we typically use the average over the last five years of landings, average of last five years of prices, revenue. Then we try to make to make some prediction about what is going to happen in the future, and we use that as our baseline. Gregg is going to cover this a bit.

MR. WAUGH: It gets into also how we set our regulations. You have a total catch and it's allocated recreational and commercial, and so then you have to compare that sector's ACL or ACT, if we set a target level, to some landings to determine your percent reduction. It's less of an issue on the commercial side because we're just tracking and closing the fisheries when the quotas are met or projected to be met.

But particularly on the recreational side, you look at what is the best predictor of next year's catch. And as Kate pointed out, the tendency has been to use the averages of the last several years. We've looked at the last three years, last two years and tried to get people to look at the last year. I think probably the last year is probably closer to what they're going to do than averaging two or three.

But you can get into playing the answer because a lot of this determines which average you pick. You can have a lesser percent reduction and maybe a different bag limit of size limit change, so we don't want to be picking the years based on the answer the percent reduction you get. Of course, any average or last year isn't going to predict what people are doing ; and as we get more of these quotas and more of the species that are shut down – like right now on the recreational side the shallow water groupers are closed, vermilion is closed, black sea bass closed.

So if anybody is out fishing, they're going to be targeting something else, and we certainly didn't know about that last year; so just any help you all can provide in terms of looking at a methodology for predicting what behavior is going to be next year. It's important on the recreational side to determine the regulations, but to me, too, it's important on the commercial side because I don't think we're doing a very good job right now of looking at discards.

As these individual species are closed and they're fishing for other species, they're discarding them. There is a discard logbook program, but that sampling level is only at 25 percent. We've asked why it hasn't been increased to a hundred percent, and generally the answer is, well, it's

just self-reported data so why expand it. But, anyway, anything you all can offer in terms of how better to predict what fishermen are going to do in the future.

DR. SCHNIER: I think that depends on how well you're modeling how they're doing right now, I mean, to a certain degree. If you can figure – I mean, the first thing you'd do would be to try to develop a model looking at how well you could actually predict what they're doing now, like within-sample predictions; so that if you're trying to predict their behavior of targeting species, then develop models that generate that and then you can try to figure out – use those behavioral models to figure out what they're going to do next.

That's the only really thing you could do at this point I can think of, but you were addressing a different issue, which is that using five-year averages to figure stock assessments and stuff like that, too, right, that's another issue here or not?

MR. WAUGH: More for bag limit analysis.

DR. SCHNIER: I guess I'm still not following that. Could you explain more on that?

MR. WAUGH: Yes. For instance, if you have a recreational quota in essence now of 100,000 pounds, and then what do we compare that to determine what percent reduction is necessary? Do we compare it to what the recreational caught last year or the average of the last two years? Those percent reductions might vary. The last year may give you a higher percent reduction and result in a lower bag limit than if you average across two years or even three years may give you a lower percent reduction that is need, and so you could have a higher bag limit. You can get into gaming the system and picking your years based on getting the smallest percent reduction necessary.

DR. SCHNIER: When you say percent reduction; I'm still lost. What do you mean by percent reduction?

MR. WAUGH: Okay, if the assessment says, for instance, that the quota for the recreational black sea bass fishery next year, that they can kill 100,000 pounds; so then we compare what do we expect them to catch to determine how much we have to lower the bag limit in order to make sure their harvest doesn't 100,000 pounds.

DR. SCHNIER: How do you not know they're just not taking more trips?

MR. WAUGH: Well, that's a good question. We don't have a way right now of taking that into account. All we do is look at what they're going to be allowed to be caught versus some estimate of what we think they'll catch based on past history.

DR. MURRAY: I see, so the issue is that there is not a perfect mapping between the annual catch you want them to take and the control variable you have, which is bag limit.

MR. WAUGH: Exactly.

DR. MURRAY: That's an interesting question.

DR. WHITEHEAD: Wouldn't a time series model with the aggregate data somehow capture that if you have bag limits and stuff or other regulatory variables on the right-hand side.

DR. SCHNIER: I think if you had enough variation in bag limits within a time series, you could figure out how they're responding to different bag limit regulations in that way; but if there is not a lot of variability in the bag limits over time, it's kind of like trying to find the elasticity of water demand or something like that when they move water prices up a penny. It's not going to have much of an effect.

DR. WHITEHEAD: Recreational data goes back to '81, and I think there is pretty significant variation in bag limits for most species over that period.

MR. WAUGH: There is going to be a combination of bag limits and size limit changes; so between the two there has been, particularly in black sea bass, over the last three or four years there have been quite a few changes. The size limit has been increasing. I think we dropped the bag limit some. As long as it doesn't complicate it because you've got bag limit and size limit changing through time, which is probably does.

DR. DUMAS: So there are actually several different variables you're interested in forecasting catch or landings' effort and also discards, potentially, and they're all interrelated. It's like John pointed out, in sort of the economics tradition there are two – you're trying to forecast something and there is two sort of traditions.

There is structural models that you can use to forecast that try to build detailed models with different actors and what they plan to do and look at past data to try to predict future behavior, but then are also just time series forecasting models where you just sort of throw everything in and see which variables predict best when you don't really understand what is going on underneath, but you don't care; you're just trying to predict what is going to happen. You have both of those traditions that try to predict, for example, movements in stock prices and movements in agriculture commodity prices and so on.

And so there are pros and cons with each of those methods, but those are things that could be looked at. It seems to me that there is a strong analogy to trying to forecast what is going to happen in agricultural markets. In these fishery markets you have a lot of regulatory distortions in the market.

You have bag limits and closures and so on and agricultural markets there are also a lot of distortions. There are price caps and quotas and other types of things. Also, there is a large impact of external driving forces in terms of weather. Weather affects agricultural markets very much and it also affects fisheries, and there is a lot of stochasticity in there, a lot of variation from year to year.

So there might be something gained to look at what has been done in agriculture, both structural models and forecasting models. There is a long tradition there of trying to predict what is going

to happen in a distorted, stochastic system where you do have individual agents who can act independently; individual farmers and individual fishermen that can act independently but yet they're aggregate behavior does affect market prices, and so it's similar in those ways. All this would be very familiar to the economists here, I'm sure.

But, some interesting things that when you talked about the items you looked at in the past to predict, you talked about moving averages in some sense of past catches, and that's a small part of the macro-economic forecasting model world, and there is a lot more that can be done there with the data you have to perhaps try to improve the predictive capability of those types of methods.

Also, have you brought in – I'm curious to know – I assume you have, but I'm not sure – weather variables and general economic indicator variables, interest rates, unemployment rates, those kinds of things to help predict as well that would help in improving prediction both on the effort side of the fishery but also on the demand side for the product that could also affect prices. Bringing in some of that additional type of information in addition to your biology information on catches or estimated stock sizes and things might also be helpful, it appears to me.

MS. QUIGLEY: Yes, I think that's really great information and we can look into that. A lot of this has been – the regulations are ramping up over the last year or year and a half, and so everything is just kind of all happening at once and we're realizing, oh, wow, we need some sort of better predictors like this is we're not up for this yet, and we need to really catch up. So, yes, we're just starting to think about some of those things, and I guess that's where we need to go.

MR. WAUGH: And I'm sure Kate has a better idea of how complex this would be, but how big of a project would this be? Anybody have sort of an initial guess?

DR. WHITEHEAD: As a range of how big it could be? It depends on how much you want to model. If you want to model the structural model like Chris is describing, that's a pretty big task. If you just want to throw the available data into your computer and estimate a simple time series, that's fairly easy and wouldn't take all that much effort.

You need to try to do one as well as you could and then throw one together and do some in-sample forecasting would be a good way to see and then compare that to the approach where you're just averaging over recent years to see how well you're doing.

DR. MURRAY: The variables that you don't control that you're worried about varying with policy but not perfectly are discards and number of trips, right, and you do have some data on that. The first step would just be to look at how much that actually does vary with response to your control variables and then we could see is this a huge thing or should we maybe not worry about it too much and just stick with what has already been done. That could be done in a couple of days.

DR. DUMAS: Looking forward in the long run, sort of the long-run goals, if you think far ahead and think so let's consider a day when the fisheries are recovered and things are not overfished and overfishing is not occurring and you'd like to have a well-functioning system far in the

future, it would be interesting to have better markets established for these commodities, for these resources, futures markets and that type of thing where you could then rely more on the market to provide you information in terms of futures prices and things like these for your fish commodity, as we have in agriculture, and then a lot of the weather information and economic index information and those types of things become incorporated into the behavior that occurs in the market that determines the futures prices.

So then you begin to use futures prices as forecasters, as predictors. That would be establishment of some electronic trading markets and whether that's worth it or not depends on the value of the – sort of in some sense on the aggregate value of the resource. There has been work done in establishing markets for things like water out west, water markets and water trading and things like this and potentially futures markets.

And those types of markets, those future markets are more important to the extent that you do have variability in your resource and resource prices, and there is a lot of uncertainty and stochastics, and then you want to try to draw in as much information as possible from as many sources to the market, and these additional types of market structures could help do that. It's sort of a long- range project.

DR. MURRAY: Of course, I'm not aware of many – well, I'm aware of one futures market for any kind of seafood catch. The fact that these don't exist I guess suggests at least two possibilities. One is that there is no private information to be aggregated to put into a futures price; that the market just views these as a random walk; or there is some sort of lack of infrastructure and maybe then there is a role for the council to assist in the formation of these markets.

DR. SCHNIER: I would also suggest if you're interested in doing a model early on, the structural approaches that John is alluding to would probably not be the first step. Given the resources, I would say that the first step would be to do a reduced form time series analysis, just get a good time series kind of attrition to tackle it and do some forecasting off of it.

DR. WHITEHEAD: You don't really need a time series kind of attrition to do it.

DR. SCHNIER: I was just putting in a plug.

DR. MURRAY: I would be interested in working on something like that, assuming that there would be opportunities to publish it eventually.

MS. QUIGLEY: Okay, we thought the conversations might go a little bit longer, but that's all we have on the agenda right now. We do have some things under other business, but first I wanted to ask are there other ways that this group would like to be involved. I asked this at the beginning in what ways would people like to be involved, what are your hopes for this panel, but now I'm going to ask again.

Since we've kind of gone through the agenda and you've seen some of the issues that we're dealing with, how do you think you would like to interact with the SSC, with the council, other

projects you would like to be involved in, how often would you like to meet, what kind of things would like to accomplish over the next, say, three years, five years? Any ideas now or is this something you probably need to think about a little bit?

DR. CROSSON: I would especially be interested in doing stuff with Amendment 21's giant comprehensive approach for just shifting the way we're – I mean, we brought up some of these different options. It's going to be a massive document by the time the council gets done with it. I just feel like that's to me this opportunity for this group really to be heavily involved with this process, and I'm sure there can be some publishable research that would come out of anything.

Any guidance I think we can give to the council on this, they would probably take very seriously. I know compared to just going through all the routine of setting biological catch levels that we've done for the past two years on the SSC where John and Sherry and I just kind of – we were involved somewhat but it was a little slow at times, and I think this is definitely the most interesting thing that's going on right now with the council.

I know that down at the science center we're very aware of what is going to be coming down the pipe for that. Again, I have some idea based on the discussion we had yesterday of what we'll write up and submit to the SSC and then what perhaps I would be going down and talking to the council on in June. It would be good if I had a feel for what the group would like to do in this process.

DR. WHITEHEAD: Which one is 21, again?

DR. CROSSON: It's the giant maybe catch shares, maybe splitting it up between the different states, all of this for snapper grouper.

DR. WHITEHEAD: Yes, I'd say the two big issues that we would be interested in are catch shares and allocation.

DR. SCHNIER: Sort of logistical question; are we allowed to do contract work for the region given that we are SEP members?

MS. QUIGLEY: Yes.

DR. SCHNIER: I think from my perspective, I think the switching behavior stuff is something I'm really fascinated with. Sherry and I have worked with that before, and it seems to be a relatively complex, difficult issue to get your head around here. That might actually be important. That would be something that I think would be kind of fun to do if I were interested in that type of work.

(Remark made off the record.)

DR. SCHNIER: No, no, it was more of whether or not there is a conflict of interest. If we're making recommendations of what we think should be done, I could see that being a conflict of

interest if somebody comes and say, hey, can you do this, and so that's just what I want to make sure that we don't establish that is a conflict of interest.

DR. LARKIN: The question that comes to mind is when we have our SSC meetings, who can come and make presentations? There have been some issues with biological studies in the past, and it was never really clear to me when we would consider information from some folks. The case I'm thinking of had to do with biological information that didn't maybe go through SEDAR and can we do anything about it, do we listen to these presentations or not, but then sometimes we've had meetings where we've had presentations from Redstone. To me it's not clear what type of information can get introduced at the SSC and which types of information that we can consider. Does that make any sense at all?

MS. QUIGLEY: Yes, my feeling is that John is kind of trying to figure that out; the SSC is trying to figure that out. Previously the SSC would look at SEDAR reports and review them, and now it's less – more people are coming forth with information than previously so I think that they're trying to kind of figure that out and what is acceptable and what isn't.

I haven't heard any final word on it yet, but I think they're still trying to figure it out. But if there is something that you're interested in hearing about, talk to me, talk to Kari, talk to John; we'll talk to Gregg, we'll talk to John and figure out is that something appropriate. But it's my feeling if the SSC wants to hear a certain presentation, they should be able to.

John runs the SSC and I'm not sure if he has decided yet what is appropriate and what isn't. I'll touch base with him and just find out if that has been clarified or not; and if it is, make it clear to the SSC; and if it hasn't been clarified, then let the SSC know that is something that's being worked on.

DR. LARKIN: It seems like we were looking for some information. I don't know if it was at the last meeting. There was a discussion of what happened in that one year and I think that's when Brian got up to the table, and so they were willing to listen to even anecdotal evidence on this socio-economic side.

So maybe we don't have quite the bar that the biological side has because they have SEDAR, in which case it would be nice to have more – not only but quantitative studies if people are working on things that can contribute to answering the questions. And some of the folks on the SEP are working on it, it would seem like it would be a natural outlet for the results of some of that work.

MS. QUIGLEY: Well, now that we have Kari and I as two coordinators of socio-economic individuals, if there are people working on social and economic sciences, then we can start having those conversations and incorporating some of that research better; whereas before there was no one really coordinating and no one really focusing on getting people together. Now that we have that, hopefully that will happen more often. We will be working on that.

DR. SCHNIER: Just a curious question about like we like of it; has anybody really nailed down the council on saying what they would like out of us precisely?

MS. QUIGLEY: Well, I mean, from my understanding, we've had a few things crop up where, oh, it would be really nice if the SSC looked at this, but we really need the socio-economists to take a look at this; and just things have popped up here and there. I don't think there has been any focus on this is what we need from economists, this is what we need from social scientists, this is what we want exactly from the SEP.

It's been more, you know, things pop up, and, wow, it would be really nice for someone to take a look at this type thing. So, it would be nice if they – yes, if they provided some exact things that they wanted. I don't really know that they know exactly what some good information would be.

MR. WAUGH: And you'll get that reflected through your staff support and through having council members sit in here. The minutes from this meeting will be provided to all the council members. You'll get that. We can have some discussion with them and see if they can come up with a list of things that they particularly want.

I think where you'll get that is reflected through what your staff support brings to you; and those of you that sit on the SSC, what you hear from there as well. We can raise this perhaps during the SEDAR Committee would maybe be a good one. The next time we have an SSC Selection Committee – that's the group of council members that recommend people to the full council for being on the SSC and this group as well, so maybe have discussions there as well the next time they meet.

DR. SCHNIER: I think what I was actually thinking of is that as economists we sort of have ideas about policy in itself, and so is this going to be more of a panel looking retrospectively when the council has come up with an idea and we sort of analyze it or is it a two-way street where we'll be thinking about, hey, maybe we should be thinking about this and we propose that to the council and then the council gets back. That's the type of connection I'm talking about; is it a unidirectional or bilateral sort of feedback loop in the connection.

(Answer given off the record.)

DR. SCHNIER: Okay, that's more of what I was really trying to get at.

MR. CUPKA: I think as we go forward in time, based on what we've seen in the last year, that this group is going to play a much larger role in council activities. We're seeing that already with the closures where people put more emphasis on the socio-economic data.

We've got Senator Brown who has introduced a bill wanting economic analysis done on all the FMPs on an annual basis by a third party. I think there are going to be more and more opportunities and more and more need to have input from a group like this in the future. I'm sure you'll be asked to do more by the council as we move ahead and certainly not less.

DR. LARKIN: So way back when in the SSC when we would – the socio-economic folks and the biological folks would split up, and then we would come back together, and each of those groups – remember that – we'd come up with statements that seemed very effective and

satisfying. I don't know if we want to move toward that, but we definitely made some statements about trip limits. I mean, we talked a lot about it.

I don't know if we condensed it down into one statement. I don't know if that's something that would be helpful. I found it very helpful. I don't know in terms of how that feedback is going to go. We're going to have a lot of transcripts here and they're just going to go to the council, and they can read them or not, but maybe a more effective way is to come up with our summary statements of how we feel about each topic that is put in front of us.

MS. QUIGLEY: I think that's an excellent idea; just having a one-pager for people to read. No complicated language; words that everybody is familiar with would be very, very helpful, I would think, to the council. I mean, obviously, this is going to go to the SSC; but as we talked about yesterday, you could put together a summary statement or summary response to each of the agenda items and then pass that to the SSC and perhaps the SSC could tack it on to their SSC report that would be given in March or whenever the next SSC report is. I think that's the way to go because, right, otherwise who is going to listen to the minutes; I don't know.

DR. SCHNIER: Can I forward something that we can all decide, but yesterday we were putting together that list of things that we would like feedback from on the hierarchy and the ordinal ranking of things and some relative measure across those. I think from my perspective, from what we have been talking about, that's in my mind the first thing I would love to get feedback on as we're sort of formulating policy advice from that side.

DR. LARKIN: Yes, that's a good example of one of the things. You're absolutely right; if you want our feedback, help us figure out the best way to advise.

DR. MacLAUHLIN: But we did say things about trip limits.

DR. LARKIN: That's the thing that comes to mind, right, because when it came up at our SSC meeting it was, oh, this would be great to have that panel look at, and right now it's not clear to me how they're going to get our – you know, what is going to go down at the SSC meeting; yes, we talked about it for half a day and we said some really profound things. We hope you all read the transcript.

DR. SCHNIER: So you're basically saying there are two things to take away here. One is the ordinal ranking and the other thing is our statements about trip limits not being a brilliant idea. Is there anything else you guys can remember? If we want to do it, we might as well do it for the first go around, right. Are you guys in support of doing something like that?

DR. WHITEHEAD: I'm a little lost; do you mean –

DR. SCHNIER: What Sherry is talking about, it would be nice if we sort of put a one-pager up saying at the end of our meeting these are the highlights. Should we just go ahead and do it for our first meeting? I suggested doing this, but if there are other things we should add, we should probably think about – those are the two things that popped up in my head.

DR. MURRAY: Yes, I think we should do it. Let me pull up the agenda from yesterday so I can remember what we talked about.

MS. QUIGLEY: The first item that we talked about was review of the Gulf of Mexico Red Grouper Evaluation. We talked about it pretty completely. I can probably go over the audio, the minutes and put together statements that were said, so I think it would take a while. But if you want to go ahead and add just a couple sentences to sum up what you remember from talking about yesterday, that would be helpful; you know, one or two sentences and then I can go back through the audio and put all the details.

And Sherry had suggested I talk with Assane over at the Gulf Council and get the formal review that was done of the Gulf of Mexico Red Grouper Document. I can do that as well; but if you want to come up with one or two statements for each of these agenda items, I think that would be really good.

DR. MURRAY: I was going to say what John said yesterday about the first analysis was that the substitution patterns were not in the model and that you'd be – I think we sort of decided that we would be a little apprehensive about using those as guidance for 100 percent and zero percent allocation, but perhaps think about they being for a stronger allocation in the recreational sector I think is what we talked about. John, you were sort of leading that.

DR. WHITEHEAD: I think if we – especially since it looks like we might have some extra time today, before we leave just spend some time writing stuff out instead of dumping it on Kate to go through the transcripts and pull out stuff. I mean, we've talked about all –

MS. QUIGLEY: That would be very nice.

DR. WHITEHEAD: Sherry described it, but we would break out and we would talk and two people would write a paragraph or two about what we concluded. The discussions feed into that and then as you're writing, as any other process, you refine those arguments, refine those statements. I think that would be really helpful.

MS. QUIGLEY: That sounds great; let's do it. Do you want to do it now? Okay, so you were suggesting breaking perhaps into two groups and having each group – sorry, maybe I misunderstood – so talking about breaking out into groups and then each one handles different agenda items?

DR. WHITEHEAD: Yes, I would volunteer to handle the first agenda item or work with anyone who wants to work on that one.

MS. QUIGLEY: Okay, why don't we split it up? This side may be the easiest thing to do and this side and you guys can handle Agenda Item 2. Split yourself up however you like and we can do the first two agenda items.

(Whereupon, an off-the-record discussion was held.)

DR. CROSSON: Well, first of all, this committee has not met before today, but I think it started about a year or two ago was when we originally appointed. At that point I was working for the state of North Carolina, and Sherry and John and I all agree that it was fine if I was the chair of it. Now, as a NOAA person we're not really supposed to be the chair. I know I'm definitely forbidden to the chair of an SSC as a whole. The regional office brought up the issue.

They were surprised to see that I was the chair of this subcommittee and it made some people uncomfortable. Now that I think about it, since this group is probably going to be looking at lot of the stuff that comes out of the science center and I'm part of that group, it puts me in an odd spot, so I don't actually disagree with that. This will be the last meeting that I'm going to be the chair. I guess I should open it up to see if anybody would like to be the chair in my place. Sherry.

DR. LARKIN: I nominate John White.

DR. SCHNIER: I second that nomination.

DR. CROSSON: Do you have any objection to that, John? Okay, well, then the next time we meet and hereon out John will be the chair of the Socio-Economic Subpanel.

DR. WHITEHEAD: I look forward to exercising that great power.

DR. CROSSON: All right, is there anything else we would like to bring up before we finish up today?

DR. WHITEHEAD: Could we just discuss the thing that David brought up. Do we have time for that?

DR. CROSSON: Yes, certainly. Can you fill in the background since you were e-mailing with David. David Carter, who is the recreational fishing economist down in the science center, had an issue and he and John were e-mailing back and forth. Originally David asked me this question; and this again where I'm in this odd spot because I get asked questions. As part of the science center group, I get asked questions all the time.

Since Jim Waters retired, suddenly we're getting flooded with stuff about the South Atlantic Council that Jim sort of protected the group from. Everybody is trying to deal with that. I have experience on the South Atlantic Council and I'm on the SSC and so I get asked a lot of questions, and I had to say over and over again I can't speak for the SSC. I can't even speak for John and Sherry and I as the social scientists in the group. So, at any rate, some of the guys started e-mailing with John, and I guess John is going to go into that.

DR. WHITEHEAD: The science center has been asked to evaluate the economic effects of over 200 potential commercial/recreational allocations, and the list of species includes things that are fished that are recreationally important and others that are not. David Carter needs to come up with recreational values for catch of these species to use. There are none for a bunch of these species.

The alternatives are to use numbers that come from species aggregates; so, for example, red snapper would be aggregated with other snappers that don't receive much targeting. What that tends to do is the red snapper target behavior might drive the value estimate upwards for every other species in that aggregate. So for these species that aren't targeted much, they're going to have catch values that we think might be too high, upwardly biased. The question is what could be done with that? There is no literature to grab hold of for a benefit transfer analysis, and the best estimates that are available look like they're too high.

MS. QUIGLEY: And just to put on the record, it looks like this request came from Mike Travis to David Carter, right? Okay.

DR. MURRAY: So, just to clarify the question, people are targeting the red snapper which has high value; and when they target red snapper, they catch a bunch of other stuff, too, and those other things are being treated with too high of a value?

DR. WHITEHEAD: Yes.

MALE VOICE: So the numbers are from the MRFSS.

DR. MURRAY: The decision they're making is, right, it's their willingness to pay for that decision to use that particular gear. I guess since we're taking value of decisions rather than fish, I guess I don't see the problem there.

DR. WHITEHEAD: So when you make that decision to choose a gear to take a charter trip and you're deepwater fishing and you catch a red snapper and you're pretty happy; if you catch a white grunt, you're not so happy, your value –

DR. MURRAY: Your willingness to pay just reflects your expectation from that activity, that gear choice. Without a survey, how bad did you feel that you didn't catch a red snapper? I don't know if there is any way to disentangle those.

DR. DUMAS: So if we redefine the object of choice or the economic good is the fishing experience and not so much the fish that you haul up; that works for me.

MS. QUIGLEY: So apparently this is an internal request that the science center and the regional office need to sort out; so at this time we're going to let them sort that out. Then if they have a request for the SEP officially, then we can go ahead and discuss it, but it's probably something they need to talk about internally before – because there could be some misinterpretations. We're not sure exactly what is going on so I suggest we talk about it offline. Is there anything else to come before the committee? Okay, if there is nothing else, then we are adjourned.

(Whereupon, the meeting was adjourned on February 16, 2011.)

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