

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SOCIAL AND ECONOMIC PANEL

**Town & Country Inn and Suites
Charleston, South Carolina**

April 13-14, 2026

Transcript

Socio-Economic Panel of the SSC

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Jason Walsh, Vice-Chair
Dr. Chelsey Crandall
Dr. Eugene Frimpong

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Adam Stemle
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Attendees and Invited Participants

Dr. Marcel Reichert
Dr. Fred Serchuk

Kaylin Clements

Observers and Participants

Other observers and participants attached.

The Social and Economic Panel of the South Atlantic Fishery Management Council convened at the Town and Country Inn and Suites in Charleston, South Carolina on April 13, 2026, and was called to order by Dr. Jennifer Sweeney-Tookes.

WELCOME AND INTRODUCTIONS

DR. SWEENEY-TOOKES: Welcome. My apologies, and it is 1:34, and so we are starting four minutes late, but we will go ahead and get started now, four minutes late, and I apologize. We were doing sound checks, and checking in with some of our presenters for the afternoon, and so thank you.

Thank you so much, everyone, for being here. We're sort of a small group today. We do have two members on the webinar, and so, Chelsey and Eugene, we wish you were here in person, but thank you for joining us however you can, and so the first thing that we always do is introductions, and so I would like for us to go around the table.

We have a new member this meeting, and o I'm very excited about that, and so we'll actually start on this side of the room, so that we don't put her on the spot right away, and so, Kevin, if you don't mind starting with your name, your organization that you're a part of, and then any of your relevant specialties that you bring to the table for SEP.

DR. HUNT: Dr. Kevin Hunt, Human Dimension Specialist, Mississippi State University.

MR. STEMLE: Adam Stemle, Industry Economist, NOAA Southeast Regional Office.

MS. PACKAGE-WARD: Christina Package-Ward, Social Scientist, NOAA Southeast Regional Office.

DR. SWEENEY-TOOKES: I should have introduced myself, and I apologize. I'm Dr. Jennifer Sweeney-Tookes from Georgia Southern University. I'm an applied anthropologist, and I am the chair of the SEP.

MS. CURTIS: I'm Christina Curtis, and I'm the Fishery Social Scientist for the South Atlantic Council.

MR. HADLEY: John Hadley, and I'm the Economist for the South Atlantic Fishery Management Council.

MR. WALSH: Jason Walsh, Economist for the North Carolina Division of Marine Fisheries and vice chair of the SEP.

DR. KITNER: Kathi Kitner, former SAFMC staff social scientist, and currently unaffiliated applied anthropologist.

DR. SWEENEY-TOOKES: Thank you very much, everyone, and welcome, Kathi, to the SEP, and so our next order of business is to approve the agenda, and so I hope -- I believe that everyone has taken a look at that, seeing that we have materials to cover until five o'clock today, and we

start back up at 8:30 tomorrow morning. Are there any changes, requests, concerns about the agenda? Yes, please.

Thank you, Vice Chair Jason, for pointing out that we did not ask Eugene and Chelsey. I apologize, Eugene and Chelsey, and will you two please introduce yourselves?

DR. CRANDALL: Sure, and should I go first? This is Chelsey, or, Eugene, do you want to go?

DR. FRIMPONG: No, and go ahead, Chelsey.

DR. CRANDALL: I'll go ahead. Hi, all, and sorry that I can't be there in-person. Chelsey Crandall, Social Scientist with Florida Fish and Wildlife.

DR. FRIMPONG: Good afternoon, everyone. My name is Eugene Frimpong. I'm with UGM Marine Extension and Georgia Sea Grant.

DR. SWEENEY-TOOKES: Thanks very much, you two. My apologies. Back to the agenda. Do we approve the agenda? Do I see any concerns or changes? We will consider it approved. Our next order of business is to approve our minutes, and we have two sets of minutes that we reviewed for this meeting, the April of 2025 and the February of 2026 minutes. Do I see any objections to approving those minutes? Anyone online? We will consider those minutes approved.

MR. HADLEY: Yes, and so now we'll move over to public comment. There's no public in the room, and so, if there's anyone who wants to offer public comment on the webinar, please raise your hand, and we'll get you unmuted to provide your comment. We'll give it just a few more seconds, but, so far, no hands online. All right. Not seeing any public comment online either.

RECENT AND DEVELOPING COUNCIL AMENDMENTS

DR. SWEENEY-TOOKES: The next item on our agenda, Item 2, is Recent and Developing Council Amendments, and I believe John Hadley will share these with us.

MR. HADLEY: All right. Thank you, and so I'm going to jump over to the overview, and so this provides a few of the items. There's an attachment that has all of the recent and developing council actions and amendments.

I'm going to go through what's in your overview, just because we pulled out a few of the pieces that are sort of potentially of interest of the SEP, or really being -- A lot of council attention is on them right now, and so I wanted to just bring them to the SEP's attention, just to give you an idea of what's going on in the management world, so to speak, with the council, and, also, there are a few items on here that will come up again during the other discussions during the SEP agenda, and so kind of a little bit of a primer.

With that, I'll jump into the first amendment, which is Amendment 61, and this is an amendment where the council is looking at reducing, possibly, some of the species that are within the fishery management unit for the snapper grouper fishery. Right now, there are fifty-five species.

The council's thinking about potentially changing that, and they've identified, as of now, fourteen species that they're considering whether they should remain within the fishery management unit or potentially be removed altogether, and so essentially remove them from federal management, and remove them from the fishery management plan, or potentially remove them from management, but keep them in the fishery management plan as ecosystem component species.

With that, management measures such as ABCs, ACLs, and accountability measures would be removed for those species. However, they're likely looking at them in an aggregate, and they could maintain some items, such as a permit requirement or reporting requirement, or potentially looking at setting aggregate limits for those species, and so that's something that's currently ongoing with the council.

Moving down, we have Snapper Grouper Amendment 60, and so this is looking at changes to the snapper grouper commercial fishery, potentially removing the two-for-one provision for the snapper grouper unlimited permit, and so, currently, if you were to buy -- If you wanted to essentially get into the fishery, buy a commercial Snapper Grouper 1 permit, you would need two. One gets retired, and then the new one is issued to that permit holder, and so there's been a -- There's a little bit of a kind of a runaround, depending on the permit type, whether it's held by an individual or a corporation, and, also, the council is looking at essentially ways for new entrants to come into the fishery, and so, with that, they're potentially examining removing the two-for-one provision.

Additionally, there are a few other actions in that amendment that looks at increasing trip efficiency, and so looking at dynamic trip limits to help better utilize the commercial annual catch limits, and then also looking at stowage requirements for gear onboard, specifically for long lines, and so, for example, if someone is bottom longline fishing for sharks, they're not able to keep snapper grouper species, because that's not a gear that is allowable, for the most part, in the snapper grouper fishery. With that, looking at ways that that could still be upheld, but allowing a little bit more flexibility on the commercial side and a little bit of increased trip efficiency and increased trip revenue for some trips.

Moving down, and still in the snapper grouper world, looking at Amendment 62, potentially state management of recreational red snapper. That's a very hot topic right now in the fisheries world, and all of the four states in the South Atlantic have applied for exempted fishing permits.

That would potentially allow additional recreational harvest of red snapper off of their state waters, and so, with this, you know, that's the experimental phase of this. If it goes well, there is the potential to essentially allow joint state and federal management of recreational red snapper, but that's very early in the process right now, and, as I mentioned, in the exempted fishing permit stage, and so still waiting on whether or not those EFPs, exempted fishing permits, are going to be approved, but they've all been submitted and are under consideration by the agency, and so that could be -- If they are approved, that will be probably -- You'll hear a lot about it, and probably read a lot about it in the news.

Moving down, there's Regulatory Amendment 37, which reduces harvest of black sea bass by approximately 50 percent and revises some of the retention limits and implements an annual spawning season closure. This is in relation to the most recent stock assessment, which did not show a very rosy picture for black sea bass, unfortunately. Going along with this, there are

probably going to be some notable social and economic impacts and effects that go with it. However, hopefully that stock can rebuild with the reduced harvest.

Moving down, looking at headboat vessel limits, the council is considering a headboat vessel limit amendment that would bring a little bit more parity between six-packs of charter vessels and headboats. There are vessel limits for several species in the snapper grouper complex, and so the council is -- If there is a low vessel limit, that's especially restrictive for headboats, since they do carry so many passengers, and so the council is looking at ways to potentially look at a different limit for headboats based on the number of paying passengers.

Then last, but not least, is the snapper grouper management strategy evaluation, and so we'll get into this discussion in a little bit more detail later today. We're looking at ways to add an economic component to this, but, generally speaking, dead discards are a major issue, an ongoing issue. They have been an ongoing issue, and still are in the snapper grouper fishery, particularly on the recreational side, and so the council is looking at a management strategy evaluation that essentially models and tests potential changes to management of many of the major driver, if you will, snapper grouper species within the complex.

With this, the idea is that would look at it on a multispecies level, and so the multispecies effects, potential management changes, and allow a more holistic approach, rather than looking at it on a single-species-by-single-species basis, which is where things often end up in various amendments, and so we'll get into a little bit more detail on that, but I just kind of wanted to put that out there as a primer for our discussion later, and, with that, I'm happy to answer any questions.

DR. SWEENEY-TOOKES: Any questions about these recent and developing amendments? Any questions online? No hands are raised. Thanks very much, John. Appreciate the updates, and we'll look forward to hearing about the MSE later today. Our next agenda item is Number 3. We'll be hearing from Julia Byrd and Meg Withers on the Citizen Science Program Updates. For those folks online, we're just having some technical difficulties, and so bear with us, please.

MS. BYRD: Thanks for your patience, everyone, as we kind of figured out the technology here. For those of you I haven't had an opportunity to meet, I'm Julia Byrd, and I am the Citizen Science Program Manager for the council, and I'll be tag teaming the presentation this afternoon with Meg Withers, who is our Citizen Science Project Coordinator.

Really what we're trying to do today is just give you guys kind of an update on some of the activities going on with our projects that are underway, and then some of the key activities kind of on a programmatic scale that have happened since you guys met last spring, and, before handing things off to Meg to give you an update on SAFMC Release, I wanted to share a little bit of information.

We've been really excited over the past kind of several months, and weeks, that we've been able to grow the Citizen Science team a little bit. This spring semester, we were able to work with an intern, Taylor Mickey. It's a joint internship between the council's Citizen Science Program and the South Carolina Department of Natural Resources.

Taylor is an undergraduate student at the College of Charleston. She's a marine biology major, and, for the internship working with us, she's been helping with the FISHstory project and helping

kind of scan and process some of the photos we've been able to get, and then her semester is wrapping up in the upcoming weeks, but then we're also excited to share that we have recently hired Kate Chapman, who is our Citizen Science Project Assistant, and she is a graduate student at the College of Charleston, and she'll be working with us through the end of September of this year, helping mainly on the RELEASE project, but really excited to add her to the team, and, in addition to her graduate school work, she also works part-time at South Carolina Sea Grant, and so I just wanted to share that we have been able to kind of grow the team a little bit since you guys met last spring, and, with that, I'll hand things off to Meg.

MS. WITHERS: All right. Thank you, Julia, and so kicking things off with our SAFMC Release project, we have a few updates for you. Participants are continuing to record information about their released shallow-water grouper and red snapper in the free mobile app SciFish, and we are continuing to prioritize a lot of outreach, to meet new folks and recruit them to the project, and that includes continued close collaboration with the best fishing practices team. Our messaging goes very nicely with best fishing practices, and so, by continuing to partner with them, we're able to even more effectively engage with folks, and so that continues to be really fruitful.

I'm going to share some updates about our 2026 Participant Recognition Program, as well as the Sea Grant South Atlantic Release Rodeo, and then I'll quickly share a little bit of an update on our participation at the data workshop last year for SEDAR 90.

Starting off with our Participant Recognition Program, or the PRP, just to add another acronym into the mix for you, and the PRP was established a few years ago for this project, with the aim of really thanking our Release participants for their contributions to the project and recognizing them for their achievements, and so we have some adjustments to our milestones.

These are kind of milestones that folks can meet. They're predetermined and established at the start of the year. There are some changes, and some things have kind of stayed the same. One of the changes is that we now have a referral milestone, and so we're encouraging folks who are participating in our project to refer other fishermen to the project who might be interested, but we are still recognizing folks for their quantity of submissions, as well as the diversity of the species that they're submitting, and recognizing folks for submitting the smallest and/or the largest of each project species.

Then we're really grateful to Sea Grant for continuing to adopt our photo milestones, and so, a couple of years ago, Sea Grant adopted these photo milestones, and they set these kind of guidelines, and so they select winning photos based on those guidelines, and those photos get highlighted in our SAFMC Release newsletter, and the winners earn Sea Grant thank-you packets, and so a big shout out to Sea Grant for partnering with us on that, because folks really enjoy having their photo highlighted, and it's a great way to engage with our participants.

Then, new in 2026, thanks to a grant from the Atlantic Coastal Cooperative Statistics Program, we are able to have items in association with our milestones this year, and so, for example, if someone submits five entries to SAFMC Release, they earn a rope handle bucket that also has some kind of educational stickers on the side, and we've already received really positive feedback from folks, both on the fact that we're incorporating items into the PRP, but also on the items themselves. We've heard that they're useful, and folks are appreciating the items that they have earned, and so we're really happy to hear that.

Moving into another way through which we are engaging our participants, last year, Sea Grant kind of launched this new challenge called the Sea Grant South Atlantic Release Rodeo. The rodeo came about because Sea Grant was looking for additional avenues by which to get best fishing practices gear in fishermen's hands, and we, at the same time, were looking for ways to facilitate more SAFMC Release entries that would include photos that would allow us to conduct both species and length validation, and it seemed like a good opportunity to team up.

Last year, the rodeo ran from May 1 through July 31. Folks can earn up to a maximum of four entries into Sea Grant giveaways per month if they submitted SAFMC Release entries that included a photo of their released fish, but they could double that if they submitted a photo of their fish with the fish on a ruler, or next to an item of no length, like a soda can, and then took the photo from like a bird's-eye view where we could conduct length validation on that photo. Then, at the end of each month during the challenge period, Sea Grant would draw two names out of a hat, and those folks would earn the Sea Grant giveaways that month. We are really pleased to share that this was a success.

When we looked at SAFMC Release submissions May through July in 2025 compared to submissions during those months in 2023 and 2024 averaged, we saw a 28 percent increase in the number of submissions, but, not only that, we saw that the number of submissions with photos doubled, and the number of submissions with photos that could be used for length validation almost tripled, and so we were really excited to see both the quantity of submissions as well as kind of the strength of those photos be boosted during this challenge period.

Then, on Sea Grant's part, they were able to successfully distribute best fishing practices gear to randomly selected participating fishermen, and they received positive feedback from fishermen, both on the challenge itself and the Sea Grant giveaways, and it was a great opportunity to build meaningful relationships and partnerships with members of the fishing community, and so we are really pleased to share that the Sea Grant South Atlantic Release Rodeo is going to be held again in 2026, and its structure will essentially be the same, and so it will start on May 1, which we are very excited about and starting to spread the word on.

Then, finally, my last quick update for you all is we just wanted to share with this group that, during the SEDAR 90, and so the South Atlantic red snapper stock assessment data workshop, which was held in spring of last year, we shared length data for red snapper that were submitted to the Release project, and we have a working paper, which is linked in the presentation, and we are very excited to share that the length data we provided were recommended to be used in the assessment by the data workshop panel.

There are a lot of steps between that data use recommendation, of course, and then the data being incorporated potentially into the assessment, but we're still really excited about that recommendation, and incredibly grateful to all the fishermen in our project for submitting data and making it possible for us to even share that information, and we're also very grateful to groups like you all for providing such wonderful and valuable guidance and insight along the way, because we really benefited from the team effort, and so really appreciate all of you all, and those are all of my SAFMC Release updates. I'm happy to pause for questions, but I'll also be here at the end, because Julia has some stuff to update you all on.

DR. SWEENEY-TOOKES: Questions for Meg about SAFMC Release, questions or comments? Jason.

MR. WALSH: Awesome. Thank you. Great presentation. I saw the 20 percent number increase from like the average from 2023 to 2024 to this past year, and what's the scale of that? Like how many submissions are we talking?

MS. WITHERS: I would need to go look at the numbers, but what I will say is that that kind of time period tends to be one of the time periods in which we're getting a lot of submissions, but I would hate to give you a number off the top of my head and it be incorrect, but, to have us have an increase during that time period in which we're already seeing like generally our kind of highest quantity of submissions was great to see, but I don't know that I could estimate it off the top of my head, but I would be happy to follow up with you.

MR. WALSH: Yes, and I would be interested. Thank you, and, yes, I would be interested to know the number of participants, and then the number of submissions as well.

MS. WITHERS: In terms of the number of participants we have, you know, in the hundreds, but it's a much smaller group than that that are, you know, actively participating, but we have seen, kind of over time, the average number of submissions per participant kind of grow over time, with things like the PRP and the rodeo potentially, and so hopefully that can help provide a little bit of scale, in terms of number of participants, and then I can follow up with you about submissions.

MR. WALSH: Yes, and one quick follow-up if I may, and sorry. Do you see an increase in like September, you know, year over year, after like months outside of that window? Do you have any --

MS. WITHERS: Increases -- Like are you asking if this increase carried through other months, or are you asking if there's like a peak later on in the year?

MR. WALSH: No, and more just an overall increase throughout the year.

MS. WITHERS: I will say that last year was the strongest year for the project yet, and so we did see -- I don't know if I can say that it carried throughout the whole year. I would kind of need to look into it in greater detail, but what I can say is that we continue to see more photos, and more length validation photos, after the conclusion of the challenge, and so that is one area in which kind of the benefit of the rodeo kind of carried on, and then we also do tend to get a bit of an influx of folks in the fall, or submissions in the fall, because a lot of folks tend to catch juvenile gag inshore, or not necessarily inshore, but like folks are seeing a lot of juvenile gag grouper, and so that is one species where we kind of see a bit of an influx in the fall, if that's helpful.

MS. BYRD: I would also say, you know, there are submissions most months out of the year. I mean, they peak, and there's definitely an increase when like shallow-water grouper opens, when bottom fishing really starts, kind of in May as well, just to note that kind of too, but --

MS. WITHERS: I appreciate the questions.

DR. SWEENEY-TOOKES: Thank you. Thanks very much, Meg. I appreciate it. Julia.

MS. BYRD: All right, and so I'm just going to update you on a couple of our other projects, and so next is a quick update on FISHstory, and I think many of you are kind of familiar with this project, but just to give a quick overview, and this is a project that's using kind of old historic fishing photos to help us learn more about what was caught, and the size of fish that were caught, kind of prior to for-hire monitoring programs starting in the South Atlantic, or just when they were starting, and so the period 1940s to 1980s-ish.

You guys have received several updates for FISHstory in past meetings, and so today I just wanted to do kind of a quick update on project findings to-date for the three main components of the project, and so the first component of the project is really trying to digitize and archive these old historic photos. To-date, we've had over 2,300 photos that have been archived through the project from the South Atlantic from the 1940s to 1990s, and still really heavily from Florida. We have a lot of photos from northern Florida and down in the Keys, and so looking to grow the project and find more photos from the Carolinas in particular.

The second component of the project is kind of analyzing those photos, and so we use the online crowdsourcing platform Zooniverse to have volunteers help us identify and count fish and people in the photos, and, to-date, we've had over 4,000 volunteers that have helped us analyze just under 2,000 photos in Zooniverse.

To help with data validation, we have what we call our validation team that review a subset of those photos, and so the validation team is made up of kind of fishermen and scientists, and there's some retired agency scientists, who we're very thankful, who were willing to continue and help us validate photos within the project, and so, last fall, the validation team kind of reactivated, and they have reviewed over 400 photos, helping confirm the information, the fish identification and counts within those photos.

Our lead analytical partner for this project is NC State University, and Jie Cao is leading the effort with his team, and so he has kind of developed a model that can use all of the volunteer data, and then the validation team data is used to calibrate, help calibrate, that volunteer data. and so he is putting together information on catch rates right now.

Then the third component of the project is kind of estimating the size of fish, and so estimating length compositions from the photos for some of our key species, and so all of the king mackerel and red snapper that are within the photo archive have been analyzed, or measured, to-date, and we have produced length composition estimates for those.

The red snapper length compositions were presented at the SEDAR 90 data workshop, similar to the SAFMC Release data, and they were recommended for use by the data workshop panel. Again, that assessment is still underway, and so we are really thrilled that they are recommended for use by the data workshop panel, but that kind of model is still being developed along the way, and then the king mackerel length compositions will be presented at the next SEDAR South Atlantic king mackerel assessment, which I believe is still scheduled to begin in 2027.

Just to give you a taste of kind of the length data that we can gather from the photos, these are going to be length compositions by decade for red snapper. It's in fork length inches, kind of on this slide, and so you can see, kind of in the 1950s, the mode is up here, kind of twelve to fourteen

inches. If you look at the 1960s, you can see that the mode is the same, but you're starting to lose some of these kind of larger fish that are seen in the photos that we have archived, and then, in the 1970s, you can see the same thing here. The mode is the same, but you're seeing kind of fewer of these larger fish in the photos we currently have archived.

If you're interested in checking out the working paper that was submitted to the data workshop, that has a lot more detail on things, there's a link down here in the corner to check that out if you're interested, and so that's a quick update on fishery.

The next project I wanted to give you a quick update on, and you will be hearing much more about this project, SMILE, tomorrow, but this is a project that's led by the Reef Environmental Education Foundation, or REEF, and this project partners with recreational divers to collect length information on some data-limited species using a laser-mounted underwater camera, and so the three-year pilot project for SMILE wrapped up at the end of last year.

This pilot helped kind of develop the camera technology, the methodology that divers would use, as well as developing an AI workflow to help analyze the photos kind of after they're collected by divers, and so it's been a really successful pilot project. I'm not going to go into much more detail, but the REEF crew did a great presentation as part of the council's October seminar series last year. There's a link to this presentation, if you want to check it out.

Then, in addition to this work they were doing in the pilot, they also partnered with folks at Colorado State University to do a survey to kind of better understand the motivations and barriers to recreational divers in participating in the SMILE project, and so they'll be giving a presentation to you guys tomorrow on some of the findings from the survey, and kind of looking for input from you guys on how to kind of apply the survey, kind of the results, and apply it moving forward, and so that's kind of the project update.

Now I'm going to switch gears a little bit, and I wanted to also provide an update to you guys on some work we're doing kind of for strategic planning and evaluation for the program, and one of the reasons I was interested, and wanted to give you guys an update on this, is because this group has provided a lot of feedback over the past several meetings on kind of evaluation and things that we need to be thinking about when we want to kind of evaluate and kind of plan for growth within the program.

Our program has specific goals, objectives, and strategies, and what we do is we're kind of reviewing our activities under those goals, objectives, and strategies every five years, and so the first time we did this five-year review was in fall of 2024. We reviewed kind of the 2019 to 2024 time period.

If you're interested in learning more about that, there's a link here that can take you to a document to learn more, but, in addition to having those kind of five-year reviews, we were interested in having kind of indicators that we could monitor more regularly, kind of annually, that would help us better gauge kind of the program's progress, areas that we could improve upon, and then help us have kind of ways to measure and communicate program impact over time, and so the program has four goals.

The first one is really focused on building and sustaining a program. The second is really focused on the development of individual projects that meet South Atlantic-specific research needs. The third goal is all about data, that it's fit for purpose, that it's accessible, and the fourth goal is more about kind of collaboration and engagement, trust, learning, those sorts of things.

We worked with our kind of citizen science advisory panels, in particular our Operations Advisory Panel, to develop a few indicators under each goal. The council reviewed these and provided input last fall, in December, and so we're excited to share kind of the indicators that we're planning to kind of monitor regularly moving forward, and so this is just kind of a list of all of the indicators.

There are at least two under each goal. I'm going to quickly just run through the indicators and how we're measuring them. You guys provided wonderful feedback in helping us do this, and so I kind of wanted to come full circle, and come back to you guys and show you what kind of we've come up with, what our team and our advisory panels and the council have come up with. Just to make a note, things are kind of color-coded, and so you'll see kind of a goal in each corner of each of the indicators that kind of links you back to what program goal, or what kind of citizen science program goal, it links to.

The first indicator we have is under Goal 1, which is focused on the program, and it's that we want to make sure we have diverse perspectives kind of advising our citizen science program, and the way we're kind of measuring this metric is we're looking at kind of the number of individuals that are on each of our advisory panels or our ad hoc groups, as well as the type of organization they're from, and so is it industry, is it academic, is it federal, state, NGO, other, and so you can see here that we have kind of thirty-three folks on our advisory panels since the program began kind of in 2017, and fifty folks who've served on these ad hoc groups. You can see it's a pretty good spread between all the different organization types to try to kind of help us make sure we're bringing in diverse kind of perspectives as we kind of grow in the program over time.

The second indicator under the program goal is that we want to try to measure if the program is seen as a resource or as an example for others, and the way we're measuring this is looking at the number of invitations to kind of share -- That we have gotten to share information about the project, or about the program or projects, and so we're looking at like who is inviting us, and so who is interested in us sharing information, as well as kind of the activity type, and so is it a presentation, a panel, a workgroup, an interview, those sorts of things, and so, to-date, we've had kind of -- I guess I should say these go through the end of 2025, these counts, and we've had fifteen invitations, kind of from a mix of folks. The majority has been presentations, but it's been a little bit of lots of different kind of activity types.

Next is looking at Goal 2, and so this is the goal that's about projects, and so one thing we're measuring is kind of the number of projects, and we kind of have three completed projects. We worked with ACCSP and the North Carolina Division of Marine Fisheries to develop the SciFish mobile app, which Release is using to collect data.

We worked with the Southeast Fisheries Science Center, in particular Mandy Karnauskas and Matt McPherson, on the dolphin wahoo participatory workshops, and then we worked with Jennifer and her team of Tracy and Bryan, as well as Rick Bonney to kind of do some of this. They did the heavy lifting. We were just consultants, but to help collect some of that baseline information that's going to help us with program evaluation.

Then we have three ongoing projects, which you guys just heard about, Release, FISHstory, and SMILE. In addition to measuring the number of projects, we're interested in measuring the diversity of research priorities that are addressed through these projects, and so you guys may remember that we have -- The council has citizen-science-specific research priorities, and so our projects have covered three of these different research priorities, collecting information on discards, collecting historical information through photos, and then collecting information on some data-limited species.

Then we're also interested in trying to measure the diversity of fishery management plans that our projects are helping address data gaps in, and so, to-date, our projects have been helping fill data gaps for Snapper Grouper, Coastal Migratory Pelagics, and the Dolphin Wahoo FMPs.

Then a couple more project-specific indicators. This next one is looking at kind of proposal submissions that are done, either by or in collaboration with the citizen science program over time, and these are kind of grouped by different research priorities here, and then we're also tracking the number of external grants that the citizen science program has been able to bring in to help fund our both programmatic and project-related work.

Since 2019, we've been able to bring in about \$1.3 million to help us kind of fund the work that the program is doing, and then, in 2024, we were able to kind of finalize a memorandum of understanding with the Atlantic States Marine Fisheries Commission, which is going to provide more flexibility and kind of the opportunities we can apply for to help fund both programmatic and project work.

Then, switching gears to Goal 3, and so this is the goal focused on data, and so we're looking at kind of two indicators within this data goal, and the first one is that projects are considered for use and assessment and management, and then the next indicator is that projects are informative to future research, and so the way we're trying to track that is where we so far, to-date, have been looking to see when data have been kind of considered for use in stock assessments, or have been noted as a research recommendation kind of coming out of that stock assessment.

With SAFMC Release, the data were first presented when the project just was collecting information on scam, for the scam SEDAR 8 data workshop, and that was in 2020. The project started in June of 2019, and so we didn't have a lot of data that were available yet. However, it was included as a research recommendation to collect data through projects, citizen science projects, on kind of released fish.

Next, you already heard from Meg that the length data from Release was recommended for use in the SEDAR 90 assessment. It was also included in a research recommendation for FISHstory. Again, and we said this earlier as well, it was recommended for use in SEDAR 90. That was the first time these data had been presented at a stock assessment data workshop, and they were also included within the research recommendations, and then the SMILE project data were presented as part of the SEDAR 94 Florida hogfish assessment. SMILE is a pilot project, and so they didn't have a ton of data yet, and so that specific SMILE project link data wasn't recommended for use. It was included in the research recommendations.

However, another aspect of what we're trying to do in the program is help kind of bring other data, citizen-science-related data, to be considered for use, whether it's an assessment or management, and so REEF has a pretty incredible dataset called the Volunteer Fish Survey Project. Those data have been collected for decades, and so they were presented at the Florida hogfish assessment, and they were recommended to be combined with NMFS' roving visual census dive survey in an index that could be used for a sensitivity run in the assessment.

That's kind of what we're using to measure indicators for our Goal 3, and then Goal 4, and, again, this is the goal that's focused more on engagement and communication, trust, that sort of thing, and so the first indicator we're using is we're looking at the number of volunteers who have contributed to the project, and so we have just under kind of 5,000 folks who've been contributing to the project.

Then another way we're looking at this is we're looking at the diversity of ways a volunteer can engage with the program, and so we have folks that have helped with project development, data collection, data classification or analysis, as well as data validation, and so we want to make sure there's multiple ways that folks can participate within the program.

Another indicator under this kind of engagement goal is looking at partnerships over time, and so both the number of partners and the diversity of partners that have been contributing to the project, and so, again, you can see here, from 2019 on, we have thirty-three partners, and it's from a variety of different kind of organization types that have kind of been making really valuable contributions to the program.

We're also looking at the number and diversity of outreach activities, and so, since 2015, we've done over 100, I guess 155, activities, and they've ranged from presenting at scientific meetings to kind of collaborating on seminars with fishermen and tabling events and doing presentations and workshops and that sort of thing, and so, again, looking at both kind of the number and diversity of activities.

Then the last indicator is really trying to figure out a way to measure online reach, and so, to do that, we're looking at things like webpage views, and then we have started using a lot of QR codes on our outreach materials, in particular with Release, and so looking at QR code scans, and then also looking at some of our social media analytics to get an online reach, things like reach and likes and reactions and comments and that sort of a thing.

Again, this is a fire hose of information in a short period of time, but you guys were some of the ones that helped us develop these, and so I wanted to kind of bring them back to you, so you guys can see what we've done with all of kind of the feedback you've provided over a number of years, and so, with that, I'm happy to answer any questions, or I'm always happy to get feedback from you guys as well, but I really appreciate the opportunity to kind of share what's been going on with the program with all of you since your last meeting.

DR. SWEENEY-TOOKES: The program always does such great work, but hearing about it once a year makes it even more overwhelming. The amount of work that you do in the citizen science program is truly impressive. Thank you, both of you, for being here and explaining all of this. Questions, comments, anything you want to clarify? Yes, please, Kathi.

DR. KITNER: Yes, and, going back to the Release program that you talked about, do you have those submissions separated by location, and is it open to any type of fishing, or is it mostly recreational, et cetera, and then how do you categorize it?

MS. WITHERS: Yes, and so the Release project is open to recreational, for-hire, and commercial fishermen, and so, anyone who is fishing in the South Atlantic, if they want to contribute data, they are invited to, and we have location information on those submissions by state, and then, if folks want to submit more precise location information, they can, but they don't have to.

MS. BYRD: I guess another thing is the majority of submissions are from kind of charter or recreational, private recreational. That's the majority of submissions that we have, and it's also worth noting that, if people are sharing more specific latitude and longitude locations with us, whenever those are showed in a public setting, they'll be grouped, and so people's honey holes will stay private.

MS. PACKAGE-WARD: I guess I just wanted to say congratulations on this incredible body of work. Like you can tell you all have done a lot to get this going, and it's amazing, and I was just wondering, like as far as your goals, the program goals, and monitoring, whether you've met them, and you were talking about whether something had been considered for use under the data element, and, I mean, is there a way to know whether it's actually been used? I mean, but it would be great to note that too, because I think that adds a lot of support to all of this work.

MS. BYRD: Yes, and I'll say that's a great point, Christina, and something that a council member brought up as well in December when we were sharing the indicators with them. The reason we did considered for use kind of within the indicator that we're regularly monitoring is because that's what we can control. Our job is to kind of work to collect the data, and then define the on-ramps, so that it can be considered for use, and so having the decision about the data being used is, a lot of times, out of our control, and it's other folks' decision, but that's definitely something that we are monitoring and are planning to share as well.

DR. SWEENEY-TOOKES: Jason.

MR. WALSH: Awesome. Thanks again for this. I love seeing these updates. I think I've expressed before that I'm a little worried about the photo FISHstory data being like upward biased, because the pictures that would be taken in the first place, and the pictures that would, you know, survive through someone's documents over time might be upward biased, but on, I think it was slide 14 or something, where you showed the distribution of lengths from the 1970s, 1960s, and 1950s, they didn't see -- In that, you don't see like the distribution shifting larger over those decades, and so maybe I'm less concerned now, but I still have some concerns that those numbers are biased upwards a little bit just from, you know, people's photo behavior.

MS. BYRD: Yes, and, I mean, I think that that is a concern, and that's, you know, something that other folks have noted too, and, you know, what I can say is so the photos that we're including in this analysis are photos taken at the end of trips, where hopefully the whole harvested catch is displayed, and so it's not - We typically have not used like a photo of one person with one really big fish, and so trying to capture the breadth of what was caught on that trip by who caught them.

Then I can also say, just from looking at the photos that we have in the archive so far, is there a lot of -- There are photos where you see really small fish, and there's photos where you see really large fish, and there are photos where you see a lot of fish, and there are photos where you don't see that many fish, and so, I mean, I think, at least in the archive we have right now, we're trying to account for that just in what's included, and I guess in how we're trying to kind of get more photos, but I think that's something that's always going to be good to note and think about, particularly as we grow the archive, and the photos may not be exactly the types of ones that we have now, and figure out how to try to kind of account for that or kind of note what -- If there is a bias, what it is, so people can account for that.

DR. SWEENEY-TOOKES: Any questions or comments on -- Kathi first, and then anyone online.

DR. KITNER: Sorry. With the FISHstory, what -- Do you have a cutoff date for the end, like where you collect photos up to?

MS. BYRD: Yes, and so it's a little bit of a loose cutoff date, but so, in the South Atlantic, the headboat survey, headboat logbook survey, Southeast Regional Headboat Survey, started in kind of the mid to late 1970s, depending on where you were kind of in the South Atlantic, and so the idea is we want to make sure that we have photos from a time period that try to overlap that, so we have kind of previous to that, but then, also, we -- You know, ten or so years, ideally probably, where we have an overlap.

Another thing that the folks at NC State are trying to do is exploring whether these data can be developed into kind of a relative index of abundance, and, if so, there would be a way to look at what the photos are providing, and then look at what kind of the headboat logbook survey was, to see if there's -- Are they showing the same things, and is there a way to calibrate that sort of thing, and so, when we're collecting data, it's normally through the 1980s and early 1990s, is kind of mainly what we're focusing on, is before that. Does that make sense?

DR. SWEENEY-TOOKES: Any other questions or comments online or in the room? Jason, are you --

MR. WALSH: I've got one more. As someone in North Carolina, I'm very interested in why, who and why, people -- Or who the people are and why they're participating in like self-reporting stuff, like this Release activity, and so I guess I was wondering if there's anything that you guys have learned in the last year about the reporting tool or things that people particularly like, or particularly dislike, and I know it's kind of a general big question, but any insight would be very helpful.

MS. WITHERS: So I think, in terms of, you know, what people like, and what they don't like, and I should preface this by saying a lot of this is just kind of through conversations with folks, and so I haven't necessarily, I mean, kind of collected this in a formal format, but folks like that the app is very simple to use, and I think we have a lot -- We should credit the folks who helped us make this app, and probably also, in particular, the fishermen who told us, you know, this is how you should kind of structure it to make it user-friendly. Then I think we've built relationships with participants, and that is one of the key things that has really made a difference, in terms of just engagement with the project, is being able to build those relationships.

I haven't heard anything in particular about what people don't like, and that's probably because people are being kind. I'm sure there is something that could be more user-friendly, but, if there's a problem, we fix it, that kind of thing, and then, in terms of like why people initially kind of come to the project, one of the things that I've heard probably most consistently is just this desire to help fill these data gaps.

You know, someone is like I'm releasing this fish, and I want to do something useful with it, kind of in terms of submitting this information, and that's how they kind of want to approach that, and so being able to provide information is really valuable to them, and then when we started providing, you know, more formal recognition, through our Participant Recognition Program, and Sea Grant started providing thank-you packets, I got a lot of responses of thank you so much for this item, or thank you Sea Grant for this packet, and I would have done it anyway, because I just wanted to provide this information. I'm sure I am missing some things, and so, Julia, if you have additional thoughts.

MS. BYRD: I was going to say I think Meg does a great like data summary at the end of -- People, at least some of the people who are -- So there's, you know, like super volunteers, and then like people who come and go less frequently, and I would say, at least among our super volunteers, a motivation is seeing the data that are collected, and so Meg does a great annual data summary at the end of the year, and then I think, also, one of the things we heard in this project, and when we started the program, is like we need to close the cycle.

The fishermen want to know are those data being considered for use, and, if so, how and when, you know, that sort of thing, and so trying to make sure we're kind of giving that kind of feedback loop with them, and I think kind of that seems to be a big motivator.

I'll also say Nick Smilie, who is the digital communications -- I'm going to butcher his full -- He works for the council, right, and so he started -- He was a College of Charleston graduate student who worked with the Release project, and did some interviews with fishermen who were participating, and, you know, was able to gather some of this information, but the council is really limited on being able to do surveys and that kind of thing, and so I think it would be a wonderful partnership if we might be able to find someone else, who may not have the same limitations we have, in helping kind of do a more formal survey, and so, instead of kind of anecdotal information that we're diligently tracking over time, it could be kind of -- We could ask these sort of questions in a more kind of formal fashion.

DR. SWEENEY-TOOKES: Thank you. Other questions? Christina.

MS. PACKAGE-WARD: I guess, kind of building off of what Jason was just asking, and I can't remember whether you all, as part of the Release program, ask anything about the identity of those that are responding, like any demographic information.

MS. WITHERS: We do not ask any demographic information. When someone signs up for the project, they just kind of provide basic contact information. They can tell us where they heard about the project, and then, through the course of interacting -- Sorry.

MS. BYRD: I was going to say that we collect sector. They tell us what sector they identify with.

MS. WITHERS: Thank you.

MS. BYRD: They tell us kind of city and state kind of information. It's real basic information, but some general demographic information.

MS. WITHERS: Thank you. Sorry, and I interpreted demographic in a different way.

MS. BYRD: I should also note that Release, all of our citizen science projects that were kind of presented today, Release, SMILE, and FISHstory, are covered under kind of NOAA Fisheries kind of citizen science blanket PRA.

MR. WALSH: Awesome, and I one more follow-up. I probably could or should have known this, but is -- Do users have like an account where they can track their own releases? Like does it store where you can look back and see that, oh, I released whatever, this many gag on this day, or anything like that?

MS. WITHERS: Yes, it does. It stores their own entries, and so it's a little bit like a diary for them, which is what some folks have also cited as a benefit of the app, is being able to go back and look at it, yes.

DR. SWEENEY-TOOKES: I see no other hands in the room. I have not heard that there are any hands online, and so I do believe that wraps up the citizen science portion. Thank you so much, Julia and Meg, for being here and all your good work.

MS. WITHERS: Thank you. I appreciate the questions.

IMPROVING COMMUNICATION WITH AND INCREASING RESILIENCE OF FISHING COMMUNITIES IN THE SOUTH ATLANTIC REGION PROJECT INTRODUCTION

DR. SWEENEY-TOOKES: Absolutely, and so next up is actually me. I will be giving a very, very high-level overview of a very new project that is just going to be starting soon, and so let's pause for a moment to wait for technology.

DR. COLLIER: This communities project is one of many projects that we have related to climate-resilient fisheries that we have going on in the South Atlantic. These were, and are, part of our IRA portfolio that we put together, and this one is the one that's probably mainly focused on social and economic issues, and trying to address some community issues that have been identified by staff, as well as the SEP and NMFS staff over time.

What we're hoping is we're going to get a very good project from the project team. I think we do have some superstars in the South Atlantic region that can help us fill some of these gaps that we have, and it looks like I need to keep talking a little bit more.

The timeline for these projects, it's a pretty aggressive timeline. We were hoping to get this started a while ago. Unfortunately, we couldn't get it started until more recently, and so they are going to

be working on an accelerated timeline in order to get this all done, but hopefully we'll get it done. It has to be done in 2027.

DR. SWEENEY-TOOKES: Thank you very much, Chip, and so we will take a break very shortly. I am tasked with explaining a project that is actually headed up by Ed Camp of the University of Florida. Ed is currently on sabbatical in New Zealand, but I believe he's on the line to answer all of the really hard questions, and so thank you so much for that introduction, Chip. I appreciate it, and to Ed for being here at what is probably the crack of dawn in New Zealand right now.

This is a very brief overview of a pair of projects that, as Chip said, we're calling the Fishing Communities Projects, Phases 1 and 2. Please do not be fooled. They will be simultaneous phases happening at the same time, but we are ready to start these imminently. They are -- Of course, we're still waiting for contracting technicalities to wrap up between the University of Florida and the council, but we just wanted to sort of tell SEP what is going to be happening, give a very quick overview of the goals, the objectives, the approaches, and then how we'll be coming back to you hopefully to get more feedback soon.

The main point of all of these projects is really to improve the council's, SAFMC's, engagement with fishing communities, and, of course, here, we're defining communities very, very broadly, people who fish, who care about fishing, who are involved in fishing of any sector across the entire region, and communities. We're going to negotiate what that means exactly, but possibly groups by area, possibly type of fishing, possibly other things that we dig into as we get into this project, but we are also defining a term of engagement here, right, and so this is about increasing the council's capacity to engage effectively with fishing communities.

When we talk about engagement here, we're talking about the sum of two-way communication, right, both the materials that go out to communities via outreach from council, whether this is information or materials or actions, but also taking in information from these communities, being able to solicit and integrate input from those communities into management decisions in a systematic way, we hope, but at least to be able to gather it in a systematic way.

We have sort of a very rough model of these projects. The background is that we are a crew of people who care deeply about this region and fishing communities and fisheries in this region, and I think our creds are all up at the end, but we have, all of us, been involved in a variety of projects across the entire region for very long time now, and so it was really a chance for us to all come together and to bring all of those varied perspectives and disciplines into this particular work.

I think we have some of the lists up there, working with social vulnerability indicators, things like the CitSci project that Julia just mentioned, but also ongoing work that all of us have been part of, either as academics or as federal agencies or cooperative agencies or state agencies or extension agencies, for a really crazy long time now.

In a nutshell, what we will do is to set out to identify -- To summarize and to organize and to operationalize the existing information. There is so much out there. Even in the process of writing this proposal, each of us was saying, well, you know about this, right, and the other people saying, no, and how did I not know about this, and kept surprising each other with what information existed out there, and so, in a nutshell, pulling this together in some sort of way to operationalize the existing information, so that we can then actually identify what gaps do exist between what

information we have, what is needed to help prioritize the best ways, and then moving forward for the council to help fill these gaps, and, by best, a big asterisk there, and we mean most achievable, greatest impact, of course, with limited time and money as always, and so setting out really to summarize and prioritize those needs, to add the information, and then create the tools to help enhance practical capacity to better engage with fishing communities.

Phase 1, and so what are we actually doing? Well, Phase 1, which, again, will be simultaneous with Phase 2, will be first to put together -- Well, there's four deliverables, in essence. You know, first, we're setting out to review the past work, identify the gaps, fill the gaps, especially working through partnering entities, and so Sea Grant, co-ops, extensions, state agencies that have a lot of connection to fishing communities. We need to stop reinventing the wheel. We need to look around and see who is already doing good work and what work has been done.

Secondly, to organize all that information into a database that can be quickly accessed to reveal relevant community information. For example, if we want to know when actions are being considered that will affect certain communities, then we need to quickly understand what we know and we don't know about those communities.

Thirdly, to create outreach products, and this will be really -- We're just throwing ideas out there right now, but this is very much a work in progress, and we'll be looking for feedback from multiple entities on what those outreach products look like, and then, fourthly, assessing the council's social data use and engagement, what processes, what information about communities is being brought to bear on council decisions. These, again, are not necessarily in chronological order.

We'll probably be doing Number 4 and Number 1 at the same time, maybe followed by Number 2, but, really, sort of trying to integrate all of them to guide the outreach products and the design of the database.

I have the same notes for Phase 2, and so Phase 2 will be translating all of that information from Phase 1 to address those gaps, to look at the differences between what we think is being communicated and what is actually being heard by communities and what are the places in which council can most easily fill some of those gaps.

Secondly, there will be an actual detailed communication plan being developed, and with specific steps that we believe will be, and we will collaborate with, to make sure are detailed and possible, practical, pragmatic. There will be a creation of an online communications hub, and we're looking here at tools that can be used to support this communication plan moving forward, and so things like updatable files, emails in which new information can be inserted and easily sent out, developing training materials here to make sure that all of these products, these plans, these hubs can be readily used, that are easy. Then, lastly, working to create long-lasting connections between council members and communities, probably most likely through existing partners and existing agencies.

All of this will be happening sort of in this iterative hand-in-hand process with the council and council staff. You know, we have these sort of marching orders of what is desired, and we have a proposal, and then we have the reality of a year or so and some really big ideas, and so really looking to make sure that the work that we do is going to be useful and appropriate to the council

that we can continually revise these plans, and, when I say “council”, I'm sorry, and I do mean council staff.

I apologize that I'm not saying that correctly, but the ultimate goal is to start this very soon, and then, as Chip was saying, we need to wrap this up in 2027, and so I apologize for -- I mean, council and council staff, endlessly, but, yes, you can see, at the end here, we have a really impressive team.

I am sorry team, if I'm not representing this well, and there are a lot of folks working on this, and so we don't have a lot of solid questions to ask you for feedback on now, but we are starting this project imminently, and would very much like to come back to the SEP with now some concrete plans of what we are going to do and ask for your feedback before we do those things, and then ask for feedback further along in the process as well, and so, Ed, would you like to add anything, sir?

DR. CAMP: Am I allowed to talk here?

DR. SWEENEY-TOOKES: Please do. Please do.

DR. CAMP: I apologize, and I was also -- That was the awkward check to see if the sound worked. I think, when I joined, it said I was in listener-only mode, but someone probably kindly switched me. Jennifer, I thought that was a really great project overview. Thank you for doing that. Thank you for letting us talk about this project, and we hope to get it contracted soon. I don't have anything else that I feel like we need to add, but I am here if there are people who have questions.

DR. SWEENEY-TOOKES: Thank you, sir. Questions, comments, things you want to make sure we don't mess up? Chip has something to say.

DR. COLLIER: Well, and I definitely appreciate that you all want to get comments and feedback from the SEP, but this timeline, as aggressive as it is, it could be an extreme challenge with your annual meeting, in order to get meaningful feedback, and so we might have to get feedback from the SEP through email or a webinar approach, and so just trying to make sure everybody is aware that this is not going to be coming back to you in a year, because that would be unfair to the team to say, all right, change your methods now that you're almost done with your project.

DR. SWEENEY-TOOKES: Thank you very much, and I think the webinar idea is a great one, Chip. Thank you. Christina.

MS. PACKAGE-WARD: I guess -- So I think NMFS has like a couple efforts that sort of overlap with this. We have an infrastructure project going on, a national infrastructure project, compiling existing infrastructure data, and then also are doing some social indicators work to consider revising those indicators, and in that are examining the scale of what a fishing community is, and looking at the past literature for that, and so like I see a lot of things as overlapping with the awesome work that you all are going to do, but I would love for all of us to be able to, like you said, not reinvent the wheel, but kind of like build on what each other are doing in those efforts.

DR. SWEENEY-TOOKES: That's awesome. Thank you. Thank you very much. Mike Jepson you saw is on the team, and so he was sort of key in the original ones, but we will be splitting into

sort of sub-teams for some meetings at some point, and I may have hinted to you a month ago that I'm very much going to be calling on you, to sit down and pick your brain before we start trying to invent a wheel. Thank you. Other questions, comments, warnings, tips, hints? All right. I know it wasn't a lot to work with. Ed, thank you so much for being awake. I'll let you know if there's any follow-up after we've all re-cafeinated.

DR. CAMP: Great. Thank you very much.

MR. WALSH: I was just going to say something along the same lines as Christina, but like also reaching out to different state agencies might be helpful in this process. You probably already thought of that, but I know you guys have a lot of Florida folks, and Georgia it looks like, and you could reach out to other states, and this might be helpful.

DR. SWEENEY-TOOKES: Thank you, Jason. Very much so, and you're right that we are Georgia and Florida heavy, and so I would love any suggestions from you as to specific agencies, or specific peoples, to reach out to other than just reaching out to everyone we can think of. Thank you. All right. With that, we're going to take a short break, about ten minutes or so, to grab some coffee, get a cookie, and we will come back. Let's start at three o'clock sharp. Great. Three o'clock, please.

(Whereupon, a recess was taken.)

DR. SWEENEY-TOOKES: It is three o'clock, and so, in the interest of staying on track, we will go ahead and pick back up. We have had a brief discussion, and we do need to make some changes to the agenda this afternoon, and so, just to give everyone a heads-up, all of the risk-value matrix materials will happen tomorrow.

Those are being moved, and so, for those of you following along at home, that means we're going to go to Agenda Item Number 5, which is Snapper Grouper Management Strategy Evaluation Economics, and then we'll be hearing from John Hadley for that, which will be followed by Christina talking us through the Introduction of Social Science and Economics for Fishermen, and we will wrap up with Chip giving us a preview of the risk-value matrix for what we'll be hearing in-depth tomorrow morning.

Let me take a moment to just mention notes. I did send out a spreadsheet on notes assignments. I did duplicate, and so many people are on several of those items. The method to my madness is when everyone on the SEP, except for a few of us, goes home tomorrow, and the rest of us go to the SSC, and, the very next day, I need to present to SSC what information we decided at the SEP here, and so it is a quick turnaround. The SSC chair is confirming this from over there, and thank you, and so it is a very quick turnaround.

What that means is things that summarize the material that's being covered are hugely helpful. I'm sorry. Things that summarize the material that was covered are not hugely helpful, not at all, and please don't do that. I'm sorry. We have all of those materials, and so there is no need to summarize anything that's presented to us in your notes. What is hugely helpful is to note the SEP had questions about, the SEP is concerned about, the SEP recommends, really the big takeaways.

John and Christina have very kindly been taking notes on these first few items, and so there was no one assigned to those, because those were low-note-taking efforts. Everything from this point on has assigned discussion questions, and so, if you are assigned to the notes for that section, I would greatly appreciate you, you know, doing that mental labor of what has been said here, and let me summarize that, rather than giving a stream of consciousness.

You do not need to record everything that's said, but summarizing those into short paragraphs, or a few sentences, would be wonderful, and the me who has to give the SEP report to the SSC will be very grateful to you when that happens. Does that make sense? Any questions on that? Okay, and so you'll notice, if there are four of you assigned to a topic, will there be duplication? Absolutely. In a perfect world, it will be all the same. In reality, it probably won't be, but that's fine.

I just appreciate you taking the notes, and so, if we could please do that during our SEP meeting, and not when everyone goes home, that would be great. Thanks so much, you all. I appreciate you being here and doing that. So, with that, I feel like I can take off my professor hat now. Sorry, and it's been a long semester. With that being said, I will now turn everything over to John to talk to us about the snapper grouper MSE.

SNAPPER GROUPE MANAGEMENT STRATEGY EVALUATION ECONOMICS

MR. HADLEY: All right. Thank you, and so I'm going to kind of present the overview of this project. I'm happy to answer any questions on the econ side. If we have some, I guess, modeling, or MSE in-depth questions, I might ask for Chip's help on that, but we'll see where the discussion leads us, but, generally speaking, this is a project that we're hoping to complete.

We have some results from the management strategy evaluation, and so we're really at the very early stages of trying to add an economic component to that, and so, you know, everything is very malleable at this point, and so it's sort of -- A lot of it, you know, is intended to be a brainstorming discussion with the SEP to gather some feedback, gather any ideas, but, generally speaking, I'll go over what the staff hopes to get out of the discussion, and I'll provide some background information on the management strategy evaluation of the snapper grouper fishery.

We'll go over some general plan methodology, application of willingness to pay estimates, trying to figure out how to apply an economic -- Get at the net economic benefits of the various management scenarios, acknowledge some of the challenges that we're likely to run into, and then turn it over for questions, and so two question sessions, one for me from the SEP, and then we have some discussion questions for the SEP at the very end.

Generally speaking, what we're hoping to get out of this discussion today is, as I mentioned, sort of a brainstorming session, a feedback session, and so keeping in mind that the economic analysis is very early in the development, and so we're still very much in the planning stage, and so you can kind of think of it as like it's playdough or something, and you can mold it how -- We're still at the stage where we can mold it how we see fit on the econ side.

The idea is to help staff further calibrate the methodology, point out additional potential pitfalls to consider, and potentially how they could be addressed or overcome, and identify additional sources of information that could be incorporated into the analysis, if you happen to know of any.

As a little bit of background, the management strategy evaluation for the snapper grouper fishery has been ongoing for a while. It's been an effort on the part of the council, council staff, and contractors from Blue Matter Science. Blue Matter Science is the one that's doing the kind of heavy lifting, so to speak, on the modeling front, and so this really -- It's focusing on the recreational portion of the snapper grouper fishery, and the idea is to concentrate on strategies to reduce the number of released fish, and particularly get at reducing the number of released fish that don't survive release, and so dead discards, and that's kind of the ongoing issue of the fishery.

The idea is to improve yield through the fishery, and then also weighing the different needed outcomes in the fishery, and so sort of the need to access the fishery and resource, while also keeping in mind that we're rebuilding overfished stocks, and we need to prevent overfishing, and so, initially, this effort has focused on red snapper, gag, black sea bass, and potentially adding in other species, and so not looking at the entire suite of fifty-five species necessarily, and trying to get at some of those driver species, ones that we have an assessment for, ones that hopefully we have some economic benefit estimates for, and what sort of -- You know, what are the key drivers, driver species, of the recreational fishery.

Really focusing on those three, and so gag, red snapper and black sea bass, at least in this discussion, and potentially adding others down the line, and so the council direction to this point has been to evaluate the really theoretical implementation, and so this is a modeling exercise, of aggregate bag limits, mandatory stopping, where, once the bag limit is filled, that would lead to a change in fishing effort geared away from snapper grouper species, and so anglers can stop bottom fishing, and maybe go trolling or target some other group of species, and then potentially seasonal management, and so implementing a fishing season, and then also spatial management, and so that's the idea of closed and open areas.

These are the measures that are being modeled for the recreational fishery specifically, and so what did the modeling outputs look like? On the right there is sort of an example, and I'm keeping this generic on purpose, and it's not necessarily -- You know, the idea is not to focus on a specific species at this time, but, generally speaking, the modeling results provide projections of landed and discarded fish, and so you have potentially the number of fish that will be landed under various managed -- Under a given management scenario and the number of fish that will be discarded, and, from that discard stream, you can apply a mortality estimate to get the number of dead discards, and so managing the various changes of the recreational sector.

Since we have that output stream of the number of fish that are harvested, the number of fish that are discarded, the number of fish that are likely not to survive release, we can start to apply economic value estimates for harvest and discards to get at the potential estimate of net economic benefits for the different management options, and the goal here is to allow the council to sort of evaluate some of the tradeoffs and compare and contrast, if you will, some of the modeled management scenarios.

As far as general methods, it's pretty simplistic, but, generally speaking, trying to get the net economic benefits of the modeled action would be the consumer surplus, or economic benefit of

fish harvested, plus the economic benefit of fish released, and so those are your two benefit streams, and then you have your costs, so to speak, and so minus the value of fish that do not survive release, and so those dead discards are not available to be caught again in the fishery, and, thus, potential economic benefits that could be derived from those fish, had they survived, or had they not been caught, are removed, and so that's sort of a kind of -- Kind of think of that as a loss to the fishery.

Once we have this stream of fish, numbers of fish, so to speak, and so the numbers of fish that are harvested and numbers of fish that are released, we need to think about how do we apply a dollar value to that, and so there are some estimates for the economic benefit of fish that are harvested as well as released. We use Carter and Liese, the 2012, quite a bit in our analysis of fishery management actions, and so, as you can see there, there are a few values that are circled. This is a table from that paper.

Generally speaking, thinking about applying the marginal willingness to pay for a second fish kept for gag and red snapper, since they have very low bag limits, and so going with that second-fish-kept estimate, and so, up there, the estimated marginal willingness to pay for a grouper that is kept, the second fish, is \$80.40 cents. We adjust that for inflation, of course, but that's where we're going with that for gag and red snapper.

Then, as far as releases, as we kind of get to releases, and then we get into dead discards, this is where things get to be a little bit more tricky, and you kind of have to use some informed judgment, if you will, and maybe apply a sensitivity analysis of sorts, but we can get into that discussion. There's a question on that towards the end, but as of now, thinking about applying the marginal willingness to pay estimate for the fourth-released fish for these two species, since this is a midpoint estimate, a base, and it's between the second and sixth fish in this -- At least in the results provided in this paper, and so it's a midpoint, and it's unknown how many fish would be released on a trip.

These are -- Again, these are modeled trips. These are modeled fish, and so applying an average of release minimum size and release bag limit would be -- Is being considered, since, there again, these are modeled fish, and the reason for the theoretical release in the MSE will likely be unknown, and so we don't necessarily know how many fish would be released due to the minimum size limit, and we don't necessarily know how many fish would be released due to the bag limit. We just know that these fish are being released, at least in the modeling scenario.

Moving over to black sea bass, as you'll see here, this paper covers grouper, red snapper, and then dolphin and king mackerel. Notably absent are black sea bass, and notably absent, at least in the literature that we have available for the Southeast, at least as far as staff knows, is an estimate specifically for black sea bass. However, we have, and when I say "we", both the agency and council staff have used proxy values from other studies.

This table here is from Haab et al. 2010, and there isn't a direct estimate, or an economic benefit estimate, willingness to pay estimate, for black sea bass, but there is an estimate for generic snapper, if you will, and so what's circled there at the bottom-right of the screen could be used sort of as a proxy estimate for black sea bass. The idea here is the generic snapper would be a smaller panfish size, which, you know, similar attributes are present for black sea bass as well, and so that would be likely a good proxy estimate for harvested black sea bass.

In this case, using this paper, it examined several different models, in this case using the finite mixture model, because, as the paper notes, it takes into account variation in preferences of fishermen and had the best prediction rates between the four models, and so, generally speaking, still -- You know, we have a proxy estimate for harvested black sea bass. We do not have a proxy estimate necessarily for released black sea bass in this case, and so still thinking about how to apply a dollar value to released black sea bass.

The application of consumer surplus, or estimating economic benefits for harvested fish, you can see there what's circled, and that's your landing stream, so to speak, that comes out of the MSE modeling effort, and so you can take the estimated -- You can get the estimated economic benefit from harvest by multiplying the number of fish times the marginal consumer surplus estimate, and so whatever that dollar value is.

In this case for red snapper, again, we would be using inflation-adjusted willingness to pay estimates from Carter and Liese 2012, and then, for black sea bass, inflation-adjusted estimates from Haab et al. 2010 for those species, or for that species, I should say.

We covered the estimating the benefits from harvest, and so switching gears over to discards, and, again, as we get into discards, that gets a little bit more tricky, and, you know, I have the total number of removals there. I believe the model can produce specifically releases. However, it's based on removals, and so, if we have removals and landings, we can estimate releases, and so that's not terribly -- That's not a showstopper, so to speak, but, to estimate the benefit of discards, we can take the number, and so these are fish that are caught and released.

We can use the number of fish released, and so, in this case, using that stream, removals minus landings times a consumer surplus estimate, and so an economic benefits estimate for a fish that is caught and released. Again, this is provided -- This information is provided for gag and red snapper in Carter and Liese 2012. However, we do not -- As noted, we do not necessarily have an estimate for black sea bass, and so we still need to gather information on that, and that's one of the questions that we'll kind of post to the SEP, to see if you had any feedback on the black -- On releases of black sea bass and trying to value those releases.

Then last, but not least, thinking about what to do with dead discards, and how to put a dollar value to those fish, and so, you know, you can -- From a theoretical perspective, we can -- We could come up with an estimated cost by multiplying the number of fish times the discard mortality rate, and so number of fish released rather times the discard mortality rate, and so that would be the number of fish that died, essentially, after released, did not survive release, and then we need to apply some sort of economic benefit estimate to that, and so this one is probably the most tricky.

We do not know whether a dead -- You know, for example, the small juvenile red snapper there in the picture, we're going to pretend like it didn't make it upon release. There was a benefit from catching it. You know, the angler may have, you know, gotten enjoyment out of catching the fish, but, unfortunately, you know, it had to be put back, and it didn't survive, and so, you know, how do you, how do you value that fish?

If it was -- You know, in theory, if it had survived, and it was caught tomorrow, it would just be another discard. If it had survived, and it was caught in two or three years during red snapper

season, hey, that could have been a harvest, and so, given the disparity in the economic benefit of harvest, versus the economic benefit of catching and releasing a red snapper, you know, how do we put a dollar value on that? We're initially thinking of using an average of the willingness to pay for harvest and discard, sort of a midpoint estimate, to estimate the cost of dead discards.

That's a general overview of kind of how we're thinking about addressing this, and then, you know, since -- I'll go back a couple of slides really quickly. As you can see there, those landing streams are over several decades, and so you're going to have essentially a benefit stream, and cost stream, that applies over several decades.

In this case, discounting future benefits and costs will be likely appropriate, and so, when council staff, or a lot of times agency staff, are conducting benefit-cost analysis in the fishery management plan amendments, we'll use a 3 -- We'll kind of use a sensitivity analysis of sorts, and so apply both the 3 percent and 7 percent discount rate, which is based on guidance provided by the Office of Management and Budget.

So, you know, you have the higher-end rate, which is looking at sort of the pre-tax return on private capital, and so you can kind of think of that as a private sector discount rate of sorts, and a 3 percent rate represents the social rate of time preference, sort of a social -- More of a societal view of a discount rate, or a more applicable discount rate from a societal perspective.

As far as the known challenges and shortcomings, there's going to be several in this. However, I'll get to that at the end. I think there are ways to, you know, acknowledge it, but some of these challenges can be potentially overcome through a sensitivity analysis of sorts, but, generally speaking, the benefit, or consumer surplus estimates, are static, and they do not change as more or fewer fish become available to the fishery.

We just don't necessarily have the information available to estimate a demand curve that would allow for a dynamic consumer surplus estimate as the supply, so to speak, of fish changes, and so, if the biomass rebuilds, you have more fish available. In theory, the value of those fish, the marginal value, would decrease, since there's more supply, but we just don't have a great way to estimate that, and so that's a known challenge, one that's certainly acknowledged.

There's certainly going to be some uncertainty, for multiple reasons. There's modeling uncertainty in the MSE, and there's some uncertainty in the values applied to harvest and discarded fish, and then, finally, you know, how do we estimate benefits when species-specific information is not available, and so, as mentioned earlier, we're probably going to be looking at a proxy estimate for black sea bass harvest, and we're probably going to be looking at other proxy estimates for releases, and potentially for other species, and so this applies to both catches and discards, and it potentially applies to other species that may be added into the MSE modeling efforts, but we still need to find a way to address these discards overall.

What's the ideal outcome? Assuming this exercise is a success, what are we hoping the council gets out of this, and so the idea here is to provide a way to compare the estimated net economic benefits of the various management scenarios in the MSE across species, and so, there again, try to get out of this siloed approach of looking at these management changes on a species-by-species basis, because this is a multispecies fishery, and you can see an example there on the right.

That's a picture, and that's a single drop, two different species that are cohabitating, with two different species in the complex, black sea bass and red snapper, and they're living in the same spot, and you see that quite a bit in this fishery, and so it makes sense to try, when possible, to get out of the siloed approach and look at it from a multispecies perspective, and also, ideally, if this is a successful exercise, assess tradeoffs between management options and between the species. With that, so that's the general overview, and I'm happy to field any questions from the SEP, and then, as mentioned, we do have several discussion questions for the SEP.

DR. SWEENEY-TOOKES: Thank you, John. Appreciate that. Questions for John, clarifying questions, follow-up questions? Kevin.

DR. HUNT: You know, I did a study that looked at expenditures, and we used the Consumer Price Index, twenty years apart from trip costs, to see how well expenditures followed the Consumer Price Index, and it was pretty spot on. However, willingness to pay wasn't, and I just -- You know, it's the best available data we have in 2012, but the fisheries fluctuate. If the fisheries are poorer now, it's not going to reflect the current willingness to pay, and so how can you guys take that into account, because, you know, in the study I did, you know, we are expecting willingness to pay was going to be down after twenty years, just because the fishery was declining, and it was an inland lake, but it was exorbitantly higher than it was twenty years before, because of the clientele of the fishery there, and so how do you grapple with that?

DR. HADLEY: Yes, and, I mean, that's a good point, and that's something that we run into every day with trying to -- It's best available science, unfortunately, and I wish it was updated more often, but, you know, some of these willingness to pay estimates are -- They're difficult to get at, and they're expensive. You know, it can be a pretty large undertaking.

You know, acknowledging that the estimates that we'll be using are dated, perhaps we can see -- You know, have a sensitivity analysis and double them, and see if it changes the outcome, because that's one thing -- You know, thinking about this, we're -- We don't, and I get to this in one of the questions, but, you know, we don't need the perfect estimate.

We just need an estimate that shows a valid contrast between the different management scenarios, because that really shows, you know, what the tradeoffs may be between the different scenarios and just to help the council in their decision-making, and so maybe we can increase by 20 percent, double it, and see if it changes the outcome, and I don't know, but, if it doesn't, then maybe we can say, okay, it's not necessarily sensitive to these potentially outdated estimates.

DR. SWEENEY-TOOKES: Chip.

DR. COLLIER: Just to build on that a little bit more, do you think -- Like if the -- You had mentioned population size might impact willingness to pay, and so are there situations where we should change the willingness to pay based on the condition of the stock, and so, if a stock seems like it has crashed, should we -- What should we do to the willingness to pay? Should we increase it or decrease it? John will know more, but, if you have some ideas on how to treat that, I think that would help us as well.

DR. HUNT: You know, I don't know if you would -- If you have an answer to that, because a lower population could actually increase the willingness to pay, because they're doing it, or it could

say, hey, the fishery is horrible and decrease it, and so, you know, I guess can you build it in with the biological modeling that tells you what the population size, and then maybe do a sensitivity analysis that said, if willingness to pay tanked under this scenario, it would be this. If it doubled, because of the scarcity situation, it would be this, but I -- It's just tricky, because I don't think it will follow -- Like expenditures are just going to go up by 4 percent every year, and I don't know if willingness to pay has that linear, you know, illustration to it.

DR. SWEENEY-TOOKES: If I could add to that, Kevin's question made me really sit and think about asking a willingness to pay question in the world that was 2012, versus willingness to pay questions in the world that is 2026. I mean, people's thinking about what they're willing to pay is not a purely rational economic choice, right, and so now I am wondering if we're talking about apples and waterfalls.

MR. HADLEY: On that note, again, the Southeast region-specific estimates are for -- Depending on the species, they can be few and far between, but maybe looking at, you know, revealed preference estimates, versus stated preference estimates, could -- You know, if that information is available, look at that and see if there's a difference, and that could get at maybe the concern you just stated, which certainly, you know, that's something to consider.

DR. COLLIER: So I am concerned about trying to get to all the different scenarios, right? If you say that the population is at a low level that it becomes more valuable, or if it's at -- Or it becomes less valuable if it's at a low level, then you're covering all the range, and you're not necessarily doing much in forming up the model, but I guess we could run the scenarios and just see how it responds, and, right now, I'm thinking of a stanza approach, right? If it gets below a certain level, then it becomes less, but maybe we could do more of a modeled approach, and I don't know. I have to think about it more.

MR. HADLEY: Yes, and it's a tricky one. I mean, angler preferences change by the year. They can -- You know, Kevin, as you noted, you know, it can go either way. If the population goes up, and fishing gets really good, and it gets really popular, that's like the species, and people are going to put a lot of value on that, and so it can -- You know, the way that the anglers value the species, it can vary, and, you know, scarcity doesn't always go the -- It doesn't affect the valuation the way you may think.

Maybe, you know, and I'm looking at Chip here, but maybe we can try to build that assumption, you know, either way into the modeling, and see if it changes the relative outcome, and so, you know, comparing it across the management scenarios and just see if it changes that outcome. You know, it will change the number. Whatever the model spits out, it will change the absolute number, but maybe the relative number will -- That relationship will be the same, and who knows, but we can look into potential ways that we can maybe at least test that.

MR. STEMLE: I was just going to say what John said earlier about these estimates being static makes this situation where the population dynamics of the fishery, and that changing, it makes it difficult to model those two things together, because you can't get a new willingness to pay estimate without getting a new survey group together, and new respondents, and, you know, getting their estimates together and modeling that, and that's based on the current condition of the fishery, and so that changes year after year.

Unless you get a new study together every single year, you're not going to have a dynamic willingness to pay. You're going to have a static willingness to pay value, as you said, in the year that you did this study, and, as it was just pointed out, that may not track with, you know, CPI, and so that -- It makes it kind of difficult when you're trying to apply these willingness to pay values based on what, for instance, the biomass of the fishery is at any given moment, and so it makes it hard to say we can't really up the value, or decrease the value, based on what the fishery is doing with these estimates, because they are static in nature.

DR. COLLIER: Yes, and I know they're static in nature, and we just basically have one value, but the nice thing about the MSEs is it gives you the ability to say what if the willingness to pay changes, and so you can investigate that, and put that into your uncertainty estimates, right? It's just trying to figure out, all right, given this assumption, and we say the willingness to pay would potentially decrease as the population goes down, or goes up, then what would happen to the value of the fishery over that time, and so this is a -- You know, we're not looking for a perfect answer.

What we're looking to do is compare different management strategies based on the assumptions that we put into the model, and so what we're basically -- You know, this is not what the MSE is looking at at all, but, you know, let's say it is looking at allowing three black sea bass, five red snapper, ten greater amberjack, and what would happen to the economics under these different scenarios, and if willingness to pay increases based on population size or decreases based on population size, and so you would compare multiple scenarios under that. Does that make sense? We just want pretty good ideas, pretty good assumptions, of what might happen, and not the perfect assumption.

DR. SWEENEY-TOOKES: Any other questions at this stage? Anyone online? All right. There are some questions now for the SEP. These are in your agenda overview, since that font is very small, if you would like to be able to see them more clearly, but take a minute to look these over. John, would you like us to address these one-by-one or --

MR. HADLEY: It's really up to the SEP how you want to tackle this, and I know, some of these questions, the answer may be that we don't know of that information if it's not -- If it doesn't exist, you know, I mean, and so just posing some of these questions just to kind of, you know, get some feedback from the SEP of is there something that we're missing, you know, as staff that you may be aware of that we're not, that sort of feedback, but, you know, however you want to handle it, and it's certainly up to you. If we want to handle it -- It may make sense to just run down -- Run through them in order, and I can go over them really quickly, if you would like.

The first question really goes over the discount rate that may be applied, and so, as I mentioned, looking at sort of a sensitivity analysis of sorts, applying both a 3 percent and 7 percent discount rate to the future benefits and costs from the modeling output, and, you know, we're looking for a little bit of feedback on that is that. Is that -- You know, is there an additional discount rate that you would suggest outside of that range that should be explored? If so, you know, what are you thinking, and why? What rate were you thinking of?

The other -- The next question looks at alternative estimates, or I should say additional estimates of consumer surplus for harvested or discarded fish that should be added to this effort, and so, you know, there again, this could be a situation where we don't know, but, you know, is the SEP aware of any consumer surplus estimates for released black sea bass, and so the benefit, the economic

benefit, of catching and releasing black sea bass, and, you know, thinking -- We were kind of thinking, amongst staff, how we could maybe address this for either black sea bass or other species.

Could we use -- We have a consumer surplus estimate for groupers and red snappers, and so, for non-groupers, and non-red snapper, could they be set at a fraction of the consumer surplus of other species? You know, just thinking of outside-of-the-box ways to -- If you have information on one species, could you maybe apply it to another, where you don't have an economic benefits estimate?

The third question is how would the SEP recommend determining that the conclusions are robust to the various assumptions? As Chip mentioned, and as I mentioned as well, we're not looking for necessarily the perfect number. It doesn't have to be perfect, since we're looking at which management scenario is performing better compared to the others, and so those assumptions could include a range to provide a sensitivity analysis, and then, finally, any comments on the general methods or assumptions that were being proposed?

You know, one of the assumptions for discarded red snapper and gag grouper utilize sort of an average value between the release due to a bag limit or at least due to a minimum size limit, and so, since we don't know exactly why those modeled fish would be released, so to speak, and, you know, maybe it could be they were too small, or it could be that the angler had already achieved the bag limit, or it could be another reason, you know, the season is closed, that sort of thing, and so just, there again, looking for a ballpark general number to apply to discarded fish.

Then the other one is harvest and discards of these fish are considered a benefit, and then dead discards are a cost, and so, based on some of the literature that we've reviewed, you know, you have a much higher value for harvest than discard. However, there is a positive value, generally speaking, for discarded fish, and then dead discards, and so fish that are caught and released, would be sort of a loss, so to speak, to the fishery. They're not going to contribute to the fishery anymore, and they're not going to be able to contribute to the biomass, and so, generally speaking, you know, any comments on that?

DR. SWEENEY-TOOKES: Thank you, John, and so maybe we should just run through these, and we're looking heavily at the economists here. Looking at Number 1 then, using these rates of 3 percent and 7 percent, how do we feel about that? Adam.

MR. STEMLE: I was just going to say 2 percent would probably the easy one. That's the one we were doing prior to the revision of Circular A4 being rescinded, and so that is what the most current average rate of return on the ten-year Treasury is, and so that's the societal one, the private one, and so I think the 7 percent might be a little too much, and that's based on private capital, and so I think somewhere between 2 and 3 percent would probably be a good idea for this.

DR. SWEENEY-TOOKES: Thanks, Adam. Anyone online?

MS. CURTIS: I don't see any hands raised.

DR. SWEENEY-TOOKES: Okay. Let's take a look at Number 2 then. Any alternative estimates for consumer surplus? Jason.

MR. WALSH: I know -- I think it was the New England. SSC got a presentation recently about a group estimating willingness to pay for kept and discarded fish for black sea bass, scup, and summer flounder in New England. I know that they've incorporated those into those FMPs. I know they use the same methodology with striped bass up there, and so that could be research that would be really worth looking into, I guess, to -- Whether we think that that is a good representation of what's happening in the South Atlantic might be up for debate, but it's at least some data to take a look at.

I know they have a -- They're supposed to have a decision support tool on NOAA's website, but the researchers were saying that there's a cost associated with running that, and I think they took it down, but it might be worth reaching out to them. I know there's a publication, at least one publication, that came out of that. I actually pulled it up, and so I could send it over to you guys, if that would be helpful. It's the only -- It's the only potential estimate that I know of that could be helpful.

DR. SWEENEY-TOOKES: Thank you, Jason, and then do we have any thoughts about setting non-groupers or non-red snappers at a fraction of the other species?

MR. WALSH: I guess, and, I mean, I don't know how I would come up with that number, really. A fraction, and could you elaborate a little bit on what you're thinking?

MR. HADLEY: Yes, and there's a lot of judgment involved in that, and I'll say that, and so it's difficult. You can use informed judgment, but, at the end of the day, you're still -- Unless you have other information to go by, you kind of have to make the assumption that -- I'm making this up, but, you know, a red porgy is not valued at the same level as a red snapper, and so it's going to be lower, and, if you don't have an estimate for that, could you say it's a 20 percent, you know, that kind of thing?

I'm throwing numbers out there, but it is going to be a challenge, and, you know, it may not be an appropriate method to apply as well, you know, fully acknowledging that, but just posing it for the SEP, you know, if there was anything like, oh yeah, it's been used here or there, that sort of feedback, or, you know, if not, it's certainly fine, but, yes, I certainly acknowledge that there's a lot of wiggle room there.

DR. SWEENEY-TOOKES: I am not seeing any burning desires to give feedback on that, and so, in light of that, Eugene, please jump in, sir.

DR. FRIMPONG: Thank you, and so I think my comment is on the second one. I'm not sure, of the number of studies that I've looked at, the willingness to pay for harvesting or discarding fish, but I'm guessing, if you should get more papers, or studies, you might want to consider doing a meta-analysis to just account, or adjust, for the different scopes in the studies to have a more robust estimate for this.

DR. SWEENEY-TOOKES: Thank you. Taking a look then, Numbers 3 and 4 ask us to give advice about whether or not these conclusions are robust to the assumptions, and if we have any comments on the general methods and the assumptions. Any thoughts to share here? Any thoughts online? No hands. Jason.

MR. WALSH: I don't really have any thoughts on 3 right now that would be helpful, but, for 4, using the estimate for fourth fish might make sense, and I'm not sure, and can we -- We don't have good MRIP information on trips, right, and that's -- The PSEs are crazy high, I would imagine.

MR. HADLEY: I guess we could -- We could probably go back to the MRIP data and see if you could find a -- So, you know, I come back to this slide because, looking at the top there with the estimated biomass, and so perhaps we could look at discard data when the biomass was at an equivalent level, and, you know, maybe get a better idea there, and maybe kind of at least close in on where that estimate should be placed, but, you know, these are modeled. You know, you're into the modeling side, and you're not into the observed side, and so it may be a little tricky, but that's a good point. I mean, you know, you can -- If you could say, you know, at the equivalent biomass, what were the discards, and look at that information, at least, you know, start to groundtruth your assumptions.

DR. COLLIER: Just to Jason's point, in the analysis, the council asked the team to look at aggregate bag limits, and those aggregate bag limits are likely to change for a population as the population size changes, and so that aspect is going to be in there. We're still struggling on how to do an aggregate bag limit analysis, but we do hope to get it in there, and there is a member of the SEP that probably has been looking into aggregate bag limits quite a bit, in Chelsey.

DR. SWEENEY-TOOKES: So if Chelsey has any thoughts for us on that, and we will wait to see if that hand goes up. If it doesn't --

MS. CURTIS: That hand has gone up.

DR. SWEENEY-TOOKES: That hand has gone up. Thanks, Chelsey.

DR. CRANDALL: My hand went up, and Chelsey had no thoughts. Full transparency, Chelsey got briefly distracted, and so I apologize that I missed the question.

DR. SWEENEY-TOOKES: Chip is coming back to repeat it.

DR. COLLIER: So we're going to be looking at how the aggregate bag limit likely changes in regard to probably population size, and I know you all at FWC have been looking into this aggregate bag limit, and so we'll definitely be pinging you more and more on your expertise with this subject.

DR. CRANDALL: Yes, and I was just going to say, yes, you are right, and I know we're coming back to you all with more details on all of that.

DR. SWEENEY-TOOKES: Thanks, Chelsey. All right. With that, it looks like we should go ahead and wrap up this agenda item, John, if you feel we've covered things adequately, or any last thoughts? Jason has a last thought for us.

MR. WALSH: I just have another like I guess question about how to look at potential discounted value of discards in the future. That sounds really challenging to try to incorporate, and I guess I don't know how you're going to get at that number, like a probability of reaching a certain -- Like

reaching a harvestable length from different lengths, and I don't -- It sounds really challenging, even just a challenging road to start to go down.

MR. HADLEY: Yes, and it certainly is. As far as, you know, what I was thinking of, at least in my mind, if you use some sort of midpoint estimate between harvest, the benefit of harvesting a fish versus discarding it, then you're, at least in theory, in the middle point, but it is -- You know, it's difficult to determine -- You know, like I mentioned earlier, is the fish caught tomorrow, in which case it's just another discard, and it's still too small, or is it caught several years down the line, where it's a, you know, harvestable fish, and so that's difficult, and I wonder --

I've been thinking about that as well, and I was wondering if, you know, maybe we can come up with a way to calibrate that discard stream that comes out of the MSE, to look at whether it's growth rate or, you know, applying the natural mortality rate to those discards, and so we kind of pull that out, since that's not a result of the fishery at all, and, you know, that fish would have been eaten anyway by a shark or another, you know, species of fish, and so maybe we can better calibrate that, but that's something, you know, noted, and that's something we need to look into a little bit more on how to come up with that future, I guess, you know -- I guess the cost stream of dead discards, based on the modeling outputs, because you have a -- You know, you're, in the future, going to say -- I'm making this up, but, you know, a thousand fish were released, and, you know, 200 of them didn't survive release, and so what do you do with those 200 fish, and that's the trick.

Yes, we definitely need to give that some more thought, and it is going to be difficult, but, there again, maybe just put the full discard rate -- Out the full, you know, harvest benefit on it, and then put the full discard benefit on it, and see if it changes the outcome. If it does, then we probably need to think about it a little bit more. If it doesn't, then, you know, it's not really changing the outcome, and so we may not need to worry about it, and so I think it's something that we definitely need to worry about. It probably is something that we just have to get into the modeling, and see what happens, and, you know, kind of go from there, but point taken.

DR. HUNT: I think on that, you know, is it worth it to project that fish as a potential contributor to the population in three years, or do you just treat it as a death that year, and a harvest, and be done with it, and I don't know what's right here, but you know it's dead, you know, and that could be a loss to that fishery that year, and you just cut it right there, and don't worry about, you know, its potential, you know, to survive.

DR. SWEENEY-TOOKES: All right. Let us go ahead and wrap up then this Agenda Item Number 5. Thank you very much, John, for answering all those questions, and Chip for helping to answer some of those questions, and ask some more questions, and we are going to skip around, as we mentioned earlier, and go now to Agenda Item Number 10, and Christina is going to be talking to us about introducing social science and economics to fishermen, and so Christina.

INTRODUCTION TO SOCIAL SCIENCE AND ECONOMICS FOR FISHERMEN

MS. CURTIS: Thanks, Chair, and so, to orient anyone, like Jennifer said, we're switching the agenda around, and so this is Attachment 10, the very last attachment in your briefing book, and so what I'm going to be talking to you all about now is a presentation that we are going to develop, but wanted to sort of come to you from the very start.

The purpose of this presentation is to introduce fishermen specifically, and so fishermen are the audience for this, to social science and economics and how they play a role in fisheries management. Sort of the impetus for this is that, if you're familiar with the Marine Resources Education Program, and it's a week-long workshop that sort of works to show fishermen the nuts-and-bolts of the fishery science and management process.

They don't currently have a presentation on social science and economics, but are looking to add one, and so that's sort of what got staff thinking about this, but the purposes of, you know, the presentation we're talking about here could be beyond that. We've talked about using this for our advisory panels, to introduce them to this topic, or even for council members, and we do new council member orientation anytime we have a new council member, to sort of introduce them to some of the information they're likely to be seeing at council meetings.

The questions that we'll get to at the end are on the other screen, but really what I want you guys to be thinking about, when I'm sort of going through this, is, one, keeping in mind that fishermen are the audience for this, and so it's important that what we end up presenting to them matters to them, resonates with them, and that needs to sort of be the end-all-be-all. Is this information what fishermen need to understand social science and economics?

Then, sort of broadly about that, I think -- I know I certainly am prone to getting into the nitty-gritty, and so making sure that we are covering what is necessary, and not sort of over-complicating the matter, and so what I'm going to go through with this -- Like I said, we haven't developed a full presentation yet, but we have sort of outlined it, and so I'm going to walk you through sort of the broad topic we want to cover, the goal of that section, the key message we really want to make sure fishermen are taking home, and then what we'll sort of put within that presentation to achieve the goal and the key message.

Starting off the presentation with why social science and economics matter to fishermen, really trying to engage them from the start so that they understand that this information -- Understanding how this information works in the management process isn't just important to managers, but it's important for fishermen to understand, because they're the ones that are providing the information, first and foremost, and then really driving home that key message that fisheries management isn't just about fish biology.

I think I've heard, you know, this phrase a million-and-a-half times from people I respect, that fisheries management is not really about fish biology, and it's about managing people. We don't manage fish, and we manage people, and so really driving that home. Really, the content of this introduction is just to let fishermen know that understanding this will allow them to really provide meaningful input to fisheries managers and better advocate for regulations that are going to support their businesses and their communities.

Next up in the presentation, we would get into the basics, and what are social science and economics, and not just defining what they are, but really what they are not, and so we would want fishermen to take away from this section of the presentation that, you know, social science works to understand the role fishery plays within the communities, traditions, culture, the ever-present question of fishing community dependence, and that economics works on cost, revenue, value, the markets, effects of fishing, but really wanting them to understand that they're not about telling

fishermen how to fish, but are about understanding the real-world effects of fisheries management on fisheries participants and communities, and so just, again, driving home the point of not just how regulations affect fish stocks, but the real-world implications for them as fishermen, and not only would we provide these definitions, but sort of examples to illustrate.

Then driving home why do fisheries managers even need to understand the social and economic information, and I would say, by and large, I think fishermen understand why understanding social and economic information is critical, but we want to drive home here that managers aren't just doing it because, and it's actually mandated by fisheries law, and so talking about the National Standards, the optimum yield definition, but really driving home that the federal legislation that governs fisheries management requires consideration of these things.

Then, diving into the types of social and economic information that are collected, this is where I really want to make sure we're providing information at a level that is useful for fishermen and not getting too into the nitty-gritty, and so understanding that it's this -- You know, driving home there's a big range of social and economic data that understands the human dimensions of fisheries.

It's things like business information, trip costs, landings, revenue, permit costs, understanding, you know, consumer and producer surplus, fishermen behavior, where and when fishing is occurring, gear choices, their entry and exit behavior. Again, not trying to tell them how to fish, but understanding how they fish, and why, so that we can understand how regulations might change that behavior. Then, of course, community information, talking about fishermen wellbeing, the cultural importance of these fisheries, dependence on fisheries, you know, landside job support and things like that.

Then sort of, hopefully, logically moving along to the next step, and so this is the information that managers need, and how do they actually collect that information, and showing the huge variety of mechanisms that are used to gather social and economic data, and that it's done in multiple ways. It's done, you know, in a quantitative way, like some of what John just presented, but it's also done in a qualitative way, and that one of the reasons we try to gather information through all of these varied mechanisms is to try to really capture a complete picture of communities and businesses, to the best of our ability, and so talking about things like surveys and interviews, and why you should participate in those, logbooks, dealer reports, public comment, advisory panels, workshops.

I think, here, if there's anything we've seen, there can be some confusion, and sometimes frustration, I think, on why certain questions are asked, be that in an economic logbook or through a survey that's being done, and so helping to make sure fishermen understand why they're being asked those questions, and so how questions they're asked in a survey, or as part of their logbook, are filtering into the management process, which leads us to what analyses are actually presented to the council.

We want them to understand how -- So like we have all of this different information. If you were actually sitting at a council meeting, how are you going to see that information presented to the council, and how are you going to hear them talk about it to make decisions, and so, you know, you're likely to hear them compare different tradeoffs to balance things like what the community needs are versus what the biological needs are.

You're likely to see things like characterizations of the social and economic environments that are in all of our amendment documents, economic effects analyses, social impact analyses that we often go over at most meetings, and even distributional analysis to look at how regulations may vary between different communities, different sectors, different regions, depending on the action at-hand, and so here really wanting fishermen to feel like, if you were at a council meeting, you would understand how this is being talked about and presented.

All right, and then, sort of getting back to the real world for them, and really driving it home to show them that this information is critical to the decision-making process, and it can have a tangible effect on the regulations that are ultimately recommended by the council. This isn't something that the council is, you know, the Magnuson-Stevens Act requires it, and we're checking a box that we looked at it and then moving on.

It's things that they discuss and affects their decisions on regulations, and we've got, you know, just sort of two quick examples here. You can tell John and I put these together. We work with the mackerel and dolphin fisheries and so one of the examples is, a few years ago with king mackerel, there was a lot of discussion on the minimum size limit, and whether or not to reduce that, and the council got a lot of input from commercial fishermen saying that reducing that minimum size limit to twenty-two inches fork length was really going to affect dealers wanting to accept those fish, that those smaller fish just weren't marketable, and there wasn't a need to reduce the size limit, and, based on that input, the council ultimately decided to leave the size limit where it is.

When we were talking about the dolphin recreational bag limit, this is where the council really had to work to balance the needs of communities in North Carolina versus Florida, which have, you know, very different needs for the size of the bag limit that is needed to sustain that fishery, and so, again, having to have these discussions between different communities, and what is going to work in one place, and we talk about this a lot in the South Atlantic, isn't necessarily going to work in another place.

This is probably one of the areas I think is most important to me, sort of driving home how important fishermen are in the collection of social and economic data. Most of the social and economic information, and not all of it, but a significant portion of it comes directly from fishermen, whether it be participating in public comment at, you know, Lines of Communication, some of the focus group style workshops we have, turning in their logbooks, participating in surveys, and they are really the liaisons between this information and the council.

Given the types of individuals that this presentation is likely to be given to, we really want to drive home that participating in these things is important, and critical, for their fishery. The more information the council has on how regulations may impact communities and businesses, the more able they are to make decisions that reflect those needs and challenges.

Then, sort of tying that back in, and, again, I said this already a little bit, but big-picture takeaway is robust and accurate social and economic information ensures that biological needs aren't the only thing that is considered, but that managers can be responsive to fishermen and the communities that rely on them, and so that is the rough outline of the presentation we have so far, and this probably won't be finalized for, you know, another year or so, and so there is lots of time to make changes to what we're covering in this, the order, the tone, and things like that.

Again, I've got -- I guess I can put questions on both screens, and we can walk through them in whatever way the chair sees fit, but sort of starting with suggesting any additional topics or concepts, and was there anything in that presentation you felt like we didn't really touch on, or maybe should, you know, touch on more, and needs to be more of a point that we sort of hammer home throughout?

Is the material appropriate and accessible for fishermen, and does it sort of properly convey why understanding social science and economics is important for them, and, of course, any pointers you have on presenting complex topics in a way that is engaging, and then does it properly convey the importance and the value of social science and economics to the process?

DR. SWEENEY-TOOKES: Thank you very much, Christina.

MS. CURTIS: It will probably be like a thirty to forty-minute presentation.

DR. SWEENEY-TOOKES: Okay. Good. That was one of my first questions. I think I -- Let me just start by saying thank you, and I think this is really important and useful and exciting to see, and, of course, I have a million thoughts, which is why I will not start. I'm going to call on Kevin to start.

DR. HUNT: I think you have all the elements of -- You know, it's almost like an introductory human dimensions course, where you're doing it, but, if you're talking to a lay audience -- This was weaved in there, but I think you need to drive the point home within that that their opinion matters, and is valued in the fisheries management decision-making process, and that -- You know, nowhere did you say it matters, you know, your opinion matters, and I think that may stem a little bit. You had it weaved in there, but it was kind of maybe more stale for a lay audience, that they want to hear that, I think.

MS. CURTIS: So to make it a bit more personalized, and so not so much social science and economics matter, but your opinion matters, and that filters into. Okay. Thank you.

DR. SWEENEY-TOOKES: I believe you said this was going to go into the middle of sort of the MREP week, and so I'm assuming that, before this starts, there will be some discussion of how all of the other data, and then how the social and the economic, both contribute to management decisions in a really concrete way. Chelsey.

DR. CRANDALL: Hi, all, and this is awesome. Great work putting this together. It's super cool to see. I think that was a good point, to really drive the connection to them as individuals, and why they're part of this process, and I would say one thing that you may want to tie in with that in here is one of the common misconceptions/concerns we see from the public, is this fear that social science is just effectively voting.

You know, it's just whoever says we want this thing the most is the way that it's going to go, and I really like how the material we use, and all the different ways social science tells us about the community, and how it will be impacted and affected, and so maybe there's a way, if that's a misconception that others have experienced too, to touch on that too, that it's not just, you know,

getting the most votes for a policy, and that's what we go with, but social science really helps us learn about them and how they might be affected in their experiences.

The other thing I was going to say, in terms of communication, conveying, et cetera, is stories and metaphors always help, and I think you had some good examples in there telling some stories of how it's been used, and, if there's any ways to weave in metaphors and examples to help them, you know, process this complex topics, that can always be helpful, but great job on this. This was awesome.

DR. SWEENEY-TOOKES: Thanks, Chelsey. I agree. Stories and metaphors and visuals and animations and drawing, and what's the word for that, where you're drawing on screen while it's being explained, but short. Short things. Other thoughts? Kathi, Adam, Christina.

DR. KITNER: Yes, and I would just back up what Jennifer said, with like a lot of visuals, and even like really mini videos, and also a kind of compassionate humor, you know, that -- Just having worked with fishermen in the past, and so that they don't feel like you're way up here, and you're talking down to them, and so kind of a leveling empathy.

MR. STEMLE: Sorry, and I'm struggling to find a good way to articulate this thought. I guess I would just like to see something about conveying the importance, and like this is the only opportunity that fishermen have to provide data into the fishery management process. Biological data is something that we survey, and do externally, and this is something that we collect from them directly, and so, without their participation, it kind of falls apart.

I know it's cumbersome to sometimes read through all the different sections of fishery management actions, and to get to the econ and social effects is way down there, and so I'm just struggling with a way to try to bring -- To highlight that importance to fishermen, and also highlight the gaps in the data, in the econ and social data that we do have and kind of like, I don't know, show them that say, if you look at the actions and alternatives that are presented for any fishery management action, we take the econ and social information, and apply a dollar value to that, and then that's what these things are weighed against.

Now, if you understand that your data, and the information that you provide to us, is factored, and that is what's factored into that, and so that's what the council is making their decision on, and I'm just struggling with a way to articulate how to communicate that importance and how the gaps in the data that we currently have from participation in economic and social surveys, because people are generally kind of apprehensive about doing those, is directly affecting our management decisions. We need people to want to be able to volunteer this information, because that is where they can actually affect change.

MS. CURTIS: So maybe, just to summarize, so throughout sort of -- I'm thinking maybe more stories that really drive home specifically how this information has impacted management, but then sort of maybe noting that like, for, you know, fish biology, we have fishery-independent surveys, and we can gather information outside of fisheries, but, for economics and social science, by and large, that information must be provided by fishermen. We don't have sort of a fishery-independent comparable way to gather that information. A lot of it is being provided directly from fishermen.

DR. SWEENEY-TOOKES: The flip side of that as well, right, and so, everything you've just said, yes. If you don't provide this information, we will not have this information, but, having worked with Julia, and sort of talking about trust in management throughout the whole region, that may not be seen as a bad thing necessarily, right, and so also understanding that you're perhaps asking more information from a community that's unsure about what that information will be used for, and you're going to explain that, but, you know, in the long run, is this going to help us or hurt us will be sort of a thought, I think, prevalent through all of this.

If that information is not provided by us, well, then it might go better for us might be a perspective as well, and so, you know, for each sort of positive reason that we need this data, understanding that there are valid and legitimate concerns that people have, and trying to figure out then how to mitigate that, or how to explain fully, and honestly, you know, how this could and should be useful, and also what can be expected. If we provide all of this information, and we don't see a change in management, why? Is it because we've been dismissed, or is it because our data wasn't dramatic enough, you know, and so really sort of thinking about troubleshooting all the ways this is going to go wrong, I guess, as well.

MS. CURTIS: I guess, sort of as a follow-up question to that, and so one of the beauties of, you know, the MREP program, as well as doing, you know, orientations with our advisory panel members and with council members, is that it can be a fairly frank discussion sometimes, and would you recommend sort of blatantly acknowledging that we understand that fishermen have these concerns and then proceeding to address them?

DR. SWEENEY-TOOKES: Yes, and situating that in, you know, you are one person, and there are X number of these permits, and there are X number of these reports, and so I understand that what you're seeing is absolutely legitimately what you are seeing, but keep in mind that we have to look at the bigger numbers, right, and so contextualizing it and starting off with what can we really do based on three peoples, or six peoples, or, you know, this community's reaction to this topic. Is this following up on what -- I don't know, and I know I said Christina should speak earlier, but now I feel like we're on a different topic, and should we come back to you or continue on this topic? I think that Kathi and Kevin were both responding to this. Yes? Responding to this?

DR. HUNT: I think Adam hit a sore spot with me, and I'll speak for social scientists, where I don't know if you were getting at it, but all of us who are in academia, and who have read fisheries textbooks, the social and anthropological and the economics chapters are the last three in the book, and I think Adam was getting at that, and we've seen declines in angler participation in studies over time, and I don't know -- You know, when opinions get discarded, and it's just what the biologists want, I think anglers see that.

I think fishermen see that over time, and I don't know if that's what you were getting at, Adam, but, you know, we have the frustration, as a field of social and economic folks, where, yes, we're mandated in the Magnuson-Stevens Act that we be a part of this, but it says biology as modified by social and economic concerns, and they're not on equal footing, and I don't know how you explain to the public that, yes, your opinion matters, and it's valued, but it's not on equal footing as the biology, and that is tricky.

DR. SWEENEY-TOOKES: It's not just checking the box, which is a sentiment that was said to us over and over, right, and we know that you care what we say, because you have to, and you've checked the box, and so you have your work cut out for you. Kathi, what were you going to say?

DR. KITNER: Yes, and, just to add on to that, it's been like that for decades, but it's good to acknowledge it again, and I guess, like kind of building on that, before you -- You said it's going to be like another year until you get this together, but will you have the chance to actually get this in front of various types of fishermen beforehand and then get their input?

MS. CURTIS: I'll say a version of this, yes. Before it would go to specifically the Marine Resources Education Program, it would be reviewed by the steering committee, which has both, you know, council staff and NMFS staff and a number of fishermen as well.

DR. SWEENEY-TOOKES: Thank you. Christina, and then Chelsey.

MS. PACKAGE-WARD: Sorry, and I have a point that I was going to make before, and do you mind if I start with maybe building off of this discussion of where social science and economics fits, and like maybe making it explicit that the Magnuson Act determines where it fits, and so like biology does come first in Magnuson, and so like we have to manage for sustainability, and so that is why it's that way, I mean, and then, also, I was just going to say that --

I mean, you had, in your description, like the laws and mandates, and then also the social and economic data that's presented, but maybe making a connection between those two things, and so like we're required to look at the impacts on communities, and so that's why like the social environment is focused on communities, and maybe doesn't contain like even what I would consider social data, and so maybe just making that sort of clear, that like the mandates affect what we present, and maybe it isn't what you would expect for a social, if that makes sense.

MS. CURTIS: Yes.

DR. SWEENEY-TOOKES: Thank you, Christina. Chelsey.

DR. CRANDALL: I think that was a legacy hand. Sorry.

DR. SWEENEY-TOOKES: No problem. Jason.

MR. WALSH: I was kind of going to say something similar to Christina, where I think like, sure, sometimes like we need to meet a certain cut, right, but how that happens is where we come in, and where the social and economic data can be like, okay, we're going to have a 20 percent -- We need to cut harvest by 20 percent, but how that happens, and like it doesn't need to be a 20 percent cut to your paycheck, or your wallet, and I think -- That's how at least I think about it when I'm trying to justify my whole career.

It's like, you know, how can we have a cut, or a decrease in harvest, without a decrease in paycheck, or minimize decrease in paycheck, and then another point is maybe I think it might be worth hitting on how many mechanisms are in place to protect their data. I think sometimes folks -- You know, the acronym they're more scared of is the IRS than, you know, NOAA or whatever, and so I think

just explicitly saying, hey, your data is incredibly protected, and I think it's worth just reminding people, because I think that can be a concern.

MS. CURTIS: Yes, and I would say I agree that that's definitely something that could be added in there, especially talking about all those different ways that the data is collected, and then it's like, wow, there's a lot of my data out there, but sort of driving home that that stuff is protected, and, you know, we're not providing information to the IRS, for example. Then, sort of to your previous point, would it be a little bit like explaining sort of like biology is almost the sort of why we are managing, but then it's the social and econ that really gets into the how we're choosing to manage, and is that --

MS. WALSH: Yes, I think so, and I think your examples are great examples of that, but just, yes, explicitly maybe saying what you just said, I think would be really valuable.

DR. SWEENEY-TOOKES: Other thoughts, other feedback? I have lots of thoughts about the how. I will say we, on a different project, just did first aid and safety training program with a bunch of fishermen, a few weeks ago, and found that, even three slides, they all started to fall asleep, but, when you have hands-on activities, or unexpected activities, or things where people had to collaborate, or cooperate, you know, and even simple stuff, people were far more engaged.

I'm sure you already have this in mind, but even just, you know, reading through this and thinking, well, make them build this, right, and maybe this can be an activity, and not a -- Rather than teaching them this key point, this message, or this goal, give them a scenario in which they create this message, or this goal. Brainstorming, but, yes, thinking about ways to make these hands-on activities, versus just you teaching, would be good.

MS. CURTIS: More interactive.

MR. WALSH: Thanks for that point as well though. I've been in some meetings where I think sometimes that we get a little too creative, or too like hypothetical, and people can get really upset. You know, they're like what are you talking about, you know, and so there's a balance there.

DR. SWEENEY-TOOKES: I wondered about showing examples, and I know you said this, but when you were -- You know, for example, when you said explaining fisheries communities and cultures, like going to the NOAA Voices page, and showing how fishing cultures -- I mean, here's a bunch of fishermen talking about, you know, their communities, or when you had the point about what this looks like in council -- Sorry, and I have lots of notes in here. If you had just a short video of, hey, or even the transcript, or the audio, and, you know, this was the point at the council when they discussed this, and heard from the fishermen, and, you know, you can exemplify what this looks like in practice, and I don't know.

MS. CURTIS: I would say I really like the idea of pulling audio for some of these examples. That's something that would be relatively easy for council staff to do, is to go pull some conversations from the audio transcripts that would sort of illustrate. Instead of me saying council members listen to this information and make decisions, you can hear a council member actively discuss it on an actual management issue that went through the council process.

DR. SWEENEY-TOOKES: With some sort of visual to go with it, I think so.

MR. HADLEY: I was just thinking, you know, to follow-up on that, that's great, and it can also show the different state viewpoints, and how the council has to -- You know, this state is saying one thing, and this state is saying another, and where's the middle ground, and so it can highlight that as well, and so, yes, that's great.

DR. SWEENEY-TOOKES: I see no other hands. Any hands online? I may speak for the SEP, or maybe just for myself, when I say I would love to see this as it progresses, and feel free to call on me, should I be of any use to you, but it looks like we can go ahead and wrap up this agenda item and move on to our last item of the day, which is a preview of tomorrow, correct, Chip, and so give us just a minute to get all of our technology in order, and we will be right back.

DR. COLLIER: All right, and so I'm going to go over -- Just give you a brief introduction to a topic that you guys are going to get a couple of presentations on tomorrow, and what this started off was is an idea that came to the Council Coordinating Committee in May of 2025, and so the Council Coordinating Committee is made up of executive directors as well as chairs of all the councils among all the regions, as well as NMFS staff, and so it's very high-level conversations that go on.

This idea of narrowing the scope came out around May of 2025, and, at that time, the federal government was really trying to figure out how to best utilize their resources, and reducing the overall cost of the government, and so NMFS was definitely concerned with, all right, if we're going to have a much smaller budget, or a smaller budget, how do we continue to manage everything that the councils need us to manage, and so, obviously, they came up with an idea to narrow the scope.

Maybe we're not going to be able to manage the 500 stocks that we have, and so how do we begin to address, and narrow the scope, and doing it in a consistent fashion across all the councils, and that's where it started in May of 2025, and it was an aggressive timeline for that time period. They were looking to have things to headquarters by April 3rd of this year, and so we've already passed the deadline, and we haven't narrowed the scope yet.

With that being said, you know, when this then came to the council in January of this year, there was an additional piece added to it, and it was a piece looking at the consideration of maybe allocating resources based on some of the value that they're seeing here in the prioritization matrix, and so that really perked the ears of some of the councils.

You know, that was a very big change, and maybe this tool wouldn't be able to be used in that same context the same way, and so the councils have been very concerned with this, that big change to it. It's not clear on when the new timeline of when this could be done, but, as far as what we're thinking as the council, or at least council staff, we do see that, you know, there are some really useful tools that could come out of this.

Not necessarily saying what's coming out today is the best, but really figuring out, all right, how can we use the pieces that would be coming out of the narrowing the scope, or maybe looking at, you know, how to allocate resources based on things that are going on today, as opposed to how things were going on based when Magnuson was created almost fifty years ago now, and so that's what we want you all to really be thinking about with this prioritization tool.

Think about it in two contexts, the narrowing the scope of management, but also potentially thinking about how they could reallocate resources, and is this data, or the framework that they're proposing, is it appropriate for that and, if it isn't, you know, what could improve it? What could be done in the future to think about changing things? You know, it's always good to have a plan on how to change, as opposed to coming to you guys after the plan has been created and it's well along the path.

You know, when you're thinking about a national framework, that's a lot of people that get involved, and so getting your comments early on, or, you know, maybe before the next round starts, I think could have a lot of value for people to consider, and so, with that, you know, I'm not all that long-winded, and I don't want to get in the way of happy hour and so, with that, if there's any questions, please let me know, and I'll be happy to answer any of the high-level questions, but you'll get into the technical presentations tomorrow.

DR. SWEENEY-TOOKES: Any big-picture questions for Chip? Kevin.

DR. HUNT: So who is going to fill this in?

DR. COLLIER: It's supposed to be a teamwork of council staff, NMFS staff, and, by NMFS staff, I mean the Science Center staff, as well as Regional Office staff. They're going to work together in order to fill everything out, and that really -- That focus on having a more collaborative approach has really changed over time.

You know, back in May, I think, you know, they were looking at a pilot from the Pacific Coast, where they were narrowing the focus of some of their management structures, although they might be reconsidering that now, but it's supposed to be a collaborative effort, and so we have formed a Southeast group, or NMFS has formed a Southeast group, in order to start working on it, and I believe they've met one or two times so far, and we still haven't begun to fill it out yet.

MR. STEMLE: By fill it out, it's the -- I think, in one of the slides there, it's just like the beginning of a survey, and you do that for each species, and that's what you're saying, when you're saying fill it out, or no?

MR. HADLEY: So, I mean, I think the application of this has changed over time. Originally, you know, from a council member perspective, and I don't want to lead the discussion too much for tomorrow, but, as you'll see, as it's presented, it's broken out into species groups, and so along the lines of the FMPs, and snapper grouper is split into deepwater and shallow-water, but, you know, that's one way to look at it.

The other way, you know, I think the way the council -- Again, I don't want to speak for the council, but I think the way that they were thinking about it is probably prioritizing it on a species level, and so, you know, that's going to take us probably a little bit of a different approach, but, right now, it's blocked into basically fishery management plans, in those species groupings. Again, snapper grouper is split.

The other thing I will say, and you'll see this tomorrow in the presentation, the application, on the NMFS side, on the agency side, for the economics portion is a little bit further along than the

social, and so, the social, we're going to, -- Staff is working, council staff is working, with NMFS staff to provide -- To fill out that survey, and sort of help pilot that survey, based on the council's fishery management plans, but it's still early in the process, really, to your question.

DR. COLLIER: But, as far as narrowing the scope, that is being presented on a species-by-species basis, and so, yes, you would fill out some of the economics. I'm not exactly certain on how the social science survey is being developed, whether it's a species-by-species basis, but some of the ecosystem -- It's going to be blocks, but, some of the ecosystem parts, that's going to be -- That could be done at a species-by-species level. Fisheries, you know, you can get economics on the individual species, and so some aspects might be better for the, you know, narrowing the scope of management, and some aspects might be better for thinking about how to allocate resources.

MR. WALSH: This is completely internal, and there's no -- The public isn't going to know about this, or be involved in this process, right?

DR. COLLIER: So, in order for the council to narrow the scope of its management and remove species from the fishery management plan, we would have to go through an amendment process, and so, at that point, it would go out to the public. Now, the information that's behind it, that might get ahead of everything, and it could lead to some challenges as the council is having discussions.

DR. SWEENEY-TOOKES: Any other big picture questions for Chip? We will dive into this topic much more fully at 9:30 tomorrow morning, correct, and so I guess we will leave it for today, and so that will be the second agenda item for tomorrow morning. Please do not be fooled. We will start at 8:30 tomorrow morning, as scheduled, with the SMILE Project, an update on the SMILE Project, and then we'll go into this agenda item after that, but it does look like we will be wrapping up early, which I don't think has ever happened in my memory with the SEP, and so please be prepared for a very vigorous morning tomorrow.

We have a lot of big items to cover, since all of this risk and value analysis will be tomorrow, rather than split between two days. The SEP invites everyone in the room to join us at Edmund's Original, formerly known as Edmunds Oast, and so, with that, we will adjourn for today.

(Whereupon, the meeting recessed on April 13, 2026.)

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APRIL 14, 2026

TUESDAY MORNING SESSION

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The Social and Economic Panel of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn and Suites in Charleston, South Carolina on April 14, 2026, and was called to order by Dr. Jennifer Sweeney-Tookes.

DR. SWEENEY-TOOKES: Good morning, SEP. It is 8:30, and so we'll go ahead and get started. Thank you so much for being here this early in the morning. I just wanted to check in on a couple

issues, or topics really. Many thanks to those of you who sent me notes last night and this morning. I really, really appreciate it. Thank you so much for sending the notes from yesterday.

We do have some agenda changes for today, and so, just to give everyone a bit of a preview, we will start right now, as soon as I finish speaking, with Agenda Item 7 on the SMILE Project. That will wrap up about 9:30. At 9:30, we will be condensing Agenda Items 6 and 8 into a single session, which I'll let Christina and John explain in just a moment, ending around 10:30, and then we will wrap up with Agenda Item Number 9, and then, of course, finish with future business and any last details that we need to deal with, and so we'll be 7, and then 6 and 8, and then 9 and 11. Christina and John, did you want to mention what's going on with the risk-value assessment now or as a preface later?

MR. HADLEY: Later.

DR. SWEENEY-TOOKES: Later. Okay. No problem. That sounds great, and so, in light of this little shift, I am going to change the notes assignments just a bit, if you all don't mind. Agenda Item 6, which of course is now joined with 8, I will still ask Eugene and Jason and Adam to still cover that, and then if I could also add Kathi and Christina to that, because we will be merging the social and the economic into a single item there, and so thank you very much.

I do also need to mention Marcel, who is the chair of the SSC. He and I have spoken about this a few times. The SSC is very interested in our feedback on this agenda item. I will need to give -- Yes. Thank you. Marcel is nodding vehemently. I will need to give really all of our information, all of our feedback, all of our thoughts. They are relying on the Social and Economic Panel to inform their discussion, and so please, please, please contribute, take good notes, so that I can represent our thoughts adequately tomorrow, and so, with no further ado, then let us get started. We'll be hearing about citizen sciences experiences with the SMILE Project.

UNDERSTANDING CITIZEN SCIENTISTS' EXPERIENCES WITH THE SMILE PROJECT (SIZE MATTERS: INNOVATIVE LENGTH ESTIMATES)

MS. SOLOMON: Good morning. I'm Jen Solomon.

MS. CLEMENTS: Hi. I'm Kaylin Clements.

MS. SOLOMON: We're here to talk to you today about the results from the SMILE Camera Survey Project, and, for those of you who don't know, SMILE stands for Size Matters: Innovative Length Estimates.

What is the SMILE Project? It utilizes citizen scientists to collect fish length data using a low-cost laser-mounted camera. This initiative plays a vital role in supporting reef fish management and conservation efforts by supplementing end-users with crucial size data, and I want to preface our presentation by saying that we are not developing the laser, nor the laser-mounted camera, none it. We are social scientists who have been working on a structured survey in collaboration with REEF, and so Kaylin is now going to walk us through the results of our study, including the questions.

MS. CLEMENTS: Thank you, and so here you can see four of our primary research questions. We wanted to know who is most likely to participate in the SMILE Project as citizen scientists, what motivates divers and snorkelers to participate in the SMILE Project, what challenges did participants, who did participate and use the camera, what challenges did they experience while using that camera, and what types of trainings are preferred for engagement with the SMILE Project, and so trainings like how to use the camera or fish identification.

Methods, and so, as Jen mentioned, we used a structured survey. It was primarily an online survey. I say primarily because some people were intersected in-person, but they still took the survey on like an iPad, or on their phone, and we have two like surveys that we sort of categorize into what we call the main survey and the post survey, and this is because, like I mentioned in our research questions, we were looking to get feedback from people who had already used the camera, and so that's what we call the post survey, and it's a smaller sample of people. Then the main survey was the bigger group, because they had not used the camera yet, and so we call those non-users. Throughout the rest of the presentation, you'll hear this term "non-users", and that's just people who haven't used the camera yet, and not that they have had the opportunity to use the camera and said no, but just they haven't done it yet.

The main survey covered questions that assess sociodemographics, dive experience, camera experience, preferred training methods, and motivations for participation, and a few other sort of social psychological variables that we were interested in, which you'll see in some of the results, and the post survey had additional questions asking about experience using the SMILE camera, barriers and challenges to use, motivations, now that they have used it already, and interest in continued participation.

The distribution of the survey went through -- Primarily through REEF's listserv, using a survey link, and it was also advertised on social media, and also in-person at REEF events. using things like QR codes and little postcards.

Here you see those two terms I was mentioning, non-users and users, to the right side of the table in those two columns, and here is just a little overview of the diver certification level for each of these groups, and so, in the user group, and I'll start there, it's kind of unsurprising that there were no non-divers or snorkelers in that particular group, because these are people who actually used the camera, and did go diving, but, otherwise, the majority of both non-users and users had at least advanced open water dive certification.

Then, similarly, we were measuring number of dives as well to assess dive experience, and so more than half of both non-users and users also had at least a hundred dives, but there was also a fairly large part of our non-user sample that had twenty-five dives or less, and so we have a nice distribution here, and then, finally, underwater camera experience. We asked how often respondents use an underwater camera when they dive, and the majority of non-users and users frequently or always use an underwater camera. Then, notably, among non-users, 11 percent never use one, 50 percent rarely, and 21 percent sometimes.

Circling back to our research questions, now that we've covered some of the demographics and dive experience, the first one I'll show results about is who is most likely to participate in the SMILE project, and, in our survey, we measured intended behavior by asking how likely would

you be to participate in the SMILE project if given the opportunity, to measure that specific outcome of participation, and so it's this intended behavior.

First off, 83 percent of respondents said that they would be likely to participate in the SMILE project, given the opportunity, and this was on a scale, and so, you know, the middle was the cutoff point, and then anything that was likely, or very likely, above that, we're calling likely to participate, and then the other side of the scale would be unlikely, or very unlikely, et cetera.

Non-users who are likely to participate in SMILE had a median age of fifty-six, and this was sampled 350, whereas those who were unlikely to participate had a median age of sixty-four, and there was a statistically significant difference in age distribution between these two groups, suggesting that younger non-users were more likely to participate.

Non-users who were likely to participate significantly differed from those who were unlikely on quite a few things listed here in the bullets, and so diver certification level, belief about the impact they would have on fisheries science if they participated, and we asked about that, and I'll show you some of those questions in a minute.

Then comfort with the SMILE technology, and so we asked how comfortable would you be using the SMILE technology without training, and then we also asked that same question with training, just to see if it mattered, and we found that there was a significant difference in their likely versus unlikely based on both comfort with training and without training, and then it also differed based on interest in participating and experience with underwater cameras.

I think one of our more interesting findings relates to how people perceived the impact of participating. Wait. I'm sorry. I skipped a slide. I'm looking at my notes, and I think I skipped a slide. I just wanted to share a little bit about the distribution here of likelihood of participating in the SMILE project. You can see, kind of going back to what I mentioned, 83 percent of people said that they were likely to participate, and so you can see here that big spike on the right side of the chart, and the majority said likely to participate, and so that's kind of exciting.

Then this is specifically contributing to fisheries management, if you look at the title and the top of the chart, and so we were kind of curious if we specified, hey, how likely would you be to participate if it contributes to fisheries management, as opposed to just participating generally, and we thought this could go in either direction. Either they were not really a fan of participating in something that contributes to fisheries management, or it made them more interested, because maybe they thought they would have more of an impact, and so that's why we have this separate question, but people were typically still very likely to participate or want to participate if it contributes to fisheries management.

I just want to mention that, between the first slide and this slide, where you're seeing a similar distribution, non-users differed in their likelihood of participating in the project depending on whether it could impact fisheries management, and, you know, we tested this, and so there was a significant difference. This distribution slightly shifts toward more likely for the question about fisheries management, suggesting that people might be more likely if they know their participation will contribute to fisheries management, and you'll see this kind of reflected again when we get to the motivations slide.

After the question asking about likelihood to participate if it contributes to fisheries management, we asked why, but only if they said they were unlikely, and so, if you can imagine in the survey, we asked, hey, are you likely to participate if it contributes to fisheries management, and, if they were at any level of unlikely, we asked a follow-up open-ended question of why not, and so here's a kind of a breakdown of the kinds of responses that we got, using some quick coding of those short, open-ended responses, and this is a group of forty-nine people that answered this question. Some people didn't answer it, or it didn't apply to them.

I also want to mention some respondents provided broader reasons, just generally why they wouldn't want to participate, because they had the opportunity to answer that in this question, and so these reasons were external constraints, like access to dive sites, money, and time, and then there was also some responses about confusion about the project, and so, you know, what's required, and what's the intent of the data, and then some people weren't sure what we meant by fisheries management, or they weren't interested in fisheries, or they were averse to contributing information to commercial fisheries, which was one of the other reasons we asked this question at all, and then some were just concerned about dive experience and skills, or they didn't like the idea of using underwater cameras, and physical ability, and so similar to experience and skills.

Moving on to the responses from what we call the post-survey, and so these are folks who actually had already participated in the project and had used the camera, and so we call them users. Our collaborators at REEF recruited many divers through their network of closely affiliated divers and interns and some staff, and so this is possibly why you see a high amount of REEF membership and participation in REEF survey trips. Most of these participants have done fifty or fewer REEF surveys, and a smaller number have done more than fifty. Then, finally, as mentioned previously, participants in the SMILE project generally had experienced diving.

Going back to our research questions, the next one I want to share some results about was what motivates divers and snorkelers to participate in the SMILE project, and, to answer this question, we asked about motivation in the main survey, and so pre-participation, non-users, and in the post-survey, and so people who have used it, and so I have a few slides, and I just want to be clear about what the difference is between the three slides, as they're kind of similar.

First off, this is results from the big group of non-users, as we call them, and so, the question is what might motivate you to participate in the SMILE project, and so, imagining that they want to participate, why might they want to, and, to be clear about this question also, so you can understand the X-axis and how it says ranked score, respondents could rank two motivations as the most motivating, which got three points, two as the second most motivating, two points, and two as the third most motivating, one point, and we landed on this through a lot of piloting. That's how we decided to ask it that way, and let them sort of put motivations in most, medium, or third-most motivating.

The bottom, the X-axis, is showing the sum for each motivating factor, and that's why it's such a high number all the way on the right, the 1,200, and so, notably, contributing to the management of marine ecosystems is most motivating, followed by participating in science, challenging myself with a new underwater skill, community involvement, and contributing to policy decisions, and then personal accomplishment, and it seems fun was ranked on the lower end, and so this is the pre, and next we'll look at post.

Here you can see, at the top, the slight change in the question of what motivated you to participate in the SMILE project, and so people who have already used the camera, and participated, thinking back to why, and so, again, contributing to management of marine ecosystems scored highest, but this time participating in science tied, followed by challenging myself with a new underwater skill.

We asked that same group what would motivate you to participate in the SMILE project again in the future, now that they kind of know what it's like, and what they like about it or don't like, and so one difference in the options for this one we chose to make, based on piloting, was we changed the option, or the motivation, that we had previously called challenge myself with a new underwater skill, and we changed that to I enjoy the challenge of capturing as many fish as possible, because it's no longer a new underwater skill.

This was sort of feedback we got in piloting, and so, interestingly, this ended up being one of the higher-ranked motivations after having participated. They enjoyed that challenge of trying to capture as many fish as possible, which is kind of fun. Then, again, contributing to management of marine ecosystems and participating in science were again top motivations for future participation, after having already experienced it.

We also assessed non-user respondents' perception of impact of their participation, like I mentioned earlier, and we did this by using a Likert scale with three questions, or one question with three areas of impact, and so, if you were to participate in marine species monitoring with the SMILE project, how much of an impact do you believe your contribution would have on the following, and so we asked, okay, fisheries management, fish policy, and fisheries science, and we did provide little definitions for each of these, in case you were wondering, and so you can see here the results.

They thought they would have most impact on fisheries science, followed by fisheries management, and then policy, and then we combined these questions for an impact score, which we confirmed with Cronbach's alpha, and we also asked respondents how interested they would be in participating in the SMILE project, using a Likert-type question, and I don't have it listed here, and so I don't have like a chart of the results of that question, but I want to mention it, because we assessed the correlation between perceived impact and interest in participating. You can see, in the results in bold at the bottom of the slide, we found a positive, though weak, correlation between perceived impact and interest in participating.

The third research question was what challenges did participants experience with the SMILE camera, and so we answered this question by asking only respondents who had already participated and used the camera, of course, and the challenge most commonly indicated -- By the way, they could choose more than one. We had a list, based on our understanding prior to the distribution of the survey of the potential challenges, through a lot of piloting. We had a list of potential challenges, and they could also put an other option and so they could choose more than one.

The challenge most commonly indicated by respondents was that target species were skittish, followed by target species were scared of the laser, or they encountered few target species, and then low visibility, et cetera. The least commonly indicated were too many target species being present and quality of instruction.

We also asked respondents who already participated about their level of comfort setting up the camera, which is shown in the chart on the left, and most were comfortable or very comfortable, and around 35 percent were somewhat comfortable. We also asked, in the future, if provided instructions, how likely would you be to directly upload the data, i.e., photos and any associated dive information, to an online dashboard on your own, and most were likely or very likely, but some were not up for it.

This brings us to our last research question of what types of trainings are preferred for engagement with the SMILE project, and so, as REEF is developing trainings and materials for the SMILE project, we took this opportunity to explore what types of trainings divers prefer for participating in the SMILE project, and, first off, we asked what training topics respondents would prefer prior to their participation, and those topics included camera use, data management and upload, fish identification, and fish survey methodology.

Respondents almost equally preferred all the training topics related to the SMILE project, but more respondents would like to learn camera use, understandably, and this was the bigger group, the 453, the N of 453, and then we got to their preferred training modality, and so you can see a list of different modalities people could receive this training on the left, on the Y-axis, and so things like recorded webinars, live webinars, in-person workshop before use of the camera, dockside or boat instruction just before use, instructional video of camera setup in use, a written guide online for download, or a hard copy guide available through REEF.

We asked this for both learning how to use the camera, but also the skill of fish identification, and so you can see the fish identification is like the dark red-brown-colored bar, and then the lighter sort of orangey-tan bar is for the camera skill, and so these are responses from the main survey, or aka our non-users, and we allowed respondents to use up to three, partly because it's possible to offer more than one type of these training or instructional materials. You could imagine we might have, or REEF might have, a recorded webinar, but also have, you know, a downloadable instructional manual.

At the top of the chart, you can see the recorded webinar is typically preferred for both skills. Written guides available online for download is also preferred for both, and an instructional video of camera setup and use was chosen by more than half of respondents for learning to use the camera, though that was less preferred for fish ID, and the hard copy guide was more preferred for fish ID than for camera skills.

Then we, of course, asked those who had already participated what training modality would be preferred. Now that they know what it's like to use the camera, and be underwater participating, what type of training do they think is really useful, right, and so we thought that would be helpful, and insightful, and so that's shown here.

The most commonly chosen modality among these folks was dockside instruction just before use of the camera, in-person workshop before use of the camera, recorded webinar, and then instructional video of camera setup and use in the field, and this might be because -- Some of this might be a little bit biased towards what they actually experienced in terms of the training they were given, since this is no longer a hypothetical, and this is what they actually experienced, and, with that, I think we're at a conclusion, and so I'm going to turn it back over to Jen.

MS. SOLOMON: So we have what we see, or what we perceive to see, is a strong intent to participate in the SMILE project, which is exciting, I think, especially for REEF, and the primary motivation, which was a little bit surprising for us, for it to come out so strongly in our results, is the perceived impact on marine conservation, including management and science.

Our suggestions to maximize adoption really focus on contributions to marine management and science, really emphasizing that material that is put out there about the project, and the opportunity to learn a new skill and technology to engage with new technology that they likely have never engaged with prior, and then we also suggest that REEF provide diverse training modalities, and not just one or two, but probably a variety, so it would appeal to the varied audiences that we have.

Addressing challenges related to fish behavior, skittishness, is probably something that needs to be done with other members of the team, and not a social scientist, but engineers and such, and then making the data collection process seamless is also a suggestion of ours.

We are currently working on creating a model to predict the likelihood to use the SMILE camera. We're pretty close to having that well established, I believe. We've been working on it over the last few weeks, and there's also a high level of comfortability and expertise and interest among survey respondents to participate in SMILE.

We've started asking questions such as to what extent do participants in the SMILE project demonstrate changes in their comfort, expertise, and interest levels following participation, and so, as the SMILE project continues, and more and more users are out there, I think some of the questions can be altered and implemented in a survey.

One of the biggest questions, of course, with citizen science in general, is how do we best maintain interest and motivation to participate, and I think that will no doubt be the case with SMILE. The top motivating factor for respondents to participate in the SMILE project is contributing to fisheries management, and perceived impact is positively correlated with participating in SMILE, and so we've been asking the question of in what ways does participation in SMILE affect participant's understanding and evaluation of citizen science as a mechanism for influencing marine management outcomes, and, finally, forward thinking, what's the potential of a scaled SMILE camera adoption? What are the most effective strategies for distribution and increased use of SMILE camera, and I think this is something that REEF has been really interested in as well.

Just a few acknowledgments. None of this work happens in isolation. We rely on so many people. We were invited onto this project I guess in 2024, and we've worked with a lot of different people. First, thank you to -- Thanks for funding this work to the council, and then a lot of gratitude to scientists from the council and FWC who provided input and support, and we named just a few of them here.

REEF staff and colleagues piloted the survey extensively. We went through a very long piloting period, to be sure that our instrument was valid and reliable, and since we've, obviously, done some more work on that as well, and so much thanks to REEF for inviting us onto this project and working alongside of us, collaborating with us on it. It's been a really exciting project to be part of, and, with that, we will open it up to questions.

DR. SWEENEY-TOOKES: Thank you so much to both of you. That was a really excellent presentation on a really interesting project, and so thank you for all of this good work, and so questions from the SEP, clarifying questions or follow-up questions. I will start with a question then, since no one is raising their hand. Do we have any questions online? No questions online. Okay.

I was very curious, all the way back at the beginning with the survey methodology, and please forgive me. I went searching through the report, and through the presentation, and I did not find your survey questions, and so I may have missed them, and so I did have two follow-up questions related to that.

You mentioned that you sent out the survey link via the REEF listserv, and then you also did sort of intercept with folks, and handed them an iPad, and I'm so interested to hear whether you looked into whether there were any differences in their responses, because the recruitment was different, or if it was just consistent across, no matter what the recruitment method was.

MS. SOLOMON: We did not look at differences between the two, but I actually would really like to kind of pass the baton to Jen Locke, if she would like to share a little bit, because she was the one who did any of that in-person recruitment. Jen Loch, would you like to share a little bit about --

MS. LOCH: Yes, and I don't know how much we can really like get at that, because we had like the one survey link, and so I don't know, on the backend, if you can see how that person responded based on how they received the survey, and that was kind of the basis of the question, right?

DR. SWEENEY-TOOKES: Yes.

MS. LOCH: But I'm just trying to think, and, I mean, I think it's just really like people that are willing to take the survey, whether they're being approached dockside, waiting for a dive to start, or receiving the email, and just being like open-minded and willing enough to participate in the survey, and so I wouldn't expect a lot of differences, but, yes, like some were already REEF-based members that are getting it through an email basis, and so they might already be jazzed about email, or, I mean, excuse me, about REEF, but, at the same time, maybe they have a saturation of information from REEF, and wouldn't get --

You know, wouldn't be as willing to do it, because they've got other correspondence that's going on, or just somebody who doesn't want to be -- Like wants to be left alone at the dock, that's not going to take the survey, and so I don't really anticipate a lot of differences with that, but I don't know that we can really -- You know, we can't definitively answer that, because we had it with all the same link, and we talked about doing different links, and it just kind of was at the risk of snowballing, right, the survey, and so we decided not to have different link sources to track that.

MS. CLEMENTS: Yes, and I think just to emphasize that the large majority was fully online participation, and so, even if we had that information, because we didn't ask them, oh, did you get handed an iPad by Jen Loch, you know, and we might not have a big enough sample size to compare, but, thankfully, we do have those other demographic information, and dive level, and REEF affiliation, things like that, to help us understand some of the differences, but good question.

Thank you. It was a huge effort to get a good response rate, and so thank you to Jen Loch for all of your effort on that.

MS. LOCH: Oh, I'm not taking credit for that, and thank you to our survey respondents.

DR. SWEENEY-TOOKES: Thank you. Thank you very much. Other questions, or thoughts, from the SEP or the room? Judd is coming to the table with a question.

DR. CURTIS: All right. Thank you. Judd Curtis, SAFMC staff. Can you go to slide 18? I think it was the bar graphs of the motivations results, one of those. My question was -- I think the next one. Go down one. What struck me as interesting is you have the lowest-ranked score contributing to policy decisions, but then the highest-ranked score contributing to management of marine ecosystems, and, to me, those are quite linked, right, and I'm curious if you had definitions of those ahead of time that you gave to the participants, or was it up to their own interpretations, and why do you think there's such a divergence between those two results?

MS. CLEMENTS: Yes, and thank you so much for asking that. I was kind of hoping someone would ask a question like this, so we could kind of dig into it. We did provide definitions throughout. I have the management of marine ecosystems definition right here. It was defined as the application and enforcement of marine policy, usually by government agencies, with the incorporation of scientifically-collected data of marine activities to achieve sustainability of resources.

I'm going to say my sort of -- It's more like an opinion, because I can't really prove it, but what I think might be happening, and then if anybody else, if Jen Solomon or Jen Locke or Ali want to chime-in, but I think what might be happening is they maybe are not super confident that them, you know, pointing a laser underwater at a fish that gets data, and is collected by REEF, and used for some sort of scientific understanding, and it might be too big of a jump to think that that goes all the way to an actual policy decision, but the idea that it's contributing to management of marine ecosystems seems a little bit more flexible, and feasible, given what they're actually contributing to the project. That's kind of my interpretation, after spending some time with the data.

MS. SOLOMON: I would totally agree with that. Absolutely. I think that's what's happening here, that policy seems like a leap, whereas management of marine ecosystems seems like a step. We saw it in the impact questions, too. Well done having a slide number. I don't have the one for that one. You see it again here a little bit, slightly different wording, though, and so the jump to fisheries science seems pretty clear, right, and then the next jump is to fisheries management, and then the last one is to fish policy, and you see the difference in the shaded bars of how much they think they impact each one.

MS. CLEMENTS: Yes, and we did -- Because we sat with these for a while, to make sure that we did define all three, which was the science, policy, and management, and I -- Kind of along with what they're saying, I almost -- I don't know if just like the word "policy" is a little bit more daunting to people, that they're like I don't think this -- Like they're saying, like I don't know that it's going to have that reach, and so I just think that it's -- Sometimes I think it's in that word, even though we defined it probably more succinctly than we did management, would be having some influence here.

DR. CURTIS: Thanks for the follow-up. That was my first instinct too, is that just the word “policy” maybe was a little bit more loaded than, you know, management of marine ecosystems, which seems more happy and positive, and policy can get into political connotations, which makes it maybe less favorable to -- But thanks.

MS. SOLOMON: That's a good point.

DR. SWEENEY-TOOKES: Thanks, Judd, for a great question. I was sort of thinking along the same lines, and, in fact, looking at the slide and thinking, no matter how well we define a concept when we're doing a survey, or even an interview, an in-depth interview, where you can answer follow-up questions, it seems that there's always a lot of slippage between people's understandings of science and management and policy, and how they relate to each other, and so I appreciate you teasing it apart like this, and we could probably all dive into this as a paper in and of itself, as a project in and of itself, but, on a related note, I did have a question for you on slide 13, I think it is. I might have made that up. Yes, on 13.

I had noticed, you know, that there's a lot of mention of the contributing to the management of marine ecosystems, you know, which is pretty consistently throughout your results, and then there's these eleven people who are averse to contributing information to commercial fisheries, and commercial fisheries just seem to come out of left field in the context of this project, and so I wondered if you could talk a little bit more about what those looked like, or why you think you were getting those answers.

MS. CLEMENTS: Yes, so I will give credit to Jen Loch for having the foresight that this might happen, and she was the one who actually suggested having two separate questions, one just general likelihood to participate and one that was specifically if contributing to fisheries management, and so, Jen, I would really like to ask you again if you would be willing to talk a little bit about your insights about this phenomena.

MS. LOCH: Was this -- Was averse to contributing information -- Was that an option, or was that an open-ended response?

MS. CLEMENTS: It's all open-ended.

MR. LOCH: Okay. I think that we were interested to see, and as I think the council well knows, that like, within the angler community, within commercial fisheries and recreational fisheries, there is kind of an adverse reaction to providing data to government agencies in particular, and so there tends to be a distrust in that.

I think, overall through this survey, we have found that that really doesn't exist with the diving community, and maybe saying it doesn't exist is too much of a stretch, but, like relatively speaking to fisheries, there's much less of that aversion to contributing information, and so it was just kind of seeing, yes, is there that hesitation to give, you know, quote, the government the information, and therefore getting restrictions on what, you know, they can fish and stuff.

With divers, they're not necessarily doing an extractive activity, unless they're spearfishing, and so it would be interesting to know, and I don't know that we can based on the survey, like are the people who have responded to that, are they spear fishers, and therefore they would be less likely.

And I'm just speculating, of course, but, yes, it was just kind of to see -- Just kind of expecting like is there that difference within these sources of data, whether it be a fishery-dependent method or through this methodology using divers.

MS. CLEMENTS: Yes, and, even within this N of eleven, I have to go back, and like every single one has some nuance to it, as to why they want to contribute to commercial fisheries, but, like Jen said, in this particular -- You know, our demographic is pretty much divers, and so they seem to be leaning towards maybe conservation and sustainability of the reef, and so the idea of like contributing to commercial fisheries might actually go the direction of I don't want to contribute to like less restriction, in case that's the way that the data is.

MS. LOCH: I didn't think about that.

MS. CLEMENTS: I think we probably saw a little bit of both in this little group, which surprised me too.

DR. SWEENEY-TOOKES: Yes, and I agree that that might be the possibility there. Thank you though for exploring that. Any other thoughts and questions from the SEP before we move on to addressing the questions to us? All right. Jason.

MR. WALSH: This is Jason. Thank you for the presentation. My question, I guess, spins off of Judd, or maybe it's just a comment, but it seems like there could be value in explaining the process of where this data could go, considering that people are more interested in participating if they can influence fisheries science, then management, then policy.

Also, I would recommend, maybe in the paper, including those definitions, because, when you said that, I couldn't like -- I couldn't process it as quickly as you were speaking, unfortunately, and so I didn't totally understand the definitions, and so I guess I can't speak on whether I think that the audience understood the difference between fisheries management and policy, but, I mean, I guess clearly they did, but I guess this result seems to imply that it would be worthwhile to explain how this work could influence each of those, and kind of the relationship between them in the future implementation of this project.

MS. SOLOMON: Thank you. Really, really good point. I won't speak for REEF, but, obviously, they're producing, and developing, trainings and materials, and so it is really interesting to see some of the importance of wording, and defining, and terminology, but I really like what you said about be clear about how the data can be used, and what is that process, and I think you're really getting into kind of the crux of it, especially just in citizen science in general, so people understand their impact, and we're seeing the importance of their perceived impact in our results, and so thanks for that, and we'll include those definitions in our paper.

MS. CANDELMO: I would just say -- This is Ali speaking, from REEF, and REEF, in general, with our volunteer fish survey database, we're pushing harder and harder to get that data out there, and show stakeholders its utility in these management processes, and so, you know, with that thirty-year database, we're showing the potential of SMILE, which is really great, as we add length data to our diversity dataset, and so, yes, that is a big priority as an organization, you know, bringing in data analyses, and post-docs to really work through the large dataset that we already have, and figure out a way to scale SMILE to that level as well.

We've got an AI contractor onboard now that's already been really quick at helping us develop a workflow that will let us process these videos a lot quicker, and so there's -- Yes, and the growth is -- The potential for growth is huge.

MS. SOLOMON: Cool. Thanks, Ali.

MS. LOCH I'll just kind of speak to, like, from the REEF perspective, as well of like adjusting the camera and the methodology, and this survey was really helpful to know what people were experiencing. I thought the camera battery dying, like being kind of in the middle of one of their challenges was interesting, because, to my recollection, that really rarely happens, and so I think that shows how non-influential some of the other factors were, but, anyway, we've already developed a new laser system to kind of combat the challenges we were having with the lasers, and it's now adaptable to GoPro, and so it's not restricted to the point-and-shoot cameras, the digital cameras that you're seeing here, and so it has already advanced that.

Then, from like kind of a scalability question too, about the training, we were also interested in like, okay, what's something we can -- You know, is there a training area that we can shed, that we're maybe putting too many resources in, and people aren't using it, and, well, maybe to our dismay, it seems like they like all the training modalities, and so I guess like everything is really on the table, but how do we make those things accessible, and succinct, so that people can access it based on their preference, but, also, when we're giving out these cameras to dive shops, that we're making sure that they're well-trained, because people want the dockside, you know, component, and the hands-on camera instruction, and workshops, and things of that nature, and so it has already like modified the project's methodology, for sure.

MS. SOLOMON: Thanks, Jen. Thanks, Ali.

MS. CLEMENTS: Can I add one thing I just brought up, because I had printed out the definition for the management of marine ecosystems, and that was really long and wordy, and I wanted to share, because I can see it's really important, and, next time we present, we'll add a slide with the definitions.

In the motivations question, we define marine policy as marine policy refers to the laws and regulations of governments for management of marine resources, and so that one was much shorter, and then the second was management of marine ecosystems, which I already shared, but it was a bit broader.

DR. SWEENEY-TOOKES: Thank you. I think that's a great idea to include this next time. Jason.

MR. WALSH: I had one more question. This was -- You didn't touch on it in the presentation, but it's in the report, about the willingness to pay question, and I was just wondering how you structured that. Did you just explicitly ask what are you willing to pay for this camera?

MS. CLEMENTS: I have the survey up right now, and I can tell you what it said, and so we had two questions, and we thought long and hard about this, and we piloted, and we tried different ways, and so what we landed on was two questions, but they're both sort of fill-in-the-blank, open-

ended, and there is a possibility that the camera you own is not compatible with -- Sorry. Let me clarify.

This was sort of based on survey logic, because some people own an underwater camera already, and so, first, we asked do you own your own underwater camera, and so then, if they said yes, we said there's a possibility that the camera you own is not compatible with the needed equipment for the SMILE Project. To the nearest dollar, how much would you be willing to spend on your own underwater camera that can be used for the SMILE Project?

Then the next question was we anticipate that the laser and mount for the SMILE Project will cost between \$100 to \$200, and how much would you be willing to spend on a laser and mount (separate from the camera), that can be used for the SMILE project, and that question was asked to anyone, and not just people who had their own camera, and this was asked for people who had already experienced using the camera, because they had some understanding of what all was going on.

MS. LOCH: That question was only asked to the people that had experience?

MS. CLEMENTS: Yes, for the post-survey.

MS. LOCH: That was for the laser and the camera question, or just the laser question?

MS. CLEMENTS: Both.

MS. LOCH: Okay.

MR. WALSH: Sorry, and I'm a little confused, and so it was for the -- This question was asked in the post-survey, and the only people that saw the underwater camera question were people that already had an underwater camera, but everyone saw the laser and mount question?

MS. CLEMENTS: Sorry. Okay, and so the willingness to pay questions were asked only of people on the post-survey. I shared both questions because, when we were piloting, we found that there would be confusion among people who already own a camera as to what we were asking them to buy, and why they might need a different camera from their own, and so that's why we have two questions, but, basically, you know, the most important one is probably we anticipate that the laser and mount for the SMILE Project will cost between \$100 to \$200, and how much would you be willing to spend on a laser and mount separate from the camera that can be used for the SMILE project. I don't remember what exactly is in the report that you read, and so I can't speak to which one of these questions is reported, or if both questions were reported.

MR. WALSH: Okay. That's fine. It just seemed -- I didn't realize that you gave them a range of \$100 to \$200, because, in the report that I'm reading, people are not willing to pay \$100. The average is \$93.

MS. CLEMENTS: Yes, and they were allowed to put in anything they wanted. We just wanted to let them know -- To give them some point of reference, so that they didn't feel completely blind, and it's a difficult, you know, thing to describe in a survey question, when you're doing willingness to pay, because you don't want to like bias what they -- You know, maybe they would be willing to pay \$2,000, and we just told them they only needed to pay \$200, but we thought it would be

more useful data if we shared a little bit about what we predict the price would be, but we didn't force them to choose between \$100 and \$200. We just told them this is probably around what it would cost, and they could enter any number they wanted.

DR. SWEENEY-TOOKES: Thank you. Thank you very much. Just in the interest of time, I would like to move us on to the discussion questions that you've given us, to make sure we do due diligence on these, and so, SEP, are we familiar with any other projects, especially marine-based CitSci initiatives, that use innovative and non-app-based technologies, and maybe similar or different findings? Kathi.

DR. KITNER: Yes, and this reminded me a lot of like usability studies that are conducted in tech all the time, either for software or for hardware and things like that, the pre-surveys and the post-surveys, and there's a lot of stuff that exists online, and I put, in the notes, two links to open-source digital libraries that have all kinds of stuff. I didn't check to see about specific marine-based technology or anything, but I think you could take findings from other studies, and contextualize them, and reproduce them here.

MS. SOLOMON: We've been looking at this. We spent a lot of time, and we actually had somebody that was specifically looking for this, and the marine-based work is really hard to find, actually, which is great for us, because it's a little bit novel, but also we would like to be able to situate it within the marine science, the citizen science, world, but thank you, and we really will find anything to follow-up to.

DR. SWEENEY-TOOKES: Thanks very much. I don't see any other suggestions here, and so what do we think about -- I'm sorry. Chelsey has her hand up. Sorry, Chelsey.

DR. CRANDALL: I did, and no worries at all. I was trying to think of an answer to this one before, because I know it's really cool to see these findings, and, you know, the motivation of contributing to science and management, and it mirrors what we've seen in other spaces, which is super cool. It's not marine, but Rachel Bratton, on our team here in Florida did recently wrap up a project with Florida Lake Watch, which is freshwater water quality monitoring, that found similar results with those motivations, and so we're happy to share a report out of that, if that's useful.

MS. SOLOMON: That would be fantastic. That would be awesome. Thank you.

DR. CURTIS: I'm sure you guys are aware, and probably participate, in the lionfish roundups that occur typically in the Gulf. Granted, those mechanisms of obtaining the data are a little bit different, but the end result is similar to what you all are doing, as far as getting length data, and that can be incorporated into assessments, and so that's just one example that I thought of, that I imagine you all are particularly familiar with, but I thought I would add it to the list. Thanks.

MS. SOLOMON: Great. Thank you so much. That's really helpful, too.

DR. SWEENEY-TOOKES: Thanks, Judd. Moving on to ways to help citizen science feel their data is meaningful, actively informing management decisions, and this is sort of the forever quest. I will say that I love to ask people this when they're doing surveys, and how could we make you

feel that your data is meaningful, and how could we keep updating you, and what is the best way to do this. Other thoughts from the SEP?

MR. WALSH: I guess I already kind of said this, but maybe just explain the process and the training of how, especially -- I mean, this is funded by us, or the council, and so explaining a little background about the council would make sense, in this context. Maybe, if the funding mechanism was different, maybe it would make a little less explicit sense, but I'm sure you could still fit in how this could be a data stream.

MS. SOLOMON: That's great. Thank you.

DR. SWEENEY-TOOKES: Thanks, Jason. Then, looking ahead, what kinds of future social science should REEF prioritize in relation to this project, and, related to that is would it be useful to conduct another survey, a user survey like this, and, if we think so, what would be a good interval time for that? Chelsey, we're not sure if that's a vestigial hand, but, if it's not, please chime in.

DR. CRANDALL: No, and it's a new hand. Sorry, and I keep having problems with the hand raiser, but yes, and so I think, priority-wise, this is a cool opportunity to test out some of the things that one might do based on the findings of this, and so, for example, if we do recruitment strategies that are framed around, you know, contributions to management and conservation, if we follow the recommendations that came out of these findings, do we see more people signing up?

Can we compare different recruitment strategies and see which one leads to more people participating or not, and can we do some of these ways that we share data and communicate back out, and maybe do some experiments to see if some of them result in greater retention, and I think, to me, this is a neat opportunity to build off of what the survey found and test some of these things out.

MS. SOLOMON: I love that idea. Absolutely. That's a fantastic idea. I think the experimental portion is really advantageous, and would give us a lot more data than just sort of what we typically have been doing, which is sort of, as our organization, sort of guessing what to say, and I would love to be able to do that. That would be fantastic.

MS. CLEMENTS: Let's do it.

DR. SWEENEY-TOOKES: We'll get to work. That's a good idea. Thank you. Do we have a suggested interval? Do we want to see more surveys like this in the future? I mean, we think so, and it's always good to update survey data, right? It doesn't look like there's a suggested interval arising in the room. Thank you, Kathi.

DR. KITNER: I don't have a suggested interval, but I think, you know, you would worry about it if you're going to resurvey the same people. If you're doing new participants each time, then I think it's more dependent on the researchers and how much data they can handle coming in.

DR. SWEENEY-TOOKES: Thank you. The last part of this had to do with the actual -- I lost my questions here, Christina, and sorry. Is informal user survey data collected internally valuable, and, if so, for what use, and so you do mention, of course, participant engagement, and I think we've given some good ideas about how to use that information going forward.

You do have IRB written in there, and I will say that I think it's concerning how much distrust there can be in fishing communities about science and researchers and so, the more we can allow people to make informed consent, probably the better for all of us, and so whether that's an IRB or not, and I think it depends on you all, but someone else wants to chime in as well. Chelsey, what do you think?

DR. CRANDALL: I totally agree. If there's not a formal IRB, at least working with folks to draft up informed consent processes, so people know what they're getting into. Generally, and I was thinking about this with regard to (a) as well, and I would caution that, in Florida in particular, given how available information is from our state and license databases, et cetera, we're seeing a lot of challenges related to survey fatigue, and so I don't have a specific suggestion, but just a word of caution and thinking really intentionally about when we do or don't do additional surveys with this group, and with others in the region in general.

I would say, if it was an informal survey that wasn't involving say formally-trained social scientists to develop instruments, things like that, and maybe that's a space we're getting just feedback on how things are going with the program, would be my suggestion, but, again, a general word of caution, because we're just seeing real issues with survey fatigue in Florida right now.

MS. SOLOMON: That's good to know. Thank you.

DR. SWEENEY-TOOKES: Thanks, Chelsey. We don't have any other questions on our discussion question guide, so any last thoughts or comments for this team? All right. Thank you. Thank you very much, all of you, for this really good work on this great team, and we appreciate you being here this morning to share it with us, and, with that, we will --

MS. SOLOMON: Thank you for having us.

MS. CLEMENTS: Thank you so much, and thanks for all the feedback. It's really insightful.

DR. SWEENEY-TOOKES: Great, and so we are going to move on then to our joint Agenda Item 6/8. We're going to do a quick mic check, and then we'll be back. So things -- Our understanding is that there's been a slight shift in how we're handling this risk-value matrix since yesterday, and so John is going to give us a little update as to what we're doing here today with this before the presentation starts.

RISK-VALUE MATRIX INTRODUCTION AND ECONOMIC ANALYSIS & RISK-VALUE MATRIX RECAP AND SOCIAL ANALYSIS

MR. HADLEY: Yes, and thank you. Before turning over to Matt and the social sciences group, I just wanted to kind of brief everybody on some of the recent changes, and so, you know, Chip introduced this topic yesterday afternoon, before the meeting wrapped up, and we have some late-breaking news that work has been paused on the agency side on developing the risk-value matrix, and so, you know, we kind of discussed it a little bit, and we think it would still -- There would still be a good bit of value in discussing this amongst the SEP, the reason being is that, you know,

the nature of the discussion may change a little bit, and you'll see that when we get to the discussion questions.

Christina and I have kind of marked off a couple of those discussion questions, because they're probably no longer appropriate, but there are some that are still appropriate, and so we're interested in getting the SEPs feedback, particularly, you know, from kind of along the lines of the discussion we had yesterday when we were talking about the snapper grouper MSE and really getting the SEP's input on some of the methodology, and also the social-science-related survey, you know, thinking that work is paused on this at the moment, on the agency side, but, however, it could be taken back up again.

Additionally, there are bits and pieces of this that council staff could use and apply on a species-by-species basis to help the council work through Amendment 61, which you got a briefing on yesterday, looking at, you know, kind of trying to rank, or think about, whether or not management may be needed for fourteen species in the snapper grouper complex, and so there's bits and pieces of this that could certainly still be useful, even if it's not taken up on a national level by the agency.

With that, as I mentioned, that kind of changes the discussion questions at the very end, but we'll get to that, but we still wanted to move forward, and Matt and his group were kind enough to continue to give the presentation, and so, with that, I will turn it over to the Science Center. Thank you.

DR. MCPHERSON: Great. Thanks, John. Well, as you all know, on the agenda, we were going to have two separate items, one to discuss, you know, the economic value and the other to discuss the social value, but we're combining those two presentations this morning. It also says environmental risk here, but that's -- We're not going to discuss environmental risk with the SEP. I think we're going to have a presentation on environmental risk with the SSC tomorrow, if you're interested in that.

I'm going to -- We were recently informed that the risk-value matrix has been, I think, strategically paused, or suspended, but, as John said, I think that there, you know, could be some interesting applications of some of this work, and I'm particularly interested in discussing, you know, the social value work, which I don't want to necessarily strategically pause, but just delink from the risk-value matrix, but, in any case, we'll start with the economic part, with David Carter and Sabrina, and then we will talk about the social value part after that, and so I'll turn this over to David.

DR. CARTER: Okay. Thanks, everyone, for having us. The thing that makes this different from what the agency usually does with regard to economics is we were asked to break things out, and that is calculate estimates of, quote-unquote, economic value for different species groups. This hasn't been done before, partly because it's pretty hard. We just generally don't have the data to do this. However, in the interest of this project, we tried. These are the species groups for the Southeast. There were similar exercises going on in the rest of the country, but these were the ones that we focused on, and, of course, you'll see the ones in the third column related to the South Atlantic.

This was the motivating thing, and so they told us to do this, or asked us to calculate these estimates for all the different species groups, and, given that this was a national exercise, we met with a

group of economists, for several months last year, and tried to see what kind of method we would be able to use, and what measure we could use, in pretty quick fashion, in order to come up with an estimate of economic value.

We ended up settling on a value-added measure that is, you know, the economic contribution of each species to the national GDP. An important thing about this measure is that estimates for both the commercial and the recreational sector can be added up easily. Also, the measure, given the existing estimates we have out there, it was relatively straightforward to calculate for the entire country, and the group thought that this was a reasonable snapshot of the relative economic contribution of each species group.

The value-added measure that we use in general measured the same thing for each sector, commercial and recreational, but we started from a different point for each of those sectors. In the case of the commercial fishing, everything is driven off of revenues, and so there's a model, which I'll mention briefly, but it starts with the revenues, and then sends those through the rest of the value chain, and ends up at what the value-add is at the final consumer.

On the recreational side, you're actually starting with the final consumer. We were starting with recreational expenditures, and so expenditures on recreational fishing, and those then were given a multiplier, and ended up at the value-add estimate.

One thing about this approach is it's consistent with the way things are done in the *Fisheries Economics of U.S.* publications, and a notable thing is the multipliers are considerably different between commercial and recreational. Specifically, the multiplier on a commercial revenue estimate to get to value-add is much higher, on the order of four or five, than a multiplier on recreational fishing expenditures, which is closer to one, or, you know, in the area of one or one-and-a-half, something like that, mainly because, for recreational fishing expenditures, we're already at the end of the consumption chain, whereas commercial fishing revenues were at the start of the production chain. I'm not going to go through all of this. We provided this information mainly as background.

There is a -- I'll go through a little bit of detail on the commercial and recreational estimates, or the method, but there is a background document on the recreational fishing expenditure approach for that sector, and there is some documentation also on the commercial fishing approach.

We didn't actually do, and I say we in the Southeast, didn't do the commercial sector modeling. Juan Agar was the one involved with mainly just collecting all of the revenue information for each of the species groups. Once he got those, he sent it up to Science and Technology, with Sabrina and her group, to put it through this model, which I'm not going to go through here at all, but the model is also something that, again, is used in the *Fisheries Economics of the U.S.*, and, if there are questions, then I'm sure Sabrina can answer those.

These are just for informational sake, the data sources for the commercial analysis, and so it was a lot of legwork involved with just simply pulling together all of this data at the species level, and Juan wanted to acknowledge a lot of that heavy lifting was due to -- Was done by various people throughout the region, and also other parts in the country.

On the recreational side, this is some details about how the value-added was calculated, and it's not very complicated, and it is consistent with the way it's done for, like I said, *Fisheries Economics of the U.S.* and general recreational fishing impact analyses. We started with target trips. This was the most important thing, in that we assigned every single trip from the MRIP, and also some older Puerto Rico MRIP and Texas and Louisiana data, and we assigned all of those trips to one of those species groups, and, in the case of MRIP, we did it according to primary target species.

This was a way to make the species groups mutually exclusive, and so every single trip in that series was assigned to a group, and then we just multiplied those number of trips times the adult share in the survey, which is typically around 90 percent, and then multiplied the expenditure per trip times those trips, and we did that by state and by mode, and all adjustments to dollars were made using the GDP deflator. Then the value-added multipliers were applied from the latest analysis, the 2022 study, and then we wound up with this value-added by species group, and we did it for all these individual years, but I think ultimately ended up using the 2024 estimates.

This is just some more for information purposes, the data that went into this, and, like I said, the target trip data from MRIP, the expenditure data, the multiplier information, and then how we did the adjustments.

Here were the final estimates, at least at the time we did this, and things may have changed slightly based on some recommendations actually by the South Atlanta Council when this was discussed, and I don't remember exactly when that was, a few weeks ago, or maybe a month ago, but this is the general, you know, categorization, or sorting, I guess, if you will, of the value-added, and I guess, in the context of --

Well, given that they're not really proceeding with this risk-matrix exercise, we're not exactly sure how these will end up being used, if at all, but, you know, this is the estimates, and one thing to note is a large chunk of the recreational value-add is actually uncategorized. That is it's not in any of these species groups, things like state fisheries and other species groups that just were not included here. Okay, and I think that might be all I have. Yes, and I'll turn it over to Matt.

DR. MCPHERSON: Do you want to ask questions at this point of the economics part?

DR. SWEENEY-TOOKES: Thanks, Matt. I'm checking in with the economists. Would you like to pause for questions at this point, economists, or move on? We would like to keep going. Thank you for asking though.

DR. MCPHERSON: Keep going. Okay. All right. Well, you know, as part of this strategically-paused exercise, I was asked to integrate something having to do, you know, with the social and cultural value of the species, and I think this came up in the -- You know, this came up in the discussions of the leadership council, that, you know, not only should economic value be taken into account, but also, you know, the cultural value of the species, and so we started a national -- Like a small national work group to discuss, you know, how we could do this.

Then they decided -- Then they said, well, maybe we don't want this, and so that workgroup kind of was suspended for a little while, and then they did then -- You know, my center director wanted it, and so I sort of revived the workgroup, and so this approach that I've come up with has been sort of discussed with the workgroup, and in particular with the Northeast, but it's not an approach

that we agreed to necessarily at the national level, although, in the Northeast, they definitely were going to apply this same approach.

Up in the Northeast, their rankings were -- Or their species were based on stocks, and so they were going to have to figure out how to address that, because they weren't going to be able to do the social value of particular, you know, stocks, per se, but probably just more at the species level, and here I'm doing social value based on those species groupings that, you know, we were given for this exercise, and so is that the best sort of unit of analysis to use for this kind of an exercise? I'm not really sure.

In any case, the approach that I decided to move forward with, you know, draws, you know, primarily on expert knowledge, because, you know, we talked about, you know, what kind of data was out there that we could use to calculate, you know, cultural value of the fisheries, and it's really, really difficult to find, you know, any sort -- Or identify any sort of, you know, dataset that we could use, even, you know, at a regional level, or at a national level, to do these kinds of calculations, especially, you know, something that we wouldn't have to spend some time, you know, constructing and pulling together, and so I think this -- You know, this approach, based on expert knowledge, is a reasonable, you know, way forward, you know, in the absence really of good data.

It would largely be -- Or it would be a qualitative approach, where we could, for example, you know, rank these according to, you know, high, medium, or low, you know, sociocultural value. It's, you know, based on defined sociocultural criteria, which I'm going to show you right now, you know, show you in the next slide. We have a -- I developed a standardized Qualtrics survey for this, and, you know, to emphasize that, right now, this is a pilot, you know, project, just to kind of see how well it works, and I -- The idea was to send it out to five to ten experts per region.

The survey is actually in the field right now. Some of you have it in your inboxes, but I limited it, because of PRA concerns, initially to experts within NOAA, as well as council staff, and so definitely it's something that, if people like it, and there's interest in, we could expand it out. We can -- You know, the idea would be to perhaps bring this method to different APs, or to different, you know, different groups.

If we could get some sort of PRA authorization for this, you know, I could send it out more broadly to, you know, key experts on, you know, the different -- The fisheries in the different regions, but, right now, it's limited, you know, internally, but I ended up sending it probably to about twenty people for each region. I think right now, the best response rate has been the South Atlantic, but I have not -- I just sent it out last week, and so I haven't had a chance to actually look at the responses so far.

Anyway, the unit of analysis is the species group by region, and we would come up -- You know, like I said, really the idea for the suspended risk-value matrix was just to have some sort of qualitative assessment, and so, if there was something that, you know, ranked low, because of, you know, the economic values weren't very high, but it was something that is very -- Identified as a very high cultural importance, then that would give you an opportunity to take another look at those species and think about, well, maybe we should -- You know, we should rank these highly, or elevate them in their position in the, you know, risk-value matrix.

So, you know, does cultural value mean? You know, we looked at the literature. There are a lot of criteria, big, long lists of potential criteria, that you could use to, you know, define social and cultural value, but I tried to reduce it down to, you know, basically five criteria of heritage and traditions, community identity and connection, subsistence use and food security, noncommercial, or recreational, well-being, and teaching and knowledge, and so I provide the -- I won't read through the definitions, but all of you have, I'm sure, an idea of what these different criteria mean, but, you know, provide definitions for those for people to refer to,.

Then basically use a Likert scale, and so, for each one of those criteria, you could rank the fisheries according to, you know, whether it's low, it's medium, or it's high, or it's none, or you don't know, and so the -- The low criteria, for example, would mean that the fishery -- Let's say, if you take one of those criteria, and a given fishery, and that that fishery, you know, for that criteria has a limited or localized contribution, and it's relevant to a few communities or user groups, and, you know, this would -- Considering geographic scope across the region, number and diversity of communities or user groups, frequency and consistency of recognition or use, cultural depth or identity linkage, and degree of substitutability.

You could rank each fishery for each criteria, thinking about, you know, those criteria as to whether they're, you know, low, you know, medium, or high, and so this is what the -- You know, what the survey looks like, and then, for each one of those, also, since we're dealing, in many cases, with species complexes, or groups, I ask people to write the name of the species, if there's a specific species, one or two specific species, within that group that they were thinking of when they provided those scores.

For example, if you were thinking about, you know, mackerel, you know, king mackerel I think is very important for fishing tournaments, and so, within that species, you know, coastal pelagics, the species complex, you know, in terms of recreational well-being, you might rank that high, but that ranking is particularly thinking about king mackerel, and then the comments would be, you know, importance for tournaments at the regional level, or something like that.

Thanks to AI and its wonderful beautification function, as well as its ability to sort of respond to survey questions, I have an example here. This is just, this is not anything that has been thought through, and it's purely just an example of how this would work, but, for example, you know, as I mentioned before, if you're taking coastal pelagics with heritage and tradition, you know, it might be ranked as a medium, and, because of -- There are regional kingfish tournaments, king mackerel tournaments, and seasonal runs are part of coastal fishing traditions, and they're not as deeply rooted as reef fisheries, and the primary species there that, you know, you would be thinking about are king mackerel, and so forth for each one of those criteria. Then you can do a calculation, you know, and add it up, and then, you know, provide an overall rank.

If this approach works, then those are the kinds of results we would end up with, and I think that -
- Like I said, right now the survey is in the field, and so I don't have any results to present. I am hoping that the fact that the risk-value matrix was strategically paused doesn't mean that we have to pause the survey, which I don't think it does, because I would like to get the results, be able to calculate those, be able to send those out, and be able to, you know, have a discussion, if everyone is interested, as to whether, you know, this is a useful metric and whether this would be potentially a useful approach.

I know that, in the discussions that I've had with people as, you know, I've been developing these surveys, I think it gets us into areas that we don't often discuss in-depth, and so there's always -- There's often this implicit idea of social or cultural value of different species, but we don't necessarily take the time to really talk through, you know, how these species are important, you know, from a cultural standpoint, and I know just talking about, you know, specific species in certain regions, as I said, it can lead to some really interesting, you know, conversations, you know, about, you know, how important these species are, and why.

I think it would be potentially -- If we're not -- We could think about how to -- You know, whether we want to be constrained by these same species complexes, or, if we're not tied to the risk-value matrix, we could do it differently.

We could do it -- You know, species-by- species would be a lot, because there are a lot of species, but, you know, we could maybe just highlight, you know, key species that we would want to talk about, or whatever, but, anyway, there might be different, you know, ways of, you know, different -- Of focusing the species, you know, but I am interested in continuing to pilot this approach, you know, and, you know, to see, you know, how well it works and how -- Whether or not this might be something that, you know, could be valuable to, you know, integrate into the overall discussion, and so that's it for that one. The next parts of the presentation are environmental risk, which we're not going to talk about.

DR. SWEENEY-TOOKES: Thank you very much, Matt. I appreciate your good work on this in times of sudden flux, it seems, and so I would like to open it up to the SEP for any questions. Kevin.

DR. HUNT: Matt, I questioned some of the use of the terms here in this last social value approach. In terms of the metric, that's -- I wouldn't consider that qualitative, and I would consider that ordinal. I don't know why the use of the term "qualitative" there, and you're really conducting a quantitative survey from a non-probability sample that you've chosen as experts, and so the term "qualitative" kind of just throws me for a loop there, and I was wondering what you guys are thinking on that.

DR. MCPHERSON: Well, yes, and, I mean, I think -- I guess it is -- You know, I guess we could consider it to be -- You know, it's ordinal, obviously, but it's more of a -- You know, it's more of a qualitative evaluation, in terms of ultimately whether, you know, we think about these as being, you know, of high importance, you know, of really high -- I just wanted to ultimately be able to highlight those species, or species complexes, that were regarded as particularly of high importance, and so, in that regard, I was thinking of it really as, you know, kind of more of a qualitative evaluation, but, yes, from a -- You know, strictly speaking, it is an ordinal, and it is a - - You know, it has a quantitative dimension to it, and so I can fix that in the presentation for future -- You know, for future presentations.

DR. SWEENEY-TOOKES: Thank you, Matt. Other questions, questions or comments? Christina.

MS. PACKAGE-WARD: Matt, and I feel a little bad with this, but I guess like, in the process of me attempting to answer these questions, I was really struggling with like how I would answer

them, even being familiar with the fisheries, and so I guess just to put that out there, that like I haven't answered it, because I don't know.

I need to like, I guess, do more research, and I'm just thinking that, if I'm struggling, like other people might be struggling, and then just, also, I guess looking at the categories, and thinking like if this is going to be opened up to a broader audience, being like AP members, and I don't know, and I'm just sort of like struggling like with whether the categories are appropriate for that, or if it should be asked in a different way, and I'm sorry, and this is --

DR. SWEENEY-TOOKES: Thanks, and, if I can add on, I was sort of circling around some similar questions when you were mentioning it's being piloted, and I was wondering if there's an opportunity for the people who are the pilot subjects for them to give feedback on the survey design as well, right, because, no matter how great a survey is, often, when we sit down to take that same survey, we go, oh, right, and we could have also added these things, or approached this, and so is there any space in this pilot to get feedback from the agency and council insiders?

DR. MCPHERSON: Yes. Absolutely. I mean, the idea was to put it out there, give people a chance to respond to it, and then go back to everybody and get your feedback as to whether it worked or not, and so it's truly a pilot. When I was putting it together, I was wondering how many people would feel like they actually had the knowledge, you know, to fill this survey out. I mean, I think it's fine if it's sort of your best impressions, or your best guess, right, for these different things, and then kind of see if there's any consistent pattern, in terms of the way people are, you know, evaluating these different fisheries, but I also think it's interesting.

It may be a reflection of the fact we don't know that much about the cultural value of the species, right, and we don't have a lot of information or data about those, and so it's -- Yes, and it might be pretty hard to respond for some of these, and so I want to -- You know, once everybody finishes answering, and I get the responses, I'll look at the results, and I'll calculate the results, and I'll see how many don't knows we have, and then I'll go back to everybody and ask everybody about the survey itself, and get everybody's feedback.

DR. SWEENEY-TOOKES: That's great, Matt. Thank you. I appreciate you following up on that, and then it sounds like there will be a follow-up to get feedback on the survey itself, which is great. Can I ask one follow-up question related to this? You've mentioned several times that there's a chance to say don't know, and it wasn't listed in the original list, but it does -- In the original Likert scale on slide 15, but I think it is showing up in sort of the sample survey on slide 16, and so just to confirm that there is a space for don't know, right?

DR. MCPHERSON: There's a space for don't know, yes, and so you can see it there in the survey.

DR. SWEENEY-TOOKES: Yes. Awesome. Thanks, Matt.

DR. MCPHERSON: Yes, and I forgot to add it to the previous slide.

DR. SWEENEY-TOOKES: Well, and I have bad eyesight, and so it wasn't until I squinted at the gray that I went, hold on, and there is a don't know down there, and so thank you.

DR. MCPHERSON: In the instructions, I'm very clear about, you know, answer the ones that you're familiar with, and, if you don't know, you know, either for some of these, or if you're not familiar with one of the species groups or whatever, feel free to skip those, and so, anyway, I'm interested in having people fill it out, and then, you know, getting everybody's feedback, and also whether or not, you know, people feel like this is interesting, you know, kind of metric that we would be interested in continuing to pursue, even though we don't have the original motivation for doing it.

DR. SWEENEY-TOOKES: It's a big topic, and I'm actually really excited that you're tackling it, even if that original motivation is gone. I'm trying to figure out how to fit social value and social and cultural meaning into the entire management process. I mean, we all know it's tricky, and so I appreciate you jumping into that and looking at ways to do it. We have a follow-up question from Kevin.

DR. HUNT: Along those lines and confusion, and, yes, the don't know helps, but, you know, what if I know something about cobia, but I don't know anything about king mackerel, but they're asked in that same coastal pelagics, and that, to me, you know, creates an even more ordinal kind of approach to this, because you don't really know what species they're talking about if the person has partial knowledge of the species group, and I don't know how you can parse that out without asking it on a much more species-by-species basis.

DR. MCPHERSON: I mean, I think that that is a good point. I mean, I think that that's, you know, part of the challenge of the way that, you know, trying to answer these questions for species complexes, and so that's something that I would be really interested in, you know, getting more feedback, or having people think through what would be the best way to do this.

Again, if we did a species-by-species evaluation, that's probably the most straightforward, but it would be a very long, tedious, you know, survey, but, in this case, these are the species groups that we were handed for the previous exercise, and so, in order to match everything up, I decided to go ahead and try to ask, you know, using the same unit of analysis that was used for the economics analysis that was used for the environmental risk assessment, but, like I said, once we're freed from the risk-value matrix, we could reconsider how we would want to, you know, to do this.

Again, it's asking people to sort of -- Who are familiar with it to kind of take their best guess and see if across, you know, a larger number of experts, we get, you know, some sort of consistent, you know, patterns in terms of the way that these different species and species complexes are ranked, or whether it's just all over the place.

DR. HUNT: Yes, and I -- You know, thinking just survey design, you know, and I know how Qualtrics is good, you know, but having a species list about, you know, and check the box, and do you know something about it, or care about it, and then, you know, to reduce the survey size or the -- Yes, the survey size, and only complete, you know, these questions, based on the species you checked, you know, that you knew something about, or cared about, and, you know, that would help reduce it, but, yes, and I just find it hard to how do you parse this out, or, you know, how that information is useful when you're talking about a group that may have fifteen different species in it, and so it's -- Part of it is survey design, and part of it is, you know, we may be trying to simplify it almost too much for usable information.

DR. MCPHERSON: Yes, and those are good points.

DR. SWEENEY-TOOKES: Thank you. Jason.

MR. WALSH: Yes, and I just wanted to clarify that, obviously, you can write the species that you're most familiar with in each line, but I think where the issue really comes is where you know about two species in a complex, but they have different heritage rankings, for example, right, and like how do you deal with that? That's where I think the issue comes, right?

DR. MCPHERSON: Well, in that case, I think you would -- You would take the highest, and so if, in a species complex, there is a species that is high, in terms of heritage and traditions, high in terms of community identity and connection, then, to me, that would -- You know, that would be your ranking.

MR. WALSH: Yes, and that makes sense. Then I guess I'm less concerned. If someone has any knowledge about any of the species in the complex, then I'm less concerned about that, right, because you're at least getting some scoring for a species in the complex.

DR. MCPHERSON: Right. Exactly. If you only knew a couple of the species in the complex, then you would rank -- You would rank those, and you would write the name of the species that you were thinking about, you know, there, and, yes, you may -- Maybe there's a species you're not familiar with that could rank, you know, very high, and you might miss that one, but, again, you know, I was hoping that, you know, if we have enough surveys, we may, you know, get patterns in terms of this -- You know, the species that people are thinking about, related to those species complexes, and sort of how they're ranking.

Maybe it's not -- You know, if people are thinking about it differently, then we may just have all kinds of -- You know, there may be no patterns, and all kinds of random results, and I don't know. I'll have to see how it works out, but I tend to think we might get some consistency, in terms of the ones that are at least ranked high, and, you know, probably low, and there may be a bunch of stuff in the middle, but I have to, you know, again, see what the results are and, you know, talk to people about their experience taking the survey.

DR. SWEENEY-TOOKES: Thanks, Matt. Adam.

MR. STEMLE: Hi, Matt. This is Adam. I might have missed this while I was taking notes, but, just to ask, is there a weighting that you put to the social value dimensions categories, or are they just kind of you have like a self-weighting procedure when you determine the overall rank from the scores in the analysis from the social value dimensions?

DR. MCPHERSON: At this point, I'm not -- I haven't applied any, any weighting.

MR. STEMLE: Okay, because that was just another question for --

DR. MCPHERSON: I mean, but, once I have the numbers, it's certainly something that I could think about how -- You know, whether I wanted to weight any of these higher than other ones, and you know what I mean, but, at this point I haven't, you know, thought about how to weight, you know, the final results or anything like that.

MR. STEMLE: Okay. Thanks. That was just a question that kind of popped up into my mind when we were looking at the slide was, you know, is one category more important to the others when determining the importance of a fishery, and is, you know, the subsistence use and recreational wellbeing more important than the heritage and traditions aspect of a fishery, and I don't know, and I don't think I have the expertise to answer a question like that, and so that's kind of where I'm struggling in filling out the survey on, one, some of these things is, as Christina already mentioned, just, you know, general lack of knowledge in some of these categories. Then two is, you know, when thinking about the importance of the fishery, weighing these specific factors against each other, and that's something I just don't know if I could do myself.

DR. MCPHERSON: Right. Well, at this stage, I would encourage you not to weigh them against each other, and just to deal with each category in and of itself, but when the -- You know, when we get the final results, then maybe that would be something that we would want to discuss, as to whether we would want to, you know, weigh some aspect, like recreational wellbeing higher, than, you know, teaching and knowledge, or something like that, but at this stage, if you can just think of each category separately, if it's -- You know, then that I think would be the, the way to approach the survey.

DR. SWEENEY-TOOKES: Thank you. Kathi.

DR. KITNER: I think -- Well, this hit me from the very beginning, like looking at this, where it says subsistence use and food security, but not a major subsistence species, and like I don't know what that definition is for major subsistence, and how does that come about, and so, when you think about ranking these different categories, if this were to go forward, and in the future, and people are trying to make management decisions, are they going to weight them in their own heads and say, oh, well, it ranked low on this and that category, and, therefore, it's not really that important, and let's go ahead and put into this, and vote this action forward, and so I'm worried about there being not enough clarity.

If you are to weight these, what these rankings will do, and what it will put into the heads of people that are not social scientists, but are trying to make good decisions, and so I guess it's more of a comment, and a word of caution. Once you start valuing, you know, teaching and knowledge as maybe less than recreational wellbeing, that makes my stomach kind of flip-flop, because I don't know if we're the ones to make that decision, and how it would be used, and unintended consequences, and so that's just my comment, is to go forward with caution.

DR. SWEENEY-TOOKES: We have a hand online. If you don't mind, I would like to ask a follow-up question that related to what Kathi was saying, and, you know, thinking about going forward, you know, you mentioned this is all very new, a pilot, and, you know, this has been a rush, rush process, and I totally understand that, but I'm wondering then, and are you envisioning a stage then where this is going out to fishing communities in all three sectors, and will it be the same survey? I don't know if you've sort of wrestled with that future of it yet, or haven't had a chance to do that, but I think it sort of relates to what Kathy is saying about, you know, unintentional weighting.

DR. MCPHERSON: So, again, I mean, this is the first time, as far as I can tell, that anybody has really tried to do this, you know, at least within, you know, NOAA Fisheries, and so I consider

this to be very much a pilot, and so that's why I wanted to keep it internal, you know, and I didn't want to get it -- To let this -- I didn't want to, you know, put this survey, at this stage, really outside, because then we have to start answering, you know, a lot of questions that I don't have answers to yet, and so I wanted to run this internal, you know, a pilot survey, see how it went, have discussions with people about it, and, you know, use it initially --

You know, use it cautiously, but, if we have the risk-value matrix, at least say, hey, here's some consistent -- You know, amongst the internal experts, there seems to be, you know, two or three fisheries in each region that are consistently ranked high, and you might want to take another look at those, depending on their position within the risk-value matrix, right, something along those lines, and would I say that's -- You know, it's pretty highly qualitative, but we don't have the risk, you know, value matrix to deal with anymore, and so I would like to follow through with the pilot, and see how this works, and then, you know, get everybody's -- You know, provide some results, and then get everybody's feedback, and then think through a lot of these questions before we would, you know, put this out to, you know, fishing communities or to other external stakeholders.

You know, the next step might be, you know, working more through, you know, with council APs and talking to them about, you know, what would be cultural values of the fisheries, you know, that they have, or that they -- That's within their realms, and whether these categories, you know, capture those adequately.

In any case, as I say, it's very much a pilot process right now, and so I'm not -- I'm well aware of the dangers of just, you know, releasing, you know, some sort of rankings without having carefully thought through, you know, what -- And vetted, you know, what they mean, and so I'm not -- We're pretty far from that stage at this point, I think.

DR. SWEENEY-TOOKES: Thanks, Matt. We appreciate the situation you're finding yourself in, and so thank you for answering.

DR. MCPHERSON: I will say that the -- Since we're with a group of social scientists, that, when we're asked by leadership, we want something -- You know, we would like, you know, some sort of metric of cultural value, or social value, and can this be done, and I'm reluctant. Sometimes, a lot of times, the answer is no, and it's too complicated, you know, and there are too many variables, and how could we do this, and, you know, we don't have any good data.

I am extremely hesitant to say that I'm at least not, you know, going to give it a shot and try. You know what I mean, because we, as social scientists, you know, within the agency, we need to show that we can be responsive.

Now, if it doesn't work, we come back and say, you know what, I tried something, and it didn't work, and we have to rethink the approach or whatever, but this is also my, you know, initial response to them saying is there something you can do, and me saying, yes, I can try something, you know, and so anyway.

DR. SWEENEY-TOOKES: Thank you, Matt. Thank you for that. Chelsey has her hand up online, and then Kathi.

DR. CRANDALL: Hi, Matt, and thanks for sharing this. This is super cool to see come together and I know, like you've said, this is a really tricky thing to tackle, and so it's neat to see all of this. I'm sorry if I missed this in here, but I'm wondering if -- You know, thinking of other metrics, like the fishing performance indicators others have used, they have evaluation metrics, but also a spot where the reviewer can indicate their level of confidence, and, you know, I'm super confident this is the score, or, hey, this is my best guess, but I'm not super confident, and I'm wondering if that might alleviate, you know, some of the challenges people are having in filling this out, because I know, scientists in particular, we often hesitate, if we're not like super confident that that's the answer, and if that's something that you all have considered, and acknowledging that would add an extra layer to this all too.

DR. MCPHERSON: Yes, and that's a good idea, and I thought about, you know, adding that, and then, at the end, I didn't, but it probably would have been a good idea to add that at the end of each -- To have that as one more, and so that's a good idea.

DR. KITNER: I just want to say, Matt, that I really actually love these categories, you know, the heritage, and tradition, on and on and on, and I think it's really helpful for starting to think about fishing communities, and what they mean, and what's under the surface there, and so I commend you for breaking this out, and I know a lot of other people worked on this, but I think it's worth keeping, and working through all the challenges with it, because it's, I think, very valuable. The things that are pulled out in each category are important, and so thank you.

DR. MCPHERSON: Excellent. Thank you.

DR. SWEENEY-TOOKES: I think Kathy speaks for many of us when she says that, and so please know we understand what a really big job this is that you're tackling, and so thank you for doing it.

DR. MCPHERSON: Sure, and that's why I said I don't want to -- I hope that the fact that the risk-value matrix was suspended doesn't suspend this part, because, you know, like I said, I would like to finish -- You know, finish this pilot, and then have a chance to work it through, and it does lead you to having a lot of discussions, and thinking about a lot of, you know, areas where we don't necessarily have that much information.

I think it is interesting that a lot of us, you know, people I've spoken to, say that I don't know if I have enough knowledge about these things to answer these questions, you know, and so I think it's -- It could be a very useful -- You know, I'm hoping it could be a useful, you know, process, and that we can, you know, use this as a launching point, you know, to get, you know, more into that cultural value of the fisheries.

DR. SWEENEY-TOOKES: Absolutely, and so we're going to take you off the hot seat here now, and we've discussed a lot of the topics that have been in our discussion questions, and so, SEP, I just want to open the floor. Any last thoughts or responses you had to any of those discussion questions we've been tasked with as we wrap up this agenda item? Kevin, did you --

DR. HUNT: This is Kevin again, and I was going to echo what Kathi said. I think your criteria and your definitions are good. You know, my point earlier was the specificity of what they're answering, and Chelsey's comment about how confident you are, and I think your measurement of

that for the person filling it out would be great, but this is going to be a subjective survey of experts, and it's give us your best professional attempt at answering these questions, and you can check the box how confident you are in that, but I think that, you know, there's going to be a lot of subjectivity on it, but I think the criteria and definitions are great, like Jennifer said, and it's just the specificity of what they're answering, and I think that, the further you move away from a species, this gets a little trickier.

DR. MCPHERSON: Yes. Absolutely. It's tricky, no doubt. The level of confidence, yes, I should have added that, and so that's definitely something I -- It would have been good. I should have added that.

DR. SWEENEY-TOOKES: The best surveys we ever write are the ones we write in our heads when we're done writing the survey though, right, and so other thoughts, or other items we want to make sure go into the discussion questions? Jason.

MR. WALSH: I was just looking at the discussion questions on the screen. I guess if you're online, you don't see them, but, when we're talking about the use of the economic estimates, and so the question here is are value-added economic impacts a good metric to use as a proxy for economic importance of a species, and I think it's a really good indicator of the economic contribution to GDP, but you have to think about what goes into that, right, and so it's based on trips by mode in the area, and so a species that is very heavily pursued by the charter industry is going to be elevated.

Those are expensive trips, right, and so there could be species that have more participants, more trips that are valued lower than valued in this exercise, lower than species that have less trips by a particular mode, which might be fine, might be appropriate, but it's just -- I think it's important to think about, I don't know, angler welfare, if that's an economic -- Or, you know, another interpretation of economic importance, and then that's kind of captured in the recreational wellbeing in the social value analysis, but that is only given a weight of 20 percent, if these are, you know, whatever, evenly weighted, and then you're comparing that to this economic value.

I don't know, and I'm just struggling to see how we can use these two, and get at the full picture, and the same with the commercial. Like commercial -- If you look at, you know, Gulf shrimp, right, and that's dominating that figure, and so maybe someone might interpret that as Gulf shrimp is doing really well or need -- I don't know, which is obviously not the case, or needs more council resources, which I don't think -- It doesn't seem to me that the problem is lack of council resources.

There's so much more going into that, and so I think there's just more -- It's more to the story, and I just want to make sure that, through this exercise, that story comes out, and I don't know, and I'm trying to wrap my head around all this, and stay away from the last question, which is moot now, I guess, that we're not -- That the council isn't using this, or explicitly, and I guess I'm kind of just rambling, but I'm a little worried about the weighting that will be put on the economic contribution estimates, versus the story behind what's going into those estimates, if that -- Does that make sense?

DR. HUNT: This is Kevin, and I had a similar -- I think you're referring to the graph from the economic thing, and it was just, you know, to me, I was just interested in why is the Gulf up, you know, high on everything, you know, and is that because of effort, or is that because of higher trip

costs, or is that because of a higher multiplier, or a combination of all three, and I guess you could look at each species.

It may be a different answer to that, but I don't know if Jason was talking about -- It would be nice to see a per trip, especially maybe on the recreational stuff, to -- You know, it may be golden crab down here, or something with deepwater bottom fish, and it may be small on this graph, but the per trip cost was very high, compared to other species, and it's maybe a rare-event species, or something like that, but I don't know.

I think there's more to the interpretation than just this one graph. I think maybe if the data was presented in a few extra ways, have a few more graphs in there to kind of explain that value, it may be useful. I don't know if that's what Jason --

DR. SWEENEY-TOOKES: Chelsey put her hand up in the middle of this as well, and so, Chelsey, do you want to jump in right here?

DR. CRANDALL: I can jump in real quick. I was just going to speak to the discussion questions on the social values, and echo what was said for the record, that I think the categories are great. I think the concepts are distinct, and easy to interpret, and I do think it would yield useful information. As was said, I think, at a minimum, identifying major social science data gaps, where, even in the pilot, we see people not really having much information, would be really useful.

DR. SWEENEY-TOOKES: Thanks, Chelsey. Jason, did you want to respond, or I see Adam has his hand up as well.

MR. STEMLE: I was just going to go back to the value-added. I think I get what Jason's concern is also. If you're only looking at impacts, and you're also looking back at the social categories, where it has angler wellbeing, if we're evaluating this just using value-added, if a fishery experiences a decline, an angler can substitute into doing something else, but the money, or the contribution, that they are spending on recreational activities will remain the same in the area. They're just doing something else, and so the overall quality, or impact of the angler, is diminished, but that's not getting captured if we're just using value-added economic impacts.

The problem with that is where my mind flips is what would be a better metric to use, and, well, it would be consumer surplus, or willingness to pay, and what we talked about yesterday is we have a very large gap in that information, and so it's just a difficult question to get at, but I'm not sure -- Just in the context of answering that question that's on the screen, I'm not sure it's the best, because you're not going to capture the actual importance, I think, with using value-added, because the money can be sent into other areas that anglers can participate in other recreational activities besides fishing, and so I think that will get washed out, but, where we get another metric to put in that place, I'm not sure.

DR. SWEENEY-TOOKES: Matt, go ahead.

DR. CARTER: This is David. There was a whole bunch of things that just flew around there, but I just wanted to try to address a couple things. First, as a group of economists, when we met, none of us agreed. We all agreed that value-added wasn't the best method. We all were leaning towards surplus, welfare estimates, consumer surplus, producer surplus, and this was -- You know, we all

agreed that was the way to go, but we just didn't have the information to do that for each individual species group all around the country in a short order, and so that's why we moved away from the surplus measures, even though that is the way that you should do this. That's the one thing.

The other thing is there was, I guess, some discussion about what goes into this, what is driving the high numbers. On the rec side, everything is driven off the target trips, and so, the more target trips there are, the more trips there are in a particular region, the higher the numbers are going to be. The estimates that we used for expenditure did not differ by species group, and so it was only, you know, here's the expenditure on a trip that took place in Florida, for example, versus North Carolina and so it differed by state, and then differed by mode, and so it was already noted that, yes, charter trips, if you have an area with a lot of charter trips, then those tend to be more expensive, which is why those would rank higher.

It's most notable in this table with HMS billfish, tunas and things like that. Those are very expensive trips, even though there's not that many of them, but, again, everything is driven off of target trips, which I think someone was also mentioning, or, you know, commenting that this could lead to maybe -- Well, maybe someone didn't mention this, but I'm going to mention it.

In the case of a species where it's been closed for a while, like, for example, red snapper in the South Atlantic, there are no target trips. Even though we know that that is a valuable fishery, it got no input into that species group, because there have been no target trips for it, and so there are all kinds of things going on that make this less than ideal, but this is what we decided as a group that was the way we had to proceed in the short amount of time, and this is what we were able to put together, but, yes, if this is something that is an ongoing concern, then we would have to rethink the approach.

DR. SWEENEY-TOOKES: Adam.

MR. STEMLE: Dave, can I ask a quick question? With the target trips, is it possible to use directed effort, and so using catch and target trips, or would there be too much double-counting going on in the value-added calculation there?

DR. CARTER: No, you can't do that when you're talking about species groups, because we wanted to assign -- Every single trip had to be assigned to one group.

MR. STEMLE: Thanks.

DR. CARTER: So if you tried -- We went through a whole bunch of options in trying to assign, and this was the cleanest way of doing it.

DR. SWEENEY-TOOKES: Thank you. In the interest of staying near to our original schedule, I think we'll see if there's any last burning questions, or things we want to make sure get on the record. I've seen lots of people diligently taking notes during this, and thank you very much, and thank you so much then to the whole crew down there. I think you're all in the same room, and we appreciate you coming to present this, and for handling all of our questions, even in these uncertain times of where this is going, and so thank you very much. Let us take a very short bio break and come back here and get started on our last agenda item.

DR. MCPHERSON: Thanks a lot.

(Whereupon, a recess was taken.)

DR. SWEENEY-TOOKES: We are moving on to our final agenda item, Number 9, Fishery Performance Report Text Analysis, Agenda Item Number 9, and I'll be turning this over to Christina to introduce this item.

FISHERY PERFORMANCE REPORT TEXT ANALYSIS

MS. CURTIS: Thank you. I just wanted to really quick provide the SEP with some context on why this work is being done and presented to you all today. I'm sure you know, because we've talked about it at a couple of different SEP meetings, but our advisory panels complete what we call fishery performance reports, which is, you know, a series of questions.

We ask them generally the same questions every time we do a fishery performance report on a given species. There might be some modifications here and there, but really the purpose of these fishery performance reports, which are really open-ended discussions with our advisory panels, is to provide information that can be valuable both for the science and management processes, and so fishery performance reports are provided to -- They are working papers as part of the SEDAR process, and then they're also provided to the council to consider in management, and, right now, the way they're put together is just sort of text-based.

There's, obviously, meeting minutes that you can go back to, and staff works to summarize those meeting minutes, but it's just a document that is text explaining what the AP discussed, and we really want to make sure that this information is utilized in the SEDAR process and at the SSC level, and it seems like, right now, maybe the way it is presented is not engaging enough, because we're not really seeing it used at the level we would like, given how critical fisherman experience is on the water is to informing the science process.

One of the things we've talked about is, if you've ever been to a Gulf meeting, you've seen their Fisherman Feedback tool, and they do a lot of text analysis on that, and then present that as part of their SSC process, and so we've sort of struggled with how to do something similar with our fishery performance reports, to make them more engaging, given especially things like time and resource constraints.

I would love to be able to do detailed surveys, but the council can't do surveys, because of PRA. I would love to be able to do detailed, you know, text coding analysis with fishery performance reports with public comment, with other, you know, qualitative information we have, but, unfortunately there's not time really to do that sort of in-depth analysis, and so what this is is almost sort of a meeting of the minds.

Emily spent time very patiently sitting in my office as I explained to her sort of, if I were going to do a text analysis, just sort of by hand, just me, these were sort of the things that I would do, the things I would consider looking at, and she took that information and sort of automated it in R, using a little bit of AI, so that we could have a product that will hopefully be informative and really engaging for scientists that are involved in the SEDAR process and the SSC process to use to help

inform some of the decisions and discussions that they're asked to have, and so just wanted to provide that context before I turn it over to Emily, and she can tell you about all of the great work that she did to make this happen.

MS. OTT: All right. Thank you, Christina, for that context. It's very much appreciated, and so the last presentation. Almost there, and so I am Emily Ott. For those that I have not met before, I am the SEDAR Coordinator for primarily South Atlantic, Caribbean, and Highly Migratory Species stock assessments, all of which I will not be presenting on today, as Christina mentioned.

This presentation is about our little side quest, our side project, on fishery performance report text analysis, and so I am by no means a text analysis or qualitative analysis expert, and so I'm very much looking forward to the feedback you all have on this project, to hopefully kind of polish it up and give it legs and get it ready for prime time.

All right, and so the three main sections on this presentation I'll be going over is first the background and motivation for this project, which is to ultimately provide another opportunity to incorporate fishermen knowledge into stock assessments, and then I'll be discussing the products that came out of this text analysis, the first being the Reel Insights internal document, which is Attachment 9a in your briefing materials, and then the Reel Insights external public-facing document, which is Attachment 9b in your briefing materials, and thank you to AI for that pun title. I did not come up with that on my own. I'm not creative.

Then I'll be going over next steps for this project to really give it legs to move forward, and I'll be explaining what exactly I mean by categorizing the lexicon, and then hopefully we'll be discussing potential future utility of these text analyses, and so Christina and I brainstormed maybe expanding this on to public comment, so expanding it beyond the fishery performance reports.

Christina already kind of explained this background and context for this work, but, just to reiterate, the ultimate goal was to provide another opportunity to incorporate stakeholder insights into stock assessments, and we really wanted to do this by expanding upon a resource we already have in place, and so that resource being fishery performance reports, and so I'll be referring to fishery performance reports as FPRs throughout the presentation, and Christina did a fantastic job explaining what exactly those reports entail.

They are produced after council advisory panel meetings. The advisory panel is asked, by council staff, typically a standardized list of questions to better understand, you know, what's happening in the fishery, what are the advisory panel members seeing on the water, and this gets compiled into a report that's purely text, and so all of the results I'll be showing on the text analyses are all based off of the specific fishery performance report for red snapper in November 2020, and so something to keep in mind as I start showing results.

On the right-hand side, I created a little figure to show the current avenues we have in place for stakeholder knowledge to be incorporated into stock assessments, the first being public comment, both through the council process and the SEDAR process. All SEDAR assessments that are underway have public comment opportunity, both online and in-person, and then fishermen can also be appointed to roles in the SEDAR process, either as data panelists or appointed observers, and then that last opportunity, or avenue, is the fishery performance reports.

We were hoping to expand upon this fishery performance report, maximizing, you know, the value of the feedback that's included in these reports, and putting together this text analysis that creates a more visual, clear way to easily interpret the results from these reports.

The two products that we produce from this project is first that internal document, and so I'll be defining the purpose of this document, explaining some of the methods and some limitations we encountered, and then I'll be talking about the Reel Insights external public-facing document, and I'll be defining its purpose, showing some results that we found most insightful, and then going over some potential applications that I'm hoping to get you all's feedback on.

All right, so first the Reel Insights internal document, and so this document is self-explanatory, and it's internal, for internal use. It's for text analysis users, and this is hopefully to document our methods we used for these text analyses, and so, that way it's a quick, repeatable, and standardized analysis for moving forward, and we hope to be able to, you know, put multiple fishery performance reports through these analysis and generate some easily digestible results.

We did not reinvent the wheel here. As Christina mentioned, our code we used for these, for the text analysis, was modeled off of the Gulf Council's Fisherman Feedback tool text analysis, and so they were very kind in providing their code, and then we modified it to cater towards, you know, what we wanted, the information we wanted to get from the fishery performance report.

There's a big difference between the Gulf Council's Fisherman Feedback tool and the South Atlantic's counterpart fishery performance report, that key distinction being the fishery performance report has a list of standardized questions that is asked to the panel, where the Gulf Council's Fisherman Feedback tool is more of an open-ended questionnaire, and they provide prompts to users for information that they are specifically looking for in the fishery, and so that's a key, you know, distinction that I wanted to make to keep in mind moving forward.

There are two software that I used for the text analyses, the first being R studio, and the second being ChatGPT AI, and so, on the right-hand side, I wanted to provide a visual of the text analyses that Christina and I performed. Some of these analyses kind of built off of each other, and so I wanted to provide a graphic so people can see the kind of sequence of how we built off of the text analyses to produce some more complicated results.

The first step for all the text analyses was to clean the data, the data being the transcription from the fishery performance report discussion at the advisory panel meeting, and so, to clean the data, we removed any responses from council staff, as they were the ones that were facilitating this discussion, and they were not providing stakeholder insights, and so we removed those responses, and then removed punctuation, and a few other things to clean up the data, all of which are documented in that internal document. Then, from there, we were able to generate some pretty simple text analyses, such as word frequencies and thematic analyses.

I labeled all of the analyses in this graphic with either an R, to reference that it was done in R studio, or a C, to reference it was done in ChatGPT using AI, and so, as I mentioned, some of these analyses built off of each other, and so, for example, the thematic analyses that was done in AI, from there, we were able to produce text clustering and correlation matrices in R, and I'll be showing some of the results from these analyses in a few slides.

All right, and so there were a couple obstacles that we encountered while performing these text analyses, the first being that the fishery performance reports do have standardized questions, and so it's important to keep in mind that all of the results that we get from these text analyses will always be a product of those questions, and so we want to be sure we're not confusing causation with correlation, and it's just something to be mindful of when interpreting the results.

The second obstacle we encountered is that AI algorithms learn from the user, at least the ChatGPT AI platform I use, and so I'll be excited to hear if anyone has, you know, other AI platforms that they use, and so this subjectivity can really introduce user bias into our thematic analyses, and so one solution for this is to validate all of the results from the AI analyses and compare it with a hand-done text analysis, and so Christina and I did do this for the fishery performance report for red snapper, and we actually did get very similar results, which was very interesting, and so that's, you know, a solution for moving forward, but the reason we wanted to use AI was to sort of streamline the process, because, as Christina said, time is a constraint, and so we wanted to be sure that we're streamlining the process as much as possible.

All right, and so now moving on to the external public-facing document. As I said, this document is for documenting the feedback from the fishery performance report in a way that's clear and visual, so people can easily digest the results from the fishery performance reports, and this is for anyone in the public, whether it's fishery managers, fishery stock assessment scientists, or just the general public.

Now getting into some figures and results from this analysis, and so the first visual up here, the first figures up here, is just a very general response breakdown. On the left-hand side is the responses by sector, and on the right-hand side is the individuals by sector, and the sector colors are blue is for-hire, red is private recreational, and green is commercial, and I wanted to provide these figures up here first, before diving into any other results, because I think it provides really important context when interpreting the future results.

As you can see, comparing the individuals by sector, and the responses by sector, some individuals were a little more chatty than others, and so that's important to keep in mind when interpreting the results later on, and, also, the for-hire sector is the most represented sector in these responses.

Now getting into some general sentiment analyses, and the next few slides will all be on sentiment analyses, and so the first step, as I mentioned, for all these analyses are to clean the data, and then, in order to get to the sentiment analyses, we performed a simple word frequency analysis to identify common words that were used in the fishery performance report responses, and then, to go from word frequency to the sentiment analyses, we first had to define the lexicon library, which is essentially that library of words that were identified as commonly used in the fishery performance report responses.

To define that library, we applied sentiment, either positive or negative, to those words, and so, for this specific analysis, I'm the one that assigned sentiment to these words, but I do not think I'm the appropriate person to be doing this, and so I'll be very excited to hear you all's feedback on, you know, what party should be approving and assigning sentiment to these words. Should it be the advisory panel? Should it be the SEP? The council? I think that's really important to establish a protocol for that.

Then, from there, after you define the lexicon library, we were able to generate a simple sentiment analysis to compare words that were commonly used with negative sentiment versus positive, and so some of the words that were used a lot with negative sentiment around the 2020 red snapper fishery were discards, shark, issue, and there was a lot of conversation on shark depredation, and then, for the positive words that were often used, they were catching, substantial, abundance, and so all words to kind of say that they were catching a lot of red snapper.

Now this is still a sentiment analysis, but now this is within the context of the South Atlantic coast, and so an important -- A couple of important notes here before interpreting these results. The advisory panel members had to list what state they were located in at the time of their advisory panel application, and so that is the state that they were assigned to all of their responses for the sentiment analysis, and so that's the first thing to keep in mind, and then the second thing to keep in mind is so the negative sentiment is red, the positive sentiment is blue, and then we also have, on this map, green for neutral sentiment, and I did not assign any words a neutral sentiment.

This result was produced when a response did not contain any of those words in the lexicon library that had positive or negative sentiment, and an important note here is that I had applied kind of guardrails to the R studio analysis of the sentiment in this geographical context, and so any words, five -- Any words, five words, before or after the terms red, red snapper, or snapper were identified and searched for positive or negative sentiment, and so say there was a negative word six words prior to red snapper, and that was not included in this analysis, and it would be deemed a neutral response.

The reason I applied these guardrails was because some responses included multiple species in one sentence, and so maybe they started talking about vermilion, you know, later in their sentence, and so I thought it was important to place some guardrails there.

All right, and then the next sentiment analysis is sector-specific, and so you can see the three sectors of commercial, for-hire, and private recreational, and, if you remember back to that response and individual breakdown, the for-hire sector was the most represented sector in these responses, and that's also where the most negative sentiment around this fishery is coming from, and so that's an important thing to note, remembering back to that response breakdown.

All right, and so now moving on to the thematic analysis, and so this was the only analysis that used AI, and what we did was we created a standard prompt, and so that language is included in your internal document, and that prompt was pasted into AI along with the data from the fishery performance report, and so that transcription, and that prompt essentially said, you know, produce this output of however many themes with correlated sub-themes and keywords, and then it generated this table for us.

Then, from that thematic analysis, we were able to build off of that and add that output from the thematic analysis into R, and ask R to generate correlation matrices, which I thought was important to identify underlying themes that are linked within responses to the fishery performance reports, and so these -- This is the only -- These were the most insightful, I think, results we got that I showed here on the presentation.

There are some other figures and results that we looked into that are documented in your internal document, but I wanted to show, you know, those that we felt were most useful, and then some

applications of these results that we were thinking could be of potential use was, first, we could use this external public-facing document as a SEDAR stock assessment working paper, which is the current application of the FPRs, as Christina mentioned.

The second application is potentially presenting this to the SSC before the review of a stock assessment to provide some context to, you know, what the advisory panel is seeing in the fishery, and then the third potential application is presenting this during a SEDAR stock assessment process, which I think the most appropriate stage to do that is the data stage, and this is what the Gulf Council currently does to present their text analyses for their Fishermen Feedback tool.

Some next steps for this project. First, we need to address some of the challenges we encountered, some of those obstacles, such as further investigating the AI algorithms to really understand how this user bias is impacting our results, and then we need to determine who is identifying sentiment to this lexicon library, which party should be doing this, and should we be reassigning, or reassessing, sentiment of the lexicon library every fishery performance report, because maybe a word that explains red snapper is positive, but, talking about vermilion, it's negative, and so, you know, establishing a protocol, so we can be consistent with that is important.

Then potentially talking about future utility of these text analyses, such as applying it to public comments, as I feel like this has been a conversation throughout the SEP, and there's a lot of great feedback from fishermen and stakeholders that has already been provided, and so I'm really interested in kind of maximizing the feedback we already have. Before I ask you questions, does anyone have any questions for Christina or myself?

DR. SWEENEY-TOOKES: Questions from the SEP?

MS. PACKAGE-WARD: I mean, with sort of like dividing it up, if there's like a sentence with two thoughts that sort of like contradict each other, like would it be helpful to do some pre-work and like, I don't know, divide those out? I know that's not -- That's a human being involved, but just thinking that might help a little bit.

DR. SWEENEY-TOOKES: Kathi, and then Jason.

DR. KITNER: I have two quick questions, and so one was you had the geographical location mapped, and I was wondering -- That's when they signed up for the AP, but did that reflect where they were fishing or their experience that they were talking about?

MS. CURTIS: That would be -- So I would say anecdotally, based on my experience doing fishery performance reports with fishermen, yes, usually the area they are talking about is consistent with the area that I know them to be from, from their AP application. That being said, we do sort of prompt them to mention where they're talking about specifically, and so, if you look through the text, it does say, you know -- You'll have fishermen saying, you know, in Morehead City, or in, you know, the Outer Banks, or in southern Florida, and so they do typically, when they're making these comments, note the area that they are talking about, because we do have some fishermen that I can think of, like on Snapper Grouper and the Mackerel Cobia APs, that are listed as one state, but I know for a fact fish in North Carolina and in Florida at different times of the year.

DR. KITNER: A quick follow-up, and another question, about your guardrail testing, and like have you explored like expanding the guardrails, and then dropping them down and then seeing what the difference might be in specificity and things like that?

MS. OTT: I have not, but it is in my notes for next steps, and so I will highlight that in my notes.

DR. SWEENEY-TOOKES: Thank you. Jason, and then Chelsey.

MS. WALSH: Awesome. Thank you very much for this presentation. I think this is awesome work. I had a question about thematic analysis, and I'm sorry if this is a silly question. I don't -- I'm not super versed in it, and so it seems like a lot of the top keywords are in all of the topics, and what is -- Does that matter? Is that a problem? I don't -- I guess I don't know how they fall. If, you know, people's comments fall in multiple of these topics, if that matters or --

MS. OTT: Thank you. I did notice that as well, but, in kind of researching how AI works, specifically the ChatGPT platform, I learned that it doesn't handle negatives very well, and so, if you say, you know, here's my prompt, and produce these results, but exclude repetition between themes, apparently it doesn't handle that very well, and so I took a note of that, but I'm not sure -- Christina handled this by hand, and I don't know how you think we should move forward with addressing this.

MS. CURTIS: I do think that's a challenge, and, when I do it by hand, I do, to the extent possible, try to avoid a comment that would -- A single statement that would then go into multiple categories. I think some of that might be addressed, from a ChatGPT standpoint, maybe by separating things out a little bit more, the way Christina recommended, so it's not -- It's seeing the full text of what someone said altogether, and it's not being broken out into statements the way I as a human being tend to do thematic analysis, and so I think that's part of the challenge.

One, a fishery performance report is being based on a series of questions and then, two, trying to do it in a consistent, but faster way, because cleaning that text data, and breaking it out into individual statements, is easy to do by hand, and I don't know how easy that is to do computation computer-wise.

DR. HUNT: Kind of as a follow-up, and so how do you do it is a true content analysis, where you're basically breaking up the statement, but, because the question was asked of red snapper, you don't have to worry about the keywords overlapping, because you specifically asked about red snapper? Okay, but you're doing a true kind of content analysis, where breaking it up by statement, then sorting your cue cards into -- Okay.

DR. SWEENEY-TOOKES: Chelsey, you're up next.

DR. CRANDALL: Thank you. I'm super excited about this. This is really cool to see, and so, sort of similar to the last one, I don't have much experience with sentiment analysis, and so this question is coming from a place of somewhat ignorance, but how does the analysis handle terms that could be either positive or negative, because I'm thinking specifically of catching and plenty and substantial, and I could see that being a positive thing or a negative connotation, depending on who is speaking. You know, I'm catching too many, and I can't catch anything else, because all I'm catching are red snapper, et cetera, and so how would a sentiment analysis navigate that?

MS. OTT: Thanks, Chelsey. When looking at the sentiment analysis, and so, as I had mentioned, Christina and I were the ones that actually applied sentiment to the lexicon library, and so that was the user that was identifying, you know, what word was negative versus positive, and we definitely encountered that predicament, where some words could be either, and so that's why I think it's really important to establish a protocol and a procedure for who is assigning and approving the sentiment to this library of words, because it's heavily going to impact the results.

MS. CURTIS: I'll say, and so I'm also not an expert on sentiment analysis, and so this might be a little bit of the blind leading the blind, but there are sort of preset lexicons that identify things as positive, negative, or neutral that are regularly used in sentiment analysis. One of the very challenging things with applying this to fisheries is taking that lexicon and then sort of doing what Emily is talking about, is modifying it to fit in a way that makes sense for fisheries.

You'll notice, for example, the term "shark" is typically, in almost all lexicon libraries, considered a neutral term, whereas, in fisheries, especially with, you know, fishery performance reports, what we're talking to our fishermen about, shark is almost always using a negative context, and so we have been sort of struggling to grapple with how to take lexicons that weren't built for fisheries to do exactly that and modify it so that it is capturing more of a fisheries-oriented discussion.

DR. CRANDALL: That all makes a lot of sense. Thank you.

MS. PACKAGE-WARD: I guess -- Sorry if I'm not understanding correctly, and so this would like replace what you currently have in the reports or -- Because I really -- I mean, I like -- This is exciting and new stuff, but I also really like what's in there already, and think it's super valuable.

MS. OTT: Christina, please correct me if I'm wrong, but I think this is supplementary to that, and so this is just an additional, you know, visuals, and figures, and another way to interpret, rather than just reading all of the findings in a text format.

DR. SWEENEY-TOOKES: I see Chip coming to the table. Jason, go ahead, and then Chip.

MR. WALSH: I just had a question about the correlation matrices. Are these produced by AI? It was unclear to me how you came up with the categories.

MS. OTT: So I used AI for that first step to generate the thematic analysis, and so the table on the previous slide, and then, from there, I used this output as my input in R studio to generate the correlation matrices, and so I did use AI to generate, you know, the themes and everything, but then I used R studio to actually produce this correlation matrices.

MR. WALSH: Maybe I'm being dense, but I'm not seeing like a direct connection between the theme and the -- Am I missing something? Are these not -- These aren't direct, right? You've got one, two, three, four, five, six, seven, eight -- Where are those explicitly coming from in the thematic analysis?

MS. OTT: We had generated a couple different tables and correlation matrices, and so I would have to double-check. I may have accidentally included another table we produced in the thematic

analyses as the, you know, first step for these correlation matrices, but typically they should be direct, yes. Thank you.

DR. COLLIER: Thank you, and, you know, another use for -- One of the reasons for trying to put some quantitative values, or some figures, into it, is, when people are reading these fishery performance reports at a SEDAR assessment, quite often it's just text, and people are flying through thousands of documents in order to put an assessment together, and this will give them some figures to look at, to basically get some ideas out of, and, you know, Emily is probably more familiar than most of us, with all her experience at SEDAR, but, you know, I think having some of these figures in there will make them more useful during a SEDAR stock assessment.

It's going to give some directionality, and then, over time, you know, as we get these developed, you can go back and look at how are these fishery performance reports actually doing compared to stock assessments? You know, are they saying, during high abundance, the fishery seems to be doing well, and are there some correlations to it, and that can help us, you know, figure out how do we change our analyses, the thematic analysis, or the lexicon, in order to get things better. You know, we're going to have a static fishery performance report, and we have the verbatim record, and so we can go back and reanalyze based on our findings, positive or negative.

DR. SWEENEY-TOOKES: Thanks, Chip, and I do want to applaud you both for doing this. This is a big task that you are taking on. I know that this has been something weighing on you for a long time now, trying to figure out how to take this vast quantity of qualitative data and somehow translate it into something, like Chip was saying, that's immediately accessible and easy to look at.

I remain deeply skeptical, concerned, about using ChatGPT, as I'm sure you are as well, and so I am heartened to hear that you will also be doing some backup checks, making sure -- Even things like looking at this table, and like it has interpreted these, quote-unquote, themes, that are really just topics, right, and it's not actually saying anything to you about red snapper catch abundance. It's just saying people talked about it, right, and so there's still definitely going to be that human interaction that's absolutely necessary there, but it seems like you're taking some really good first steps, or not first steps, but twentieth steps in this process, right, and so thank you for that. Kevin.

DR. HUNT: Yes, and I like the correlation matrices, too. I'm trying to understand it a little, and so, when you got into R, what are we looking at here in terms of a correlation? Is it for every theme that was mentioned in terms of a count number that this other theme was mentioned with it X amount of times, and that's the correlation, and I'm trying to -- How do you find out a negative correlation here, which you have? What is that analysis? How is it coming up with a negative?

MS. OTT: I might have to look at the code and get back to you on the specifics for that, but my understanding was that it was looking at -- It might have guardrails, similar to the sentiment analyses, where it, you know, applied neutral sentiment if it was within -- If it was outside of the guardrails, and I think it might be looking at the same thing for -- It's assigning a negative if it's beyond the guardrails of the data, and so, essentially, if one of the responses mentioned one theme, and then the second theme was mentioned, you know, fifty responses down the line, I think that's how it was assigning a negative, but I definitely want to double-check and get back to you on that and be able to define that confidently.

DR. SWEENEY-TOOKES: So SEP -- Christina, did you have your hand up? No. Can we just direct our attention briefly to the discussion questions that we are given here, to make sure we cover this? Is there someone online? Chelsey, please start, and everyone else look at those discussion questions. We're going to come back to those in just a minute.

DR. CRANDALL: I was somewhat transitioning to discussion questions too, thinking about solutions to obstacles, and I know there was the question about other potential platforms, because I know ChatGPT has its pros and cons, especially in this context. I know folks have been using Claud, and have had good success with that for thematic analysis, but I can say too, if you all aren't familiar, and haven't explored this, a lot of the qualitative analysis software is creating their own AI, and so Drew Malinak, on our team, for example, has the AI MAXQDA, and he has found it pretty useful for these analyses, and so happy to share more about our experiences with those software, too.

I don't think Matt is on the call anymore, but I know that they have a whole initiative looking at AI for qualitative data analysis that could probably yield some really cool stuff in the coming years too that may help with this, and so I think some of these other software may help with some of these challenges.

DR. SWEENEY-TOOKES: Thanks, Chelsey. Kathi.

DR. KITNER: You might want to look into NotebookLM. It's free, and you can have up to, I think, 400 documents in it, and I've used it a lot for qualitative data analysis, and it can do thematic analysis, and you can prompt it specifically, and it's good. It's made by Google, but no bias there for me. I just -- I like it as a tool. It's really clean, and it doesn't go out to the internet and pull other stuff. You can just bind it like that, and so it's also private, and so it's not sharing data and stuff like that, and so just check it out. NotebookLM.

DR. SWEENEY-TOOKES: Thanks, Kathi. I think we were all writing that down. It's something to go look at then, and so we do have discussion questions about determining lexicon, whether that should be council or SEP doing it, and what sorts of additional text analysis should be explored, and how the results should be presented. Questions, comments, and when should they come up during the SEDAR process, and what are some future uses for the text analyses? Would we like to see them used in for public comment, to analyze public -- Yes. People are nodding that we would like to see you do that with public comment.

We talked about a little bit of these, the obstacles related to the AI algorithm bias, standardized questions, and we did talk about the differences between topics and themes, and the need for human eyes there still. Christina.

MS. PACKAGE-WARD: I feel like the way that the Gulf Council kind of uses it -- To me, it seems like it's a really helpful tool to like -- Maybe people can feel like they're being heard, and so maybe not necessarily, you know, to inform anything, but know that like the information is being considered in some way, and that they've been heard in their comments, and so like I like the idea of it being used for public comment and a way to kind of report back what's been said.

DR. SWEENEY-TOOKES: Thanks, Christina, and, speaking of the lexicon, I think we discussed that a little bit earlier, that it's tricky, right? You could say "catching" and it could be catching a

lot, or catching nothing, right, and so catching doesn't really tell you anything other than they talked about catching, right, and so before even -- I guess, before trying to determine a lexicon, acknowledging a lot of words are going to be value neutral until you look at the twelve words surrounding them. Word trees, they don't -- Jason.

MR. WALSH: Along the point of being heard, I wonder -- Since you are kind of using AI, and this can kind of be rapidly produced, I wonder if, in real-time, you could, you know, create a summary of public comment to the council, and be like, okay, you just heard fifty people saying, like speaking to you, and then come back with, you know, the next day, or two days later, or three days later, and say, okay, this is kind of our real-life summary, or quick summary, of what you heard, because it can be a lot to hear, or to be submitted, you know, and obviously large documents. I don't know if that could be a tool that the council might like, but maybe not. Maybe that's a question for them, and I don't know.

MS. CURTIS: My one thought is that I think we would need to test out how well AI does listening to a recording. Right now, we're doing it based off transcripts, which obviously take time to prepare, and thus prevents sort of any real-time analysis, but technology has come a long way, and my assumption is that it might be able to just listen to a cropped audio and do the same thing. That's something we would need to explore.

DR. HUNT: I don't know if Jason is asking that, but I think I brought this up last year. What would it take for you guys to get to the point where you see the Amazon review of all the comments, the fifty comments that people made that give a short summary of -- You know, that you see on Amazon that says here's a review of this product, and how far are you from that, and is that even possible?

DR. SWEENEY-TOOKES: But have you ever actually read down and looked at the comments and compared them to the AI summary, because it's often completely off. Just for fun, right? This is something that interests me, and so I don't know that it's a great model either.

MS. CURTIS: I would say my knowledge of how that works is too limited to be able to say how close or how far we as the council would be to do something like that. I would say, without understanding the technology at all, it would certainly be a while, because we would need it go through multiple rounds of review to make sure that, you know, we're sort of addressing any issues like what Jennifer just brought up.

I'm thinking of, you know, we've had issues with the Google AI. For example, if you Google red snapper regulations in the South Atlantic, the AI summary is not necessarily giving you accurate regulatory information, which is not something we can control, but doing something like that for comments, I think, would be far off, in terms of all of the QA/QC we would need to do, and then I can't speak to the actual technology and how close or far we could be from that, because that's a little bit out of my knowledge range.

DR. SWEENEY-TOOKES: All right. On that note then, any last thoughts for any of these topics on this agenda item before we start to wrap up? Anyone in the room? I have not checked for a public comment in a good long while. Do we have any public comments? Chelsey. I'm sorry, Chelsey.

DR. CRANDALL: You're fine. I know it's weird when I'm online. I'm really struggling to answer the who should determine the lexicon. I know that's a tricky one, but, when I was thinking through it, I was wondering if, instead of neutral, some of those could be categorized as uncoded, or uncategorized, or something like that, because they're not -- From my understanding, they're not necessarily neutral. We just didn't have them in our lexicon, and maybe there's a category that might help with some of these complex ones, but I really -- I know we haven't answered this question for you, but I don't really have an answer either. I don't know if anything has come to mind from others.

DR. SWEENEY-TOOKES: Thanks, Chelsey. Well, please continue to think on it. If inspiration strikes later, share those thoughts in the notes documents, or with Christina and Emily directly, I'm sure, but, with that, thank you so much you two for all your work on this, and for your presentation, and this takes us into the meeting wrap-up, and so other business. Anything else we should all know about, or things coming up? I'll open that one to the room. A question has been raised about chairships and term limits. John, can you fill us in?

MEETING WRAP-UP

MR. HADLEY: So, just thinking off the top of my head here, I don't think there is a chair term, and so, in the past, we've just kind of -- There hasn't been a term limit to it, and so, you know, if that's something that the SEP is interested in, we could come back to you at the next meeting on that. You know, we're happy -- We can discuss that and come up with, you know, an additional feedback session, if you will, on, you know, should there be chair term limits, and, if that's something that the SEP is interested in, we can come back to you with it.

DR. SWEENEY-TOOKES: Thank you, John. Jason, vice chair, what are you thinking?

MR. WALSH: No, and I just remember, last time there was a chair and vice chair change, it was motivated by the requirement that the chair and vice chair have to be members of the SSC as well, and so just also worth keeping in mind.

DR. SWEENEY-TOOKES: The pool, the potential pool, did shrink, but, yes, maybe this is something we can put on our next agenda, to just come back to discuss if we wish to change leadership. Thank you.

MR. HADLEY: Again, you know, not a decision we're going to make today, but, you know, maybe we could come up with a, you know, liaison position, and I don't know. If the goal is to rotate the chairship around the members, maybe there could still be a liaison that is on both groups, you know, and we can come up with maybe workarounds from that, but that's a good point, that, you know, traditionally the chair has served on both panels, but, yes, I'm happy to further think about it and come up with a game plan.

DR. SWEENEY-TOOKES: Thanks very much. Appreciate that. Thanks for reminding me, Adam. One item that might come up, and just a lot of you are researchers here in the South Atlantic, and we are in the process, Bryan Fluech of UGA Marine Extension and Georgia Sea Grant, and myself, and Christina Curtis, and now a plethora of people, a lot of people from the NMFS main office in Silver Springs, have been working on carrying forward the momentum of

some of the east coast climate change scenario resilience planning workshops that took place under the last administration.

One of the things that came out of those workshops was a desire to sort of separate and have a community of practice in the South Atlantic. We found that the east coast workshop was five of us from the South Atlantic and a whole lot of people from Maine, and so, you know, there's really a need for us to maybe have our own community of practice here, and so we are in the very early stages of creating this community of practice.

We do plan to launch it with a small workshop in June, and so you may have heard something about this, or gotten an email. If you did, we would love to see you, but, regardless of that workshop, just know that this is something that might cross your email boxes at some point, hopefully within the next six months or so, and I would love to see you all become a part of this sort of very loose community of people who are interested in keeping up with each other and ongoing research.

Just looking ahead at the report, of course, this has been an ever-changing set of goals and priorities on our report, in light of the risk-value matrix and my report-out to the SSC this week. I've received all sorts of really wonderful notes from the SEP. I really appreciate all of your work on this, and your help in getting these things together, and so if you could please continue to send them today, by the end of the day, I would be really grateful, because I will be presenting a much shorter version of our feedback on the risk-value matrix, which is -- We're not calling it that anymore either, or we still call it that? That thing, Agenda Item 6/8, and as well as the rest of the agenda and the work of the SEP. Our next meeting will be we believe in April, here in Charleston, with the potential possibly of something else, John.

MR. HADLEY: Yes, and I was just going to say there may be a webinar in the fall. I think, you know, we need to discuss that internally amongst staff, whether or not that is necessary, and the timing, but just a heads-up on that, but, otherwise the in-person meeting will be a similar time, same place, or a similar place, and maybe not the exact same location, but here in Charleston next spring.

DR. SWEENEY-TOOKES: Thanks very much. Kevin.

DR. HUNT: Weren't we talking about some ad hoc meeting to discuss something yesterday, or that could wait till October?

DR. COLLIER: Thank you for bringing that up again, Kevin. It was the communities project and potentially looking at -- Or having the SEP look into some of the details of that, and I was remiss not to mention that there is a project oversight team that's going to be associated with the communities project, as well as all of our other IRA projects, and what this oversight team does is it meets regularly with the research team, to make sure it's meeting the goals and objectives of what was listed in the request for funding, and so, on that project oversight team, we have Jason, and we have Christina, and then we have asked Kathi, and I don't know if we have an official -- Kathi is going to be on there. Then part of the research team is going to include Jennifer, as well as Chelsey, and so we've got over half of the SEP involved in this project, and do we need to bring it back to the SEP?

DR. HUNT: I do not recommend that.

DR. SWEENEY-TOOKES: Thanks very much, Chip. I would concur. I think that's enough cooks in the kitchen from the SEP, and so, if there is no other business that needs to be -- John.

MR. HADLEY: Sorry, and I had one more thing. Before we wrap up here, I did want to mention that there are a few open seats on the SEP that the council will be appointing in June. If you're on our email list, there was an announcement that went out, I think last week, that the council is looking for advisors, and so, if you know of anybody that may be interested, please encourage them to apply, and, there again, the deadline, I believe, is May 8th, and, as I mentioned, the council will be making those appointments at their June meeting, and so I just wanted to put kind of a plug out there for anyone that you know that may be interested.

DR. SWEENEY-TOOKES: Thanks, John. Yes, and please encourage people to apply. I see no other hands. I see no other comments, and so, with that, we will close this meeting of the SEP. Thank you so much, everyone.

(Whereupon, the meeting adjourned on April 14, 2026.)

Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
May 27, 2026

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April 2026 Social and Economic

Attendee Report: Panel Meeting

Report Generated:

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04/13/2026 11:34 AM EDT

Staff Details

Attended

Yes

Interest Rating

Not applicable for staff

Attendee Details

Last Name

Bianchi

Brouwer

Byrd

Camp

Carmichael

Crandall

Curtis

Frimpong

Hadley

Helies

Iberle

Klibansky

Kolmos

McMullen

Mehta

Meyers

Murphey

Neer

Oliver

Ott

Package-Ward

Pallozzi

Salmon

Schmidtke

Silvas

Stasser

Walsh

Withers

colby

collier

First Name

Alan

Myra

Julia

Edward

John

Chelsey

Christina

Eugene

John

Frank

Allie

Lara

Kevin

Ryan

Nikhil

S

Trish

Julie

Ashley

Emily

Christina

Lauren

Brandi

Michael

Rachael

Katie

Mick

Meg

barrett

chip

thomas
Candelmo
Clements
Heppell
Loch
Newman
Newman
Rodgers
Thomas

suz
Allison
Kaylin
Scott
Jennifer
Sondra
Thomas
Phil
Suz

April 2026 Social and Economic

Attendee Report: Panel Meeting

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04/14/2026 07:20 AM EDT

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Last Name

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First Name

South Atlantic

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Candelmo

Carter

Crandall

Curtis

Curtis

Frimpong

Hadley

Helies

Iberle

Klibansky

Klibansky

Loch

Lovell

McMullen

McPherson

Mehta

Meyers

Murphey

Neer

Newman

Offner

Oliver

Ott

Package-Ward

Salmon

Schmidtke

Silvas

First Name

Alan

Myra

Julia

Allison

David

Chelsey

Christina

Judd

Eugene

John

Frank

Allie

Lara

Nikolai

Jennifer

Sabrina

Ryan

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Michael

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Solomon
Stasser
Walsh
Withers
collier
thomas
Camp
Carmichael
Clements
Heppell
Kolmos
Newman
Pallozzi
Rodgers
Thomas
colby

Jennnifer
Katie
Mick
Meg
chip
suz
Edward
John
Kaylin
Scott
Kevin
Sondra
Lauren
Phil
Suz
barrett

SEP Mon 4/13/26

Prefix	First	Last	Affiliation
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Mr.	✓ Jason	Walsh	North Carolina Division Marine Fisheries
Dr.	Brian	Cheuvront	N/A
Dr.	Chelsey	Grandall WB	Florida Fish and Wildlife Conservation Commission
Dr.	Eugene	Frimpong WB	University of Georgia
Dr.	✓ Kevin	Hunt	Mississippi State University
Dr.	✓ Christina	Package-Ward	NOAA Fisheries, Southeast Regional Office
Dr.	✓ Adam	Stemle	NOAA Fisheries, Southeast Regional Office
Dr.	✓ Kathi	Kitner	Google

SEP Mon 4/13/26

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Jessica	McCawley		Florida Fish and Wildlife Conservation Commission
Robert	Beal		Atlantic States Marine Fisheries Commission
Carolyn	Belcher		GA DNR Coastal Resources Division
Gary	Borland		
Amy	Dukes		SC DNR Marine Resources Division
Judy	Helmey		
Francis (Dewey)	Hemilright		
James	Hull	Jr.	
Kerry	Marhefka		
Tom	Pease		Seventh Coast Guard District
Charlie	Phillips		
Tom	Roller		
Robert	Spottswood	Jr.	
Andy	Strelcheck		NOAA Fisheries Southeast Region
Deirdre	Warner-Kramer		Office of Marine Conservation OES / OMC
TBD	TBD		U.S. Fish and Wildlife Service Representative

SEP Mon 4/13/24

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Deputy Director - Management

John Carmichael
Executive Director

✓ Dr. Chip Collier
Deputy Director – Science

✓ Christina Curtis
Fishery Social Scientist

✓ Dr. Judd Curtis
Quantitative Fishery Scientist

✓ John Hadley
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Kathleen Howington
**Habitat and
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Kelly Klasnick
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✓ Emily Ott
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Dr. Mike Schmidtke
Fishery Scientist II

Nicholas Smillie
**Digital Media and
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✓ Rachael Silvas
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✓ Suzanna Thomas
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✓ Meg Withers
**Citizen Science Project
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SEP Tue 4/14/20

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Mr.	✓ Jason	Walsh	North Carolina Division Marine Fisheries
Dr.	Brian	Cheuvront	N/A
Dr.	✓ Chelsey	Crandall	Florida Fish and Wildlife Conservation Commission
Dr.	✓ Eugene	Frimpong	University of Georgia
Dr.	✓ Kevin	Hunt	Mississippi State University
Dr.	✓ Christina	Package-Ward	NOAA Fisheries, Southeast Regional Office
Dr.	✓ Adam	Stemle	NOAA Fisheries, Southeast Regional Office
Dr.	✓ Kathi	Kitner	Google

Kaylin Clements

Dr. Fred Serchuk

Dr. Marcel Reichert

SEP Tue 4/14/24

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Jessica	McCawley		Florida Fish and Wildlife Conservation Commission
Robert	Beal		Atlantic States Marine Fisheries Commission
Carolyn	Belcher		GA DNR Coastal Resources Division
Gary	Borland		
Amy	Dukes		SC DNR Marine Resources Division
Judy	Helmey		
Francis (Dewey)	Hemilright		
James	Hull	Jr.	
Kerry	Marhefka		
Tom	Pease		Seventh Coast Guard District
Charlie	Phillips		
Tom	Roller		
Robert	Spottswood	Jr.	
Andy	Strelcheck		NOAA Fisheries Southeast Region
Deirdre	Warner-Kramer		Office of Marine Conservation OES / OMC
TBD	TBD		U.S. Fish and Wildlife Service Representative

SEP Tue 4/14/26

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