SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

JOINT SHRIMP AND DEEPWATER SHRIMP ADVISORY PANEL

Crowne Plaza
North Charleston, South Carolina

April 24-25, 2024

Transcript

Shrimp & Deepwater Shrimp Advisory Panel

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Nancy Jones	Damien Solozano
Bryan Fluech	Jody Shirley
Marilyn Solorzano	Tim Willis

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Observers and Participants

Other observers and participants attached.

The Joint Shrimp and Deepwater Shrimp Advisory Panels of the South Atlantic Fishery Management Council convened at the Crowne Plaza, North Charleston, South Carolina, on April 24, 2024, and was called to order by Ms. Allie Iberle.

MS. IBERLE: All right. I'm going to have us get kicked off with a quick word from Laurilee, and then I will hand it over to you, Mike.

MS. THOMPSON: Hi, everybody. Welcome. For those of you that are here in-person, thank you very much for taking time out of your busy schedules to come, and, for those of you that are online, listening in, we really appreciate your time and attention. I know that everybody's time is valuable, but your input to the council process is crucial, and so we really appreciate you participating, and I'm glad to be here, and have a great meeting. Thank you.

MR. MERRIFIELD: Okay. My name is Mike Merrifield, and I'm the chair of the Deepwater Shrimp AP, and have been for about fifteen years, and so let's just -- Are we ready to go ahead and get started?

MS. IBERLE: Really quickly, before we hop into the agenda, I wanted to go around the room and get mic checks, and so I'll go ahead and start. I'm Allie Iberle, and I'm going to be your new staff lead for the Shrimp FMP, and so that's shrimp and deepwater shrimp. I replaced Ruger Pugliese when he retired last year, and so I'm going to be your contact going forward, if you have any questions, and I've got a lot to learn, and I'm enjoying learning about the shrimp fishery, but, if I can't answer your question right away, I will find somebody who can. I will find the answers for you and help you get more involved and more in-touch with the council, and so I'm here for you guys, and feel free to get in touch with me anytime. I'll go ahead, and we start on this side, and then swing around, if you want to just say your name and your affiliation.

MR. FLUECH: Hi, everyone. I'm Bryan Fluech, and I'm the Associate Marine Extension Director with UGA Marine Extension and Georgia Sea Grant, and I'm based in Brunswick.

MR. GWIN: Good afternoon, everybody. I'm Sonny Gwin, and I'm the liaison for the Mid-Atlantic Fishery Management Council, and I'm participating in a pilot program for a shrimp fishery in Maryland, and that's why I'm here. Thank you.

MR. WILLIS: Tim Willis, and I'm actually, I guess, a new member on it, and I'm on the -- Why I did this is because I'm also on the North Carolina shrimp fishery group as well, and so I've been in that for about five years, and a couple of people down there said why don't you go help them with this, and I said, yes, ma'am.

MR. GEER: Hello, everybody. My name is Pat Geer, and I'm from the Virginia Marine Resources Commission. I'm here because we have an emerging fishery in Virginia. I have a lot of experience with this council as well, and I was the Chief of Fisheries down at Georgia DNR for a number of years, and I was involved with the shrimp fishery as well, and so I'm looking forward to the conversations.

MS. SHIRLEY: Hi. I'm Jody Shirley, and I am new to the council. I'm from the Tampa Bay area, and I am a shrimp boat owner.

MS. IBERLE: All right, and so I'm going to look to online. Jason, you are unmuted on our end, if you want to test your sound and introduce yourself.

MR. VOGELSONG: I'm a commercial fisherman, and I'm here in the ocean right now. My signal might not be the best.

MS. IBERLE: You're going in and out a little bit, but we can hear you. Thank you so much for signing on. Then, if you could, just mute yourself back when you're not -- There you go. Perfect. Nancy, you are unmuted on our end, if you want to test your sound and introduce yourself. All right. We can come back to Nancy. Okay. Nancy, it looks like you're on the app, and so the microphone button is in the upper-right-hand corner. Nancy, if you want chime-in during discussion, feel free. We'll come back to you. Chair, I will give it over to you.

MR. MERRIFIELD: Okay. My name, again, is Mike Merrifield, and I'm with Cape Canaveral Shrimp Company. We've been in the Cape Canaveral area for probably sixty years, and we have docks there. I don't have fishing vessels, and we just -- We are unloaders of shrimp, a lot of rock shrimp, red shrimp, white shrimp, and so that's my background. I guess the first order of business is to do the minutes.

MS. IBERLE: Yes, and so, in your briefing book, you have minutes from long-ago meetings, and, well, I guess 2023 isn't long ago, and so the January 2023 Shrimp AP meeting, and that was just Shrimp, and not the Deepwater Shrimp, AP meeting minutes, and then the January 2020 Joint Law Enforcement and Deepwater Shrimp AP, and then we have November of 2020 Joint Coral and Deepwater Shrimp AP minutes. These are -- Again, the 2020 ones are quite some time ago. If the AP doesn't feel comfortable approving those, it's not necessary, but we'll definitely give you the opportunity.

MR. MERRIFIELD: Okay. Regarding the Coral AP and the Deepwater Shrimp joint meeting of November 10, 2020 -- I mean, I've looked over these thoroughly, and it looks pretty much about what we had talked about, and I think the only -- Jason, you were there, and, Nancy, I think you were there as well, and I don't know, Laurilee, if you were there or not, but that leaves three of us that were at that meeting that are here today.

MS. IBERLE: Essentially, with that, we're just looking for if there's any objection to approving the minutes, and, Nancy, I saw that you unmuted. Do you want to test your sound?

MS. JONES: Can you hear me now?

MS. IBERLE: Yes, we can. Perfect. Thank you so much. Do you want to introduce yourself?

MS. JONES: Nancy Jones, shrimp boat owner from Jacksonville, Florida.

MR. MERRIFIELD: Okay. Do we want to -- Does anyone want to make a motion to approve those minutes, or is there any objections to those minutes from November of 2020?

MS. JONES: I make a motion to approve.

AP MEMBER: Second.

MR. MERRIFIELD: Okay. I think we'll go ahead and approve those minutes.

MS. IBERLE: All right, and those were the --

MR. MERRIFIELD: That's the Coral Advisory Panel and the Deepwater Shrimp Advisory Panel joint meeting. The second set of minutes are from the Joint Law Enforcement/Shrimp/Deepwater Shrimp, which I was unable to attend that meeting, but I know, Nancy, you did a great job of working with the Law Enforcement AP to come up with an agreed-upon motion there. Were there any objections -- I don't know if there's anybody else besides you that was on that meeting that's here today. Are you fine with those minutes the way they are? Do you have any objections?

MS. JONES: I mean, I approve them. I mean, I make a motion to approve, and I approve, and I was the only one there.

MS. IBERLE: Sounds good.

MR. MERRIFIELD: Do we need a second on that?

MS. IBERLE: Yes, please.

AP MEMBER: Second.

MR. MERRIFIELD: Okay. We have a second. The Shrimp Advisory Panel is the last one, and that's not my -- I am not on that AP, and so -- I don't know that there's anybody here that was at that meeting.

MS. IBERLE: The January 2023?

MR. FLUECH: I was at that one, I think.

MR. MERRIFIELD: You were at that one? Bryan.

MR. FLUECH: I can make a motion to approve those minutes.

MS. IBERLE: Sounds good.

MR. MERRIFIELD: Okay. That's when they talked about the sanctuary and the --

MR. FLUECH: The sanctuary, and I thought there was also something about debris from Cape Canaveral, space debris, and I think we talked a little bit about it.

MR. MERRIFIELD: Can I ask, on the National Marine Sanctuaries, and, well, I mean, the minutes are fine, I guess, as they are, and so we could approve those. Did you want to make a motion?

MR. FLUECH: Yes, and I make a motion to approve the minutes from the 2023 meeting.

MR. MERRIFIELD: Is there a second? Jody.

MS. SHIRLEY: I will second it. I was not part of the meeting, but --

MR. MERRIFIELD: Jody will second.

MS. IBERLE: All right.

MR. MERRIFIELD: Okay. That -- Did we want to go into the citizen science at this point?

MS. IBERLE: Yes, and so, up next, we'll head into the citizen science overview with Julia Byrd, and let me just save this really quick, and then we can get her queued up.

MS. BYRD: Good afternoon, everyone. For those of you guys who I haven't had an opportunity to meet yet, I'm Julia Byrd, and I oversee the council's Citizen Science Program, along with Meg Withers, and I have, at the meeting earlier this morning, tried to break this computer once, and I'm doing it again, and so bear with me for just one moment as I'm trying to pull up my presentation.

All right. Sorry. Thanks for your patience with me as I pulled up the presentation, and so, again, Julia Byrd, and I oversee the council's Citizen Science Program, along with Meg Withers, who is our Citizen Science Project Coordinator, and so the South Atlantic Council is a little unusual. It's the only one of the eight regional fishery management councils that has a citizen-science-specific program, and I've never had an opportunity to share information on the program with the Shrimp and Deepwater Shrimp APs, and so I'm really excited, and so, today, I'm just planning to give you kind of a quick overview of what the program is, what we're trying to do, talk a little bit about some of the projects that we have underway, and then talk a little bit about some of our citizen science advisory panels.

The focus of the program, thus far, has been pretty fish heavy, and so I'm really excited to get to talk to you guys today, and listen to the meeting today, to learn more about the shrimp fishery and figure out ways -- If there are ways that citizen science projects could help kind of fill some of the data needs from this fishery, or these fisheries.

First, just a little bit of information on the Citizen Science Program, and so we have a lot of long-standing data needs here in the South Atlantic. The council manages all kinds of different species, everything from shrimp to deepwater shrimp to dolphin to wahoo to snapper grouper. It's a large group of species, over a large geographic area, and so one of the things that the council members had been hearing from fishermen, consistently, is that they wanted to be more involved in helping collect the data used to manage their fisheries, and so citizen science can provide an opportunity.

Back in 2016, we held what we called a citizen science program design workshop, and, at that workshop, we brought together over sixty fishermen and scientists and managers, and some folks around this table, and Bryan was involved in that workshop, and we kind of got together and just brainstormed that, if we wanted a citizen science program in our region, what would we want it to look like, what would we want it to do, and what came out of that was what we called our program blueprint, which was a roadmap for the development of a program.

Over the next year-and-a-half or so, we had these stakeholder-driven groups, and so it was fisherman and scientists and managers, and data managers, and outreach specialists, all working

together to develop our program, and so, in 2018, our policies were developed, and we got started to develop our first citizen science projects, and so the overall approach to the program is we're really trying to support projects that fill identified data gaps and address South-Atlantic-specific research needs. We want to make sure we're kind of complementing any existing programs and partnerships, and so we're providing supplemental data that can be used in management decisions.

One of the things we heard loud and clear, in particular from the fishermen, at the just kind of initial workshop we held, is that, if they're going to take the time to collect data, they want their data to be used, and so we want to make sure, from the beginning of a project idea, we're thinking about the direct -- Its direct application in assessment and management and making sure we're designing projects in a way where the data collected could meet that intended use, and then we also really want to encourage fishermen and scientist kind of collaboration throughout the life of a project.

We have all these different kind of data needs in the South Atlantic, and, as a way to try to kind of narrow the focus down to tangible ideas that are important to our fishermen, scientists, and managers, we have citizen science research priorities. They're updated every two years, and we get input from our APs, and we have two citizen science kind of specific APs, as well as council members, and these kind of guide the types of projects that our program supports and pursues.

We also share this list of research priorities with other groups who may want to partner with us. Right now, we have three projects that I will give you a quick overview of that are helping three of these research needs. One is collecting more information on released fish, in particular snapper grouper fish, and one is using historic photos to help us learn more about kind of historic fisheries in the region, and the third one is kind of collecting information on some data-limited species by working with recreational divers.

Just quickly to jump into the first project, our SMILE project, and this is a project that is being led by a group called REEF, the Reef Environmental Education Foundation. It's a group that's been working with recreational divers for a really long time, for decades. In this project, we're partnering with recreational divers to collect length information for some of our data-limited species, and so this group has developed an underwater kind of laser-mounted Olympus camera. If you look at the middle picture, you can see kind of what the camera looks like here.

Divers will use this when they're diving, put the laser on the fish, and then take a burst of photos. Then those photos are analyzed, and we can get the length of the fish, and so they're developing kind of artificial intelligence technology to help kind of analyze all of these photos that are being collected, and so field testing for this project is happening down in the Florida Keys. They had their first season last year, and it went really well, and they're analyzing that data now, and, just earlier this month, they started their second field season.

The second project that I just wanted to quickly mention is the first project that we developed under the council's program, and it's called SAFMC Release, and it works with commercial, recreational, and for-hire bottom fishermen to collect information on released grouper and red snapper, using a free app called SciFish, and so the project is really focused on trying to get better information on the size of the fish that are being released and information that helps us better understand how many of those released fish survive, and so what depth was a fish caught in, did they vent the fish before they released the fish, was there shark depredation, that kind of thing.

If you're interested in learning more about this project, every year we do a data summary. By we, I mean Meg Withers, who works with me, does a data summary of all the data collected for that year from our participants, and it's really great to look at. We can see -- We've learned a ton through their participation in the project, and so I know this is off the topic of shrimp, and so I just wanted to mention it here in the presentation, and there's a link in the bottom, if you want to check out the data summary, and please do, and, if you have any questions, just let me know.

The last project that I wanted to mention, I wanted to go into a little bit more detail, and this is a project called FISHstory. This is a project where we're using kind of old, historic fishing photos to help us learn more about kind of the fisheries from the 1940s, 1950s, and 1960s, and 1970s, kind of before a lot of our catch monitoring programs were in place here in the South Atlantic, and so the project kind of has three components.

The first is just trying to digitize and archive these historic fishing photos, and the second component is analyzing these photos, and, to do that, we use an online crowdsourcing platform called Zooniverse, and what that means is there's a website online where we can train people from all over the world to help us count and identify the fish in the photos. Then the third component of the project is we're trying to estimate the size of the fish in the photos, using an item of kind of known length, and so, in a lot of those photos, the fish were kind of hanging on leaderboards, and so we're using that lumber, those two-by-four, or those two-by-sixes, as kind of an estimate to help us scale to get the size of the fish.

We did a project, a pilot project, back in 2021 or 2022, ish, and, thanks to Rusty Hudson, who is a fisherman down in the Daytona Beach, Florida area, and kind of his family's historian, and he provided over 1,370 photos from Daytona that were digitized and archived as part of this project. I am guessing many of you may know Rusty. He's been a big supporter of this project, and a huge part in it. He's played a huge role.

The second part of the project, where we use kind of members of the public, volunteers, to help us analyze the photos, and we had over 2,100 volunteers analyze over a thousand photos. For each photo, we had multiple volunteers review it, and, when there was volunteer disagreement, we had a validation team that's made up of fishermen and scientists. They reviewed 180 photos, and what we found is that the data collected from these photos can show trend information for kind of key species, some of the species most frequently found in the photos.

Then, the last component of the project, we kind of developed this method to estimate the size of fish within the photos, and we measured all the king mackerel in the archive of photos that we got from Rusty, and we were able to produce length compositions over time.

We've been really excited to receive funding to try to grow the project from this pilot to kind of a larger-scale project, and one of the things that we're kind of focused on doing right now is trying to gather more of these historic fishing photos, and so you may have noticed me sitting in the corner, and I have a photo scanner beside me, and so, for the AP meeting this morning, and for you all's meeting this afternoon, I'll be around. If you happen to have any historic fishing photos with you, or, if you have digitized copies, I would love to talk to you and gather those from you guys.

We're trying to get more photos from across the South Atlantic region, from the 1940s to the 1980s, so that the data collected from these photos is most representative of the reason as a whole, and so we held kind of six scanning events last fall, in collaboration with council meetings and AP meetings, and so we were really excited. We had, in particular, a number of AP members that brought in photos, but what was also super helpful is that AP members, and council members, help connect us to other folks in their community who might have photos, and so I know some folks hooked me up with restaurant owners, or businesses, that had photos on their walls, or kind of libraries, or historical centers in their area, or other fishermen they knew who had photos, and so that was very, very fruitful.

Then we also had some members of the public, as we were kind of sharing information on these scanning events, that just reached out to us and said, oh my gosh, I went out on that boat with my grandfather, and here are twenty photos for you to have for your project, and so we were really excited to kind of gather photos for the project over the past six months, and, just to give you a little bit more information on the types of photos that we're looking for to include photos and analysis, pictures need to be taken at the end of trips, where harvested catch is displayed. We need to have a photo date or year, and it can be a ballpark year, and we need to have a little bit of location information. We need at least state, and, for any photos, we want to make sure we have the name and contact of the photo provider, and that's more just so we can share information about what's going on with the project and with their photos.

Then what makes a photo even better is if the fish are kind of hanging on a leaderboard, because that allows us to estimate the size of fish, and then, if we have more specific date information, we can look at seasonality of catches, and then having more information just about kind of the vessels, and the captains, and the docks is great too.

These are just some of the examples of the photos we're looking for. This one is from Rusty, and we know the date, we know the captain, we know the boat, and it has all of the information needed. This is another example photo, and it's from one our council members, Judy Helmey, and this is another great photo. The fish are all lying out on the dock, so you can see them, and it's harder to get the size of fish in these photos, when they're lying on the ground, but we can still use them for analysis.

Thanks to kind of our AP members, council members, all the other organizations, libraries, businesses, restaurants that we worked with over the past fall, we now have photos from the Outer Banks all the way down through the Florida Keys, and we were able to gather 600 new photos over the past kind of six to eight months.

I wanted to share this with you guys, and so, if you have any leads, or know some folks who may have historic fishing photos in your area, I would love to know more about it, and then we got a question this morning, at the Habitat AP, asking more about if we're trying to kind of archive just recreational for-hire trips, or also commercial trips, and they asked specifically about the shrimp fishery, and so, for the analysis we're doing right now, we're really focused on for-hire trips, but we would love to get pictures of historic shrimp fishing photos too, and I feel like a lot of the photos who have these historical images, and who really know about the fishery during that time period, won't be here forever, and so, if you all know folks who have kind of historic shrimp fishery photos and that sort of thing, I would love to get them to include in the archive too.

I'm going to stop there for a second and see if anyone has questions. I know I've been talking a lot, and so I just want to pause here and see if you all have questions about FISHstory or any of the other kind of information that I've shared so far.

MR. FLUECH: I do have a question, Julia. Has any progress been made with the idea of the infrastructure, changing infrastructure?

MS. BYRD: So you're referring back to --

MR. FLUECH: Just citizen science and like just loss of fish stocks at, you know, railways, and has there been any other conversations? It seems like that would be relevant to this AP especially, since we know the infrastructure is -- We're losing a lot of it in our region.

MS. BYRD: Yes, and so one of the -- I am going to -- Well, one of our citizen science research priorities is focused around infrastructure and trying to get a baseline of infrastructure and what infrastructure has changed over time, and I know myself and Christina Wiegand, who is the council's social scientist, have been very interested in trying to develop a project, whether it's kind of all citizen science, or part citizen science, and part more social science, to kind of gather that baseline kind of infrastructure, you know, fish houses, docks, ice, gas, you know, what's still around, that kind of information.

We haven't successfully got it funded, a project like that funded yet, but it's on the docket, and we're still kind of pushing forward, and, if anyone has thoughts about that, please come speak to me offline, and I can give you a little bit information. Nancy, it looks like you have your hand raised.

MS. JONES: I've got one, and it's a shrimp boat captain and his crew, which is my father-in-law and his great uncle, and they've got a goliath grouper hanging on the pick-up thing in front of the fish house, and they're standing next to, and is that something you would be interested in?

MS. BYRD: Yes, Nancy, and that would be great. I would love to get that, and I don't know if it's digitized or not, but I can send you an email, once I finish presenting, to kind of get a little bit more information, and we can figure out a way for you to get it to me.

MS. JONES: I can scan it and email it to you, and that's not a problem. I just didn't know if it was something that you would be interested in. I know that, you know, it's illegal to catch them now, but back then it wasn't.

MS. BYRD: Yes, and we definitely have other photos, particularly down in south Florida and the Keys, where there are some very large goliath, and some warsaw down there too, and so, yes, I would definitely be interested in that, and so I'll email you after this, so you have my contact information, and we can kind of chat more about that. Thanks so much.

MS. JONES: Okay. Thanks.

AP MEMBER: Julia, I think this is really neat. I think it's -- Using something as a frame of reference is great. As a woodworker, I want to let you know --

MS. BYRD: The sizes of them change.

AP MEMBER: The size of the woods have changed. Now, it's kind of minor, and it changes all the time. Like the three-quarter-inch plywood now is twenty-nine-thirty-seconds, and so it has changed slightly. Now, I guess that doesn't really matter too much.

MS. BYRD: So we looked into that some when we were developing the methodology, and so what I will say is, when we are measuring these photos, we're not getting down to the centimeter or millimeter. We're getting within about kind of two inches, which is pretty good for kind of a photo from the 1950s, and so I know, in particular, for the pilot project we did, king mackerel, and so those two inches is about the size of the size bins they used for the length comps in the assessment, and so thank you for bringing that up, and that's something that is definitely on our minds, but kind of the accuracy and precision of those lengths will hopefully make that less of an issue.

All right. I'm almost done. A couple more things. The last thing I wanted to share is something that we just launched earlier this month, and it's what we're calling our Citizen Science Project Idea Portal, and so this is basically an online form that you can fill out to share a citizen science project idea with us, and so, like I said, right now, we have a lot of fishy ideas, and much less kind of shrimpy ideas, and so, if you guys ever have a citizen science project idea that comes to you, you can go on our website, and there's an online form you can fill out, and it's very kind of easy to fill out. You should be able to fill it out in less than ten minutes, and that will share that idea directly with us.

Our team will review kind of the ideas that are submitted in May and October every year, and then how we're hoping to use this information is we're going to -- It will help us inform when we update our citizen science research priorities, and so you guys are probably -- You will probably think of ideas that haven't even crossed our minds, and so that's one way we'll use it, and then the other way we're hoping to use it is hopefully it can help us connect fishermen and scientists that may have similar research interests, but there's a QR code here that you can use, or, if you go to our website, there's a big button that says "Project Idea Portal" on it.

Then the last thing I wanted to talk about is our citizen science advisory panels, and so we have kind of two different advisory panels that serve kind of year-round for the Citizen Science Committee, than we have another kind of ad hoc group that can be used. Everybody who sits on our citizen science advisory panels are either a member of our Citizen Science Pool or members of another council advisory panel, and so, first, we have our operations committee. This is a group that provides kind of big-picture programmatic guidance. They normally meet twice a year, and have three to five-year terms.

The second group is the one that I really wanted to talk to you all more about, and this is the group that call our Projects Advisory Committee. This is a group that's made up of members of other council advisory panels. The term is dependent on the AP tenure of each individual on the committee. They typically meet once per year, via webinar, and so it's not a heavy lift, but this is the group that helps us identify citizen science research priorities across all of the different fishery management plans and help us with things like volunteer engagement strategies, and so it's really helpful to have members from all of the different kind of species advisory panels with this group, because you guys are experts in the shrimp fishery and know what data are needed to manage the

fishery well, and so we would love to have folks who can provide kind of a shrimp perspective in this group.

The other kind of group of committees we have are ad hoc committees that typically will come together for a year, to kind of help us review different aspects of the program, and we don't have any that are active right now, and so, really, the one question I have for you all is we need Shrimp AP representatives on this Projects Advisory Committee. Bryan is actually on this committee, and it's hopefully not as a surprise that I'm mentioning this, but he serves on our Outreach and Communication Advisory Panel, and so he's one of their representatives, but, since he's also on this group, he can maybe kind of wear dual hats, but I wanted to see if anyone else was interested in joining this group from the Shrimp AP.

I think some examples of how helpful it is to have representatives from each of the APs are, this year, in our citizen science -- When we updated our citizen science research priorities, we have one on spiny lobster, and we have one on habitat, and the driving reason we have those is because there were members from those APs who spoke up and said I think this really could be helpful, and so, again, no pressure at all. If you want to learn more about what serving on this group would actually mean, I'll be here all day, and I'm happy to chat with you, but, if anyone is interested, please let me know. You can let me know now, or you can come find me in the corner, and I will be happy to take any questions, or any volunteers, if anyone is so interested.

MR. MERRIFIELD: That's great. Thanks, Julia. That was very nice. Does anybody have any questions for Julia? I don't know that -- I haven't seen a lot of historic shrimping pictures, actually.

MS. BYRD: So I have worked a lot with our APs, and they're helping connect us to people, and so I know -- I've talked to the Charleston Museum here, and the historical society here had a few shrimp ones, but it was kind of few and far between.

MR. MERRIFIELD: You know, at the St. Augustine Lighthouse, they also have a very good historical presentation that would be worth looking into.

AP MEMBER: The historian there does, and I'm drawing a blank on his name, and maybe Nancy might know, but, yes, they wrote a book too, and he's got a lot of photos, and he's a very nice guy.

MS. SHIRLEY: I think I have a copy of that book. It's really good.

AP MEMBER: I do have a copy of the book too, but I just remember him working with Lindsey, because he would come up to St. Simons, but, yes, he should have, and then Kevin Dickey, down in St. Marys, and he's got photos from what the St. Marys docks looks like, and -- Jim Dickey, and so, yes, definitely some good photos from the 1960s and 1970s. He worked, years ago --

MR. WILLIS: You may also want to contact North Carolina Marine Fisheries Museum in Harkers Islands. They have hundreds from the 1920s, 1930s, 1940s, and 1950s, and I'm sure they would be more than happy to share, and the other one is in Beaufort. There's a maritime museum in Beaufort, and I know -- Because they actually have a picture of my dad shrimping from the 1940s, or the late 1930s, and so I know they have pictures as well, and so that's someone you might want to reach out to.

MS. BYRD: Thank you. Actually, I think it was someone on our Snapper Grouper AP that mentioned the maritime museum in Beaufort, and I think -- I tried to go there when we were at our December meeting, but it was closed, or, anyhow, it didn't work out, but it's on my list, and thank you for mentioning it again. These are great suggestions, you all.

MR. GEER: I was just wondering if these kind of photos of shrimp catch -- Could they also be used to look at, you know, what the bycatch was, the composition of the bycatch, during those times, and what might be valuable is, you know, some of state agencies, that have been doing surveys since the 1970s, and, you know, they may have photos as well.

MS. BYRD: I think that's a great idea. I think, right now, we're trying to gather whatever historic photos we can, just because, you know, I know a lot of folks who were fishing back then, or their family members, may not be around forever. For the analysis piece, we're first taking a swing at this kind of for-hire fishery, but we'll note that down as another kind of thing that we might want to look into as we continue to grow the project over time, and so thank you, guys, so much.

MR. MERRIFIELD: Thanks, Julia.

AP MEMBER: I imagine that John Williams would have some pictures from --

MS. IBERLE: The comment is saying that you could contact the Southern Shrimp Alliance, and they have members from South Atlantic states that would have photos over the years.

MS. BYRD: Awesome. Thank you.

MS. IBERLE: So that does it for CitSci.

MR. MERRIFIELD: Okay, and so we're going to updates, and the first one will be Coral Amendment 10.

MS. IBERLE: Yes, and so I'm going to have our SAFMC staff member, Kathleen Howington, and she's going to review an overview for Coral 10, and then we'll open it up for discussion.

MS. HOWINGTON: Hello, everyone. Like Allie said, my name is Kathleen Howington, and I am the lead for the Coral, Sargassum, and the Habitat and Ecosystem Advisory Panels, and so I'm just coming here to bring you a general update on what's going on with Coral Amendment 10, and, of course, starting with a little bit of historical context of what's been going on with this amendment, and then, at the end, Allie is actually going to be asking you for some feedback on some questions that we would love to get your feedback on.

All right, and so, for background, in 2013, Coral Amendment 8 was passed, and Coral Amendment 8 expanded the Oculina Habitat Area of Particular Concern, and particularly it closed this section right here, which you can see it's pretty narrow, and it's called the northern extension, and it's a proposed shrimp fishery access area, and this was an area that the rock shrimp fishery used for trawling on occasion, and so it closed that, and then the council developed Coral Amendment 10 in 2021 and proposed establishing this shrimp fishery access area that you can see here, which would allow for trawling for rock shrimp.

This Amendment 10 was submitted for approval in December of 2021, and, in July of 2022, the council received a letter of disapproval, stating that the amendment did not include adequate analysis to guarantee that the FMP would minimize -- This is a quote, but minimize the adverse effects of fishing on EFH and minimize bycatch.

In the meantime, in September of 2022, the council received a presentation by Andrew David from the Southeast Fisheries Science Center. This was a project that the Science Center did to conduct a visual survey of the proposed shrimp fishery access area, and they were able to get two successful pulls, that you can see here, of a mapping sled, and, from that study, they were able to say that they did not find any live or standing dead colonies, live or standing dead oculina rubble, but they could not state definitively that no oculina colonies exist within the shrimp fishery access area.

Then fast-forwarding with the rejection letter in July of 2022, and that new study in September of 2022, and, in December of 2023, the council had a long discussion of what to do with Coral Amendment 10 and what the next steps would be, and, during that, the council made the motion to resubmit Coral Amendment 10 after the following modifications occurred.

The first was to include a bycatch probability assessment addressing what the letter had said, as well as include more information regarding minimizing effects on EFH, incorporate that September 2022 mapping study, and then including any other new data, as needed, and so the IPT for Coral Amendment 10 has met once. The writing responsibilities have been distributed, and, during that meeting, it was determined that some economic data would be helpful in including just updating it for the last couple of years for what kind of impact this would have on the shrimp fishery. With that, I'm going to hand it over to Allie for some questions.

MS. IBERLE: Really quickly, before I hop into these questions, I want to note that the council is going to be talking about this amendment as they move forward in the process. The council process relies on input from everyone, the shrimpers included, and we are going to be holding a council meeting, in June, in Daytona Beach, which will have a public comment period, and so Coral 10 is not excluded from that, and so please have -- We would love to have people involved and submit public comment.

Back to specifically the AP, and so we, as staff, kind of thought about some questions to ask the APs, specifically to relay back to the council, and so those would be would the area be used regularly if it is reopened? We heard a lot from Laurilee, at the habitat meeting previous to this one, about how that area was used, and kind of the seasonality, and then why is this area important to the rock shrimp fishery? That one kind of seems simple, but we really want to hear those details from the shrimpers.

What would be the benefit of opening the area, and so thinking about, business-wise, what specific benefits, and, you know, can you kind of quantify that, and then are there any additional recommendations that the APs would like to make sure that the council hears? Then one more thing is, during the June meeting, we are going to be holding the Shrimp Committee, and so we're going to be summarizing all of the feedback that's given during this meeting, packaging that together, and Mike is going to be presenting that to the council, and so your feedback is extremely important, and so, with that, I will turn it over to you.

MR. MERRIFIELD: Okay, and the problem with an amendment that goes ten years is that all the people turn over, and nobody remembers what the discussion was or how we came to the conclusions that we came to, and so we almost -- It seems like we have to continually repeat some of the same information, the same presentations, and try to create the same -- Present the same data about the amount of buffer area, where the gear lies behind the boat, how close it comes, how much control do you have over the gear, and there's all these questions, and they come up over and over and over.

We're going to have to -- We're going to need some participation at the meeting in June, in Daytona Beach, and some of the people that are most interested in fishing in those areas are going to need to come forward and, once again, explain to everybody why that is. Just to jump into these questions, is there anybody that would like to address any of these questions? I know we have some rock shrimpers that are on the call, and would you like to jump in?

MS. IBERLE: Any AP members on the call, feel free to unmute and hop in. Kick us off.

MR. MERRIFIELD: Okay, and so, would the area be used regularly if reopened, and this is -- Rock shrimp --

MR. VOGELSONG: Can you hear me, Mike?

MR. MERRIFIELD: I hear you, Jason. Go ahead and start, and I will chime-in later.

MR. VOGELSONG: I guess you're talking about is it going to be used regularly, and, I mean, it depends on if the shrimp get out there. When the shrimp are out there, they'll move off the corals and stuff, and go out to a certain depth, or a little bit away, and you can catch them, but they don't always just come out and scatter all up and down the bottom, and so to say regularly, and, I mean, I'm sure every year we would check it, and, if the shrimp are there, we would work it.

MR. MERRIFIELD: Jason, in the past five years, how many times have you been in that area?

MR. VOGELSONG: The north end, I didn't go out and check it last year, and just there wasn't a lot of shrimp around, and fuel costs and all, but, I mean, we caught some south of the box there, in the deepwater, and I left to come back on the beach, and a couple of boats might have tried it, but, like I said, it gets checked every year, and, if the shrimp are there, you catch them, if they're of size. You know, sometimes the shrimp will be out there, and they'll just be small, and so you can't work on them just yet, and, you know, the tides have an influence, I guess, if the shrimp is moving off or moving in as well, you know, the actual bottom current.

MR. MERRIFIELD: So have the tides been closer in or further out, in the last -- I mean, we're talking the --

MR. VOGELSONG: Oh, they change. They change about every five to six hours, and it's kind of like, you know, the tides that you have in here at the beach and stuff, high tide and low tide.

MR. MERRIFIELD: But, generally, tides are what drive the shrimp into the offshore side or the offshore side of the bank, correct?

MR. VOGELSONG: Yes, and then if you get storms. I mean, if you get a lot of hurricanes in, it will pull the shrimp off as well, and you get out there in the deep water. In the beginning of the year, we typically work the first month or two inshore, inshore of that ledge, and then I would say, around September or October, you start going out there and checking it, because it gets later in the season and the shrimp move on off, but, you know, it's like magical science, if you want to be real. You know, I haven't seen anybody write a book on it, but they talk about us knowing where our stuff is, and kind of how all that operates. At that depth, I mean, it's -- I guess it's a skill. It's kind of hard to explain it in a scientific term.

MR. MERRIFIELD: Allie has a question for you, Jason.

MS. IBERLE: So, in terms of the area being opened, would you have -- Could you kind of estimate -- I know the area has been closed for some time, but the benefit, with regard to your landings each year, of the area being reopened?

MR. VOGELSONG: Well, some years, that's where the shrimp is at, you know, in that deeper water, you know, and it depends on -- Water temperature plays roles in it, and, I mean, it's just some years they're there and some years they ain't. Some years they're on the north end and the south end, and, I mean, they'll -- Every year is different, but, when the shrimp is there, the area gets worked, but I know it gets checked every year, by a few of us that go out.

MR. MERRIFIELD: So the other thing, that kind of goes into the next question, is the technique for fishing, and so, typically, when you put out, you put out into water that is further away from the reef, but then you go in close, to basically herd the shrimp away, correct?

MR. VOGELSONG: No, and you don't want to set out on the very edge of it, in case you have an issue, or a problem, and so it's better to set out further off, to make sure stuff is right, and then, once you get a feel for how the tide is pushing the boat, and the boat is moving along, and how everything is laying, then you, you know, kind of work your way up to the line right there, and you can control it better, but you don't do it right off the bat.

MR. MERRIFIELD: Right.

MR. VOGELSONG: Because, you know, a door could slip, going down and passing through a current or two, and, you know, you will have one current maybe that's pulling off, and then another kind of pulling in. You will have another current pulling in, or you'll have a north current or a south current, before you actually get to the bottom, and so you don't want to make any mistakes being so close to where you don't have time to react to it.

MR. MERRIFIELD: Right, and so the technique is to get set, get your gear set, and get it to where you've got a feel for it, and then to move in close, and then gradually work your way offshore?

MR. VOGELSONG: Yes, because, like I said, when the shrimp first move out, you know, they will -- I guess it's stages, or staircases, I guess you would call it, and so they'll be at the top section of the stairs, which is, you know, close by the reef, and, if they don't get spooked off, they generally trickle down, and so they have enough room to come out between the reef and where we can actually comfortably drag, and, if they don't get pushed off, they just stay in, and then they'll go,

you know, south of the box down there, offshore of Fort Pierce. Then you've got wait for them to come through, because, if they don't come through, they will just hang out in the Oculina Bank.

MR. MERRIFIELD: So I will kind of summarize, and then you can just correct me if I'm wrong, and so, basically --

MR. VOGELSONG: It's like corralling cattle.

MR. MERRIFIELD: Exactly. It is. I mean, you're corralling cattle, and you're --

MR. VOGELSONG: But you can't see them. You can't see the edge of the cliff, and you can't see what you're corralling, but, you know, I mean, you have the technology, where it gives you an idea, but, like I said, I've seen a lot of people, that have been shrimping a long time, go out there and not get it right. It took me a while to get it right.

MR. MERRIFIELD: I have used that analogy before, that, if you've got a bunch of cattle in a grazing pasture, and you're going to try to corral them to a place, you don't go cutting right through the middle. You go to the edge, and you work them to where you want them to be, to where you have access.

MR. VOGELSONG: Right.

MR. MERRIFIELD: So the technique is to start out away from the reef, get a feel for your rig, and then you come in and run the lines, and then you -- What he's talking about is you're stepping down, and so, basically, you're herding them out and catching them as they're going out. What we've done is we've just eliminated a huge tract of viable bottom to these guys, that they are not able to get to, and you're basically forcing them to go through the middle of the herd, instead of going to the edge.

MR. VOGELSONG: Typically, in the past, you know, you get 300 foot of water, and you could start out there -- I mean, if you got in around that 280 and stuff, that's where you start finding the steeple rocks and stuff like that, and so, you know, the shrimp would hang out in that 300, or 310, you know, and, if you didn't scare them out -- Like know you've got to start out in 340 foot, and I know that doesn't sound like much of a difference, but it makes a difference when -- It's kind of like you're standing on the wrong side of the street when the bus comes to the other side, and you just watch it go by, and that's what they do, and they don't get spooked out.

MR. MERRIFIELD: Are you seeing a tendency, as we see warmer waters, for there to -- For them to be offshore more often than inshore, or not?

MR. VOGELSONG: You know, we didn't have many hurricanes or nothing last year, and so maybe that being stagnant -- You know, it takes a stir-up to shake the bottom.

MR. MERRIFIELD: So you're not seeing really an impact of water temperature being any warmer or not.

MR. VOGELSONG: Not necessarily. I mean, maybe a little bit, and I just think, because we didn't have nothing to stir the bottom up last year, it didn't -- Because, if them shrimp sit inside

that coral area, where we can't get to, or can't drag, and, you know, they ain't got nothing to wash them around, then they ain't going to move, and they're going to eat and do whatever they've got to do there, as they migrate through.

MR. MERRIFIELD: So, to answer the questions, would they use the area regularly, and so it sounds like, every year, they're basically testing the area.

MR. VOGELSONG: Yes, and we test it every year. I mean, between the six or seven of us, you know, I mean, we -- One of us has went out there and made a drag, or a couple of drags, in there, just to make sure, because, I mean, if the shrimp are there -- You know, shorter nights and longer days, and you only work at night, and it's just economical just to work at night, you know.

MR. MERRIFIELD: Jason, I'm going to let Damian speak for a minute, okay?

MR. VOGELSONG: All right.

MR. MERRIFIELD: Damian.

MR. SOLORZANO: I am basically here for whatever -- Any kind of questions you guys need, and I'm basically here to help Jason out and whatever, to answer any questions you all have.

MR. MERRIFIELD: Okay, and so you heard what we've said so far, and you kind of are in agreement so far, and do you have anything to add to that?

MR. SOLORZANO: I was kind of having a little bit of trouble with my phone, but, yes, I heard most of it. I would agree with pretty much everything he said, and I don't think I would disagree with anything, and I didn't hear a -- I heard most of it, but, if there was anything that he didn't touch on, that you all need me to clear up, just let me know.

MR. MERRIFIELD: Okay. Thank you. Is there any other information that you would like to -- The last question is loaded, and so probably wait for that one.

MS. IBERLE: Yes, and so I just -- I think what we're, you know, looking for, specifically both for the Coral 10 IPT for the council specifically, is -- Which it seems like, from your feedback, that the area would be regularly used, if it was opened, and so kind of just gauging the importance of this area to rock shrimping and kind of emphasizing the importance of that area.

Then I think the technique that you guys were describing is important too, as we think about, you know, how the shrimpers are kind of, in a way, self-policing for the coral, and how they're moving with the equipment around the coral, and it looks like, Nancy, you have your hand up, and you can go ahead.

MS. JONES: How important the area is to the rock shrimp fishery is we need all the area that we can use, because the shrimp are not always in one area, and they're in all different areas, and they have to search to find them, and so, if they're not in the areas that are open, and they are where you're closing them up, that's where -- The money has went there, and so that's what the benefit of opening the area, and how important it is, is it's important to have all the areas that they can to be able to fish, and it doesn't mean that they will fish it every time, because, if the shrimp are not

there, they're not going to fish it, but, if they are there, and they can't fish it, then that's sort of like twisting their arm behind their backs, and they can't do it. They just need to have access, and it doesn't mean that they're going to fish it every year. Shrimp migrate back and forth and up and down, and, I mean, any shrimp does, and so they're not always in the one area. They're in different areas.

MR. MERRIFIELD: I mean, there's been a lot of misconception, and I haven't really been doing this for fifteen years, and it's more like ten or twelve, but it has been that there is some advantage to shrimping where the coral is, and that's just not the case. There's two reasons, and, of course, the gear cannot handle that kind of -- They're looking for soft substrate bottom. That's where the shrimp are generally -- They're in the sand, and that's where they generally like to fish. The coral -- They do go into the coral, when there's rough waters, and they go in, and they come out.

They go in, and they come out, but that is not a fishable area, and so just the risk is too high, and nobody wants to mess their gear up, much less flip their boat, and so it's a crew and vessel safety issue, and, I mean, it's just not -- It's not been an issue, and they've known where that coral has been for over a hundred years. They've been fishing out there for over a hundred years, and so they've known where it was. If you look at the tracks, and I have old paper chart tracks, which you might be interested in those. I have old paper chart tracks, and you can see exactly where it is, because it's where their tracks are now, and so is there anything else that we want to cover regarding these questions? Damian.

MR. VOGELSONG: I was just going to echo what Nancy and Mike was saying. We can't drag in the coral, and we've never drug, you know, in coral. It would tear our gear up, but we need the bank open to what it was before it was expanded, because, like Nancy was saying, we've got to have the opportunity to drag in those areas. Some years -- I mean, we don't know what's been there the last two or three years it's been closed, and, you know, the last few years, we haven't caught as much in the deep water, because, like Jason was saying, if the shrimp are in the closed area, they don't have a reason to move, if they're not getting drug on, and, I mean, for all we know, they could be -- I mean, just an enormous amount there, but we don't know, because it's closed.

Like Mike has all the coordinates from years past, when we've worked and drug there, before it was extended further offshore, and, I mean, it was all workable stuff. We never caught any coral, and we've never seen any coral, and I want to say it's from like 320 foot out, and you don't see no coral, but some of it is closed out to 350 and 360 foot. We need the offshore edge to move back in, and I forget what year it was, three or four years ago, whenever it was expanded, but, prior to that, we were able to get to like 300, or 320, foot, and we seemed to catch a lot more.

Now, you can't get in there, you know, and, I mean, it would be of great value if that was reopened, because, like I said, the last few years, there's been less production in the deepwater, because, ultimately, there is less area to work.

MR. MERRIFIELD: Thanks, Damian, and let me say -- Let me also say that, when they talk about getting close to the coral, the boundary that we're looking to create a fishery access area in is, in the closest spot, in the very closest spot, is over three football fields distance away, and that doesn't account for -- That's just where the line is, and they don't run the line that close, because they have to have a margin-of-error for themselves to be able to stay out of that area. You've got, in the very

closest spot, and, in most places, it's a lot more than that, but it's over 300 -- It's three football fields distance away, plus whatever margin-of-error they add for their own purpose.

MS. IBERLE: All right. I really appreciate your feedback on that, and I think that's all we had on that one.

MR. MERRIFIELD: Did you want to ask the last question?

MS. IBERLE: Yes, and so is there -- Definitely this is an important one. Is there any additional recommendations that the AP would like to make sure that the council hears? Again, we're going to have a specific Shrimp Committee at the June council meeting, where the council will be discussing specifically Coral Amendment 10, and so a good time to -- You know, anything else that the council needs to hear pertaining to this amendment.

MS. SHIRLEY: I don't think it's anything new, but I would just reiterate that you've got three active fishermen on the phone that have said let's open it, and I'm going to echo that. Let's open the area.

MR. MERRIFIELD: Any recommendations from Jason or Damian out there for additional recommendations that you would like the council to consider?

MR. VOGELSONG: I was just -- The more we have open, you know, the more options we have when we do go out to work, and, just like Nancy was saying, you know, the shrimp migrate, and they move from year-to-year, and they're in different spots, and you've just got to hunt them down. Other than that, I mean, the more we can get open.

MR. MERRIFIELD: Okay. Thank you, Jason. Okay. I think we've -- Damian, go ahead.

MR. SOLORZANO: I just wanted it in the record one more time that we all want it open, and that's all I wanted to say.

MR. MERRIFIELD: Okay. Thank you. I think we've wrapped-up the update for Coral Amendment 10, and where we in terms of the additional items that the council would like to see? I know that there's a lot of bycatch information, because there's been a lot of onboard observers, and so that information should be available, and, on that offshore side, there's very little bycatch, and so it would be interesting to see that report.

MR. FLUECH: Mike, what are the trawl times? What are the trawl times usually for those? I mean, it's not similar to your penaeid shrimp, right?

MR. MERRIFIELD: It's similar, and I will ask these guys, but what are you trawl times, Jason or Damian? How long do you trawl at a time?

MR. VOGELSONG: You know, we try to make three drags a night, you know, and so three hours, three-and-a-half hours, per drag.

MR. FLUECH: Thanks.

MR. MERRIFIELD: Okay. Thank you.

MS. IBERLE: All right. I guess that wraps us up for --

MR. MERRIFIELD: So I guess my question is where are we on the items that the council is looking for to add to the amendment?

MS. IBERLE: So, as far as the feedback from this AP, what we'll do is just go ahead and compile some of that, and package that up into a report. As far as the bycatch stuff, the IPT is currently working on the rest of the requests for that amendment, and so we'll learn a little bit more about that at the June meeting, because the IPT is currently working on compiling what's needed for the rest of the document, and so pretty much -- I don't want to misspeak, and Chip is coming to the table.

DR. COLLIER: You had mentioned that, inshore versus offshore of the reef, you said the offshore has less bycatch, and I'm curious. North or south is there more or less bycatch? When this section on bycatch is being developed -- You know, where do you guys see potential breaks in bycatch, or potential changes? That way, we can investigate the data, to see if that's actually there, based on the observer work, and I'm just curious. You know, is there anything -- Based on their feeling, what should we look for in the bycatch? This would be the first time I think it's really been -- That somebody has really dove into the data to find things.

MR. MERRIFIELD: I will let those guys answer, but I would say that, inshore versus offshore, I don't think there's a difference probably anywhere offshore, north or south, and I would think that it's more inshore and offshore, but go ahead, Jason.

MR. VOGELSONG: Yes, it's definitely inshore and offshore. You know, offshore, the coral out there, it's cleaner than -- I mean, you're prone to get more spots of smaller crabs, and you will get the smaller crabs offshore too, and they'll move some with the rock shrimp as well.

MR. MERRIFIELD: Okay. Thanks, Jason. On these other items, we have essential fish habitat impact, and I guess we're looking at including more information regarding minimizing effects on essential fish habitat, and what are we talking about there? Is it distance from the reef?

MS. HOWINGTON: So that's more going to be -- One of the main critiques that the letter had was that it was -- Basically, they were arguing that the amendment was actually against the Coral FMP, because we were not protecting the Coral FMP by doing this, and so we're going to have to go and -- Myra is frowning, and so I think I'm wording this incorrectly, but we're going to have to go and add an argument of is this damaging coral, what would any kind of the damage be, and how we are protecting the coral, and how are we then also benefitting the shrimp, and what is the economic benefit of that, and so all of those things are going to be things that we're going to be adding in words, and we're going to be tweaking and enhancing, basically.

The council is not interested in a really huge change for this amendment, and I think they like the shrimp fishery access area, and they want it to be open, and so we are just trying to address anything that the letter said and do it hopefully -- We're hoping to resubmit it by the end of the year, at the latest, and most likely December.

MR. MERRIFIELD: Okay. That's great, and, if there's anything that we can do to assist with that, please let us know.

MS. HOWINGTON: I will reach out, and so, like I said, the IPT has met, and we've focused on, okay, we're only going to be updating these certain sections, and we're going to be updating certain words, and so we're just going to be going in, tweaking and enhancing, and then resubmitting, and hopefully it's not a big lift and it gets approved. Let's hope.

MR. MERRIFIELD: I hope it's that easy. I know that it won't be, but, I mean, that's great. Okay. Are we done with that?

MS. IBERLE: I think we are.

MR. MERRIFIELD: Okay. Let's move on to fishery disaster relief.

MS. IBERLE: Before we move on to the fishery disaster relief, I knew that I was going to forget, and I did, but we will have a quick public comment. We don't have anybody in the room, I'm assuming, that wants to make public comment, and so what I'm going to do is pop a slide up, really quick, and so, if anybody online would like to make a public comment, please raise your hand. That first arrow is pointing to the hand-raise, and then we'll see you hand on our end, and we can unmute you, and so I'll give this a minute to see if anybody from the public would like to make a public comment. I am not seeing anybody, and I will note that, for this meeting in particular, before we wrap, we'll have one more opportunity. We'll kind of pause and see if a member of the public would like to make another comment, and so thank you. With that, I will queue up --

So the fishery disaster relief discussion, obviously, this is a very important issue. I have a couple of slides to just go over some resources, some current events, and then kind of to guide our discussion, if they're going to pull up. I might have also broken the computer.

Okay. All right, and so, again, these are just kind of primer slides to jumpstart our discussion. You guys are going to be more in-tune with this, because this is, obviously, more pertinent to you guys, and you're the experts, and so we've heard a lot about dumping recently, and so just, as a refresher, or for anybody on the webinar that doesn't know, dumping refers to the imports that are sold in the U.S. at less than a fair market value, and, under the Tariff Act of 1930, industries can petition the government for relief from dumping.

The government body that deals with that is the U.S. Department of Commerce, and they're the ones that determine if dumping is occurring, but investigations of occurrences of dumping are handled by the International Trade Commission, or ITC.

Currently, there is an investigation. In 2023, the American Shrimp Processors Association submitted a petition, and that's linked here, for support for imports, specifically from Ecuador, India, Indonesia, and Vietnam. In December of last year, the ITC, or that International Trade Commission, made a preliminary decision that it was going to start an investigation, and the final results of that investigation are expected in the fall of 2024.

I wanted to bring up one additional resource from NOAA, and that's the NOAA Seafood Import Monitoring Program. This program established reporting and recordkeeping for imports of

thirteen species. Shrimp was added to that list in 2018, and this was to help combat illegal imports, unreported imports, and unregulated catch, and so NOAA uses the International Trade data system to trace species back to point-of-harvest. I will say that the SIMP reports to Congress, and the most recent report was 2021, and their website is listed there.

Then the council has been discussing specifically disaster declarations for a little bit now, and so what you've got on your screen is a lot of words, and I'm not going to read everything verbatim, but, at the December 2023 meeting, we had kind of -- This was the status of each state with regard to disaster declaration, and then I added some updates after the March meeting.

The one thing that I did want to note was that, in November of 2023, Louisiana and Alabama requested disaster determinations from NOAA, but NOAA found that the criteria were not met, since the resource still exists and was accessible, and we were told that the determination would be similar for the South Atlantic side, and, again, that was on the state level. In addition, there is going to be important changes under the Magnuson-Stevens Act from the Fisheries Resource Disaster Improvement Act, and the council is going to be getting a review of that in June, and so some more information to come in June regarding that.

How can the council help? This is kind of where we're wanting your feedback, and so, obviously, the council cannot submit a petition for anti-dumping, and the disaster declaration kind of falls more on the state side, but the council can support states' actions to request disaster relief, and then one last question to leave the AP with, and so is there anything else specifically that the AP thinks that the council, obviously within the bounds of what the council is able to do, that the council should do to help support southern U.S. shrimpers, and, with that, I will turn it over.

MR. MERRIFIELD: Does anybody have any comments on that? I've got a lot myself, but I will wait until the end.

MR. WILLIS: I know that, at the last meeting, it was briefly brought up, because there were -- Actually, we were spending most of our time talking about seagrass, but we got into this dumping issue, and what was amazing is a couple of the captains that I spoke with, and I'm not a shrimper, and I grew up around it, but I was asking what's going on, and the issue they've run into, the last couple of years around this, is, I mean, they're getting paid less for shrimp today than their fathers got paid in 1980.

That was kind of the data they had, and, when you look at it, considering the cost and all that from it, and I know literally several of the guys that do bigger -- Most of them are small shrimpers, but some of the bigger guys -- I mean, they're getting a pittance on this, and it's amazing, and so if there's any -- I don't know what else we could do on the dumping side, but a lot of that ties right in there to that situation, and I'm not sure how or what we could do from it, and I'm no expert, but no means, but I'm just listening to the data that I hear. I mean, even the NC fisheries folks are saying they hear this all the time, when I asked a couple of them, and they said, yes, we're hearing it, but there's got to be more that can be done about that.

MR. MERRIFIELD: Thank you. Does anybody else have a comment? Jody.

MS. SHIRLEY: I mean, I think it's clear we all feel like the dumping is a problem, and I don't know the solution, and I'm kind of new to this whole process, but, besides the prices being driven

down, fuel is extremely high, and so fuel subsidies, or something along those lines, would help the fishermen lower their costs, because the price they're getting at the dock for the shrimp is just absurd. We can't even cover the cost of the fuel, let alone repairs that are needed to the vessels.

MR. MERRIFIELD: Jason, did you have something to add?

MR. VOGELSONG: Yes, and, I mean, definitely on the imports. It has hurt us tremendously, and, like you said, everything that you touch has gone up in price, but, you know, you're getting paid half as much as what you normally would have got, and we're still trying to make it, and it's pretty tough. I mean, you just come to work, and you know you're getting a certain amount at the end of the day, but I don't see why we aren't added to like the USDA, the agricultural, like the farmers. You know, if there's too much corn on the market, then they pay the farmers not to produce corn, you know, and, I mean, it's the same thing with shrimp. If they've got too many shrimp on the market, they should pay the fishermen to not catch shrimp. I don't know if that's a thing, but --

MR. MERRIFIELD: Well, but so the problem is that we have different parts of the government doing different things, and they're not -- This whole of government thing that we're going to talk about later is -- It's so incongruent that it's ridiculous, and so the USDA -- Congress paid USDA to go down and make the process for importing shrimp with Ecuador easier, and so we've been flooded with Ecuadorian shrimp, to more than what this country can consume in a year, and so it crashed the market, and so we've got boats tying up, and boats being sold out of the U.S. that will never come back, and we've got docks that are trying to sell, because they want out of the business, because you can't survive. This is a really dire point that we're in here, and so what can the council do?

I don't know what the council can do, and part of the problem is that the council, and this happens at the state level as well, is we have all these agencies that are regulatory, and they make regulations, and they enforce regulations, but who is it that's out there that is managing to make sure that this food source, that this seafood, domestic seafood, product is taken care of, like the farmers are?

MR. FLUECH: I think, exactly to your point, it's going to come down to -- I mean, this is where legislation -- I think it has to be done at that level. I do wonder what the council, and I am just curious, just like with NOAA's seafood strategy, and, I mean, there's some -- You know, it's great on paper, and, I mean, I still have lots of questions of it's great to have big, broad goals, which I agree with what they have, but how are they going to implement it, and so, I mean, I do wonder what role can the council play there, in trying to provide that support, and I do also wonder --

On the infrastructure side, what opportunities are potentially available, because, I mean, I know, even in the past several months, between North Carolina and South Carolina, we lost some docks, and the one is Darian is getting close, and, I mean, so we're -- It's going to continue happening, and so -- But I don't know, from a council perspective, but I would be interested to hear maybe what the council is going to do, working with NOAA on that seafood strategy plan, because, ultimately, there's going to have to be multiple resources, from multiple agencies.

You know, when there are disasters, expediting that, and trying to streamline the process, and so I guess, from that aspect, from a capacity building, I guess, is maybe the role the council has played,

but, I agree, and, on some of the other things, I just feel like it's on another level than what the council can do.

MR. MERRIFIELD: Jason, did you have something to say?

MR. VOGELSONG: Yes, and I was just going to add to that. I mean, you know, like a lot of us that have been doing this for a while, this is the first year, in thirty years that I've been doing this, you know, that I've ever seen it this bad. I mean, I don't know what to do. Like I said, I've been shrimping for thirty years, and I'm to the point where I think I can probably do something better, or make more money doing something else, and being home every day.

You know, I mean, I love my job, and I'm holding on hoping for a change, but, you know, you can only hold on for so long, and a lot of these older guys, that have these docks and stuff, they don't have nobody young coming in, that's going to step in and take it over and run it like they did, and, if they do, they're going to do it for a cash value, and so they're going to want to buy the imported shrimp, and they're going to want to sell those for a maximum dollar, and to profit more, and so, I mean, we're struggling, and, from what I've seen --

It's hard, you know, and, like I said, we don't leave and walk out the door at six o'clock or the morning, or whatever, and go and clock in and be back home around four or five to play with our kids, and knowing, at the end of that week, we've got a paycheck. We ain't got that, and we're liable to get a phone call tomorrow saying that they can't buy no more shrimp, and the market is loaded, and so, you know, we need some protections, and I don't know if there's anybody that is lobbying for us, and how much all that costs, because everybody says it's political, but, you know, I guess the dollars is what pushes you through the door around them places, and I don't feel like we've got nobody that's got our back.

MR. MERRIFIELD: Thanks, Jason. Nancy, did you want to add something?

MS. JONES: Back in the fall, my husband didn't go fishing for two months, because the fish house wasn't going to buy any of the small shrimp, and that's what they were catching, and, you know, two months -- Yes, the shrimp are there, but, if you can't unload them anywhere -- You know, we could catch them, but, you know, what do you do with them? There is nowhere to put them, and so, yes, the product is there, and, you know, they say that we could have went fishing. Well, yes, we could go fishing, but what do you do with it? If you can't sell it, you can't go fishing, and that was the big issue.

You know, the fish house told us, at one point, I don't want them, and so, you know, what do you do, and so he didn't fish for two months, and so then we're living off of my income, which mine was supposed to just help supplement his, and it turned around and went the other way, and so, I mean, and he's been doing this since he was thirteen, and he's sixty-one now. I mean, he did a take a ten-year hiatus, and we tried something else, and he hated it. He hated his land job, and so we came back to it, and, I mean, this is what he wants to do, and so, you know, it's what he loves to do, and he was happy with it, but he's not happy right now with the prices, but, you know, I know the council can't do anything about it, because they can't do anything about the anti-dumping, but it's anti-dumping that is the issue. That's my comment at this time.

MR. MERRIFIELD: So what you're pointing to is the fact that -- The way that the disaster is defined, it does not cover economic disaster, and so we have a resource disaster that you can apply for, but, when our own government creates a disaster economically, we can't go and apply for any assistance in that case.

MS. JONES: Yes, because the shrimp are there, and we could go fish, but, like I said, what do you do with it?

MR. GEER: I was going to say that 80 percent requirement, the criteria to have a fishery failure declaration, is kind of hard. It's based on revenue, and that's a big loss, and what has happened in the shrimp fishery -- I personally I did two of them, and a lot of states have done them as well, and it's kind of hard, but, in 2003, there was a dumping incident, and, in December of 2003 I think is when it was, and China particularly dumped 500 million pounds. There was an investigation from the Department of Commerce, and I don't know if any of you remember this, and there was anti-dumping tariffs that were put in place, and so there is an avenue that -- In this case, that's probably the way to pursue it, and that tariff money went directly back to the shrimp industry.

MR. MERRIFIELD: Yes, because we have disasters that far exceed -- Monetarily, they far exceed that, but the problem is it's not the resource that's the problem, and it's the market that has been damaged.

MR. FLUECH: It used to -- I think, when you say it went back to the industry, and I don't know when that got changed, but that goes to, I believe, a general fund, and I believe there are different associations right now that are trying to petition to change that back, so that you're investing back into the industry.

DR. COLLIER: Bryan is exactly right on that, and, in fact, those tariffs that went in place, that you were talking about back in 2005, they were just recently renewed. They've been in place since, but they just recently got renewed for another -- I think five years is how long they're in place.

MR. MERRIFIELD: Did you have -- Go ahead.

MS. SHIRLEY: Just back to the tariffs, and the issue is though, I think, when those tariffs -- If they are distributed, they go to the processors, and they never trickle down to the fishermen, and so there lies the problem, and then, on top of that, I was just going to say does NOAA have the ability to organize the AP with some of the legislators to allow us the opportunity to plead our case, because the problem is, half the time, you can't get anyone to even respond at a state or national level.

MR. MERRIFIELD: One thing, regarding the -- To get the tariffs put into place, it's a very, very expensive lawyer process, and that's where -- The money gets put up by the processors, and that's why the money gets distributed to the processors, because that's all set up that way, and so that's why that happens that way, and so that's not necessarily the answer for you as a boat owner, and me as a dock owner, and, I mean, it's not necessarily going to do that, but we do this in other industries.

Sugar has a tariff rate quota where we do domestically produce sugar, but we also import a great amount of sugar, and it's a low tariff rate until you reach the maximum amount, which supplements what we produce domestically. Once you go beyond that amount, then you're hit with heavy tariffs, and it stops the dumping process, because the tariffs are going to get so high on dumped product that it's not worth it, and so there are ways that can -- But who is the champion for this?

It's not the council, and is the Department of Commerce? Somebody -- The seafood industry does not have an advocate in the government that's looking out in these other agencies, to see what they're doing, that, when they do these imports, that they allow these imports, and they streamline these import processes, and they're not thinking about the impact that it's going to have on domestic industry. Nancy, we'll go with you, and then we'll go with Mike Travis.

MR. JONES: The other issue with the tariffs is the list of people that are available to receive tariffs is from 2003, and over half of them people are not even shrimping anymore, and like we're personally not on the list, because that was during our ten-year hiatus, the 2003, that he wasn't shrimping, and so he wasn't on the list, and so we never received any tariff money, after he got back into shrimping, which, you know, fine, and we weren't on the list, but, if they're going to start it again, they need to update that list with actual shrimpers that are shrimping now and not, you know, twenty years ago, and that's my thing on that, and they need to redo that list, because, I know, personally, ten people that aren't even shrimping anymore that are on that list, and, you know, it does no good if it doesn't represent actual people that are needing it at this time. That's it.

MR. MERRIFIELD: Thanks, Nancy. Mike.

DR. TRAVIS: Hi, folks. I just wanted to comment on a number of things that have been discussed, but one of the things that is important to this discussion, that I think has been missed, is that, yes, when the anti-dumping duties were initially imposed, back in 2004, those funds did go back to the industry for a while, but -- I can't remember the exact year it happened, but the Byrd Amendment, as it was historically called, is what allowed those funds to be distributed back to the industry folks who were on, quote, unquote, the list that Nancy was talking about.

The Byrd Amendment was rescinded years ago, and that's why those funds do not come back to the industry anymore, and that's not going to change unless new legislation is passed, basically bringing the Byrd Amendment back to allow that to happen. You may get the anti-dumping duties, and, of course, that process is still ongoing, and I think the final word is supposed to come down in late August, early September, somewhere in that timeframe, but, you know, the duties may get imposed on some of the new countries, like India, Ecuador, et cetera, but those monies will not come back to the industry unless other changes are forthcoming.

MR. MERRIFIELD: Thank you, and I'm not saying that we shouldn't do tariffs, but it is somewhat of a shell game too, because, the minute that you tariff India, some other country will be importing Indian shrimp into our country, and it's a very -- It's a very specific -- When they do this tariffs, it's very specific for the product that's coming in, for the country that it's coming in, and how it's coming in, and so, if it changes, it no longer qualifies under that tariff, and so there are ways around that, and I'm not saying we shouldn't do that, but I'm not sure that that's the long-term answer.

DR. TRAVIS: If I can add on to that, and you are spot on, because myself, and some other academic colleagues, did some research on this after the 2004 anti-dumping duties were imposed, and what you're talking about is exactly what we saw happen, and so you saw a reduction in the imports from the countries that got hit with the anti-dumping duties, but, of course, what happened is there is so much capacity out there to grow shrimp via aquaculture, and other countries just came in and made up the deficit, and then more than that, and so you can do that, but, you know, it's never going to have the effect I think that a lot of people are looking for, unless you impose duties on every single country, and every single exporter in all of those countries, that actually farm shrimp, and, boy, that would be a heavy lift, and, personally, I don't see that ever happening.

MR. VOGELSONG: Mike, I don't know if you can hear me, but I'm with Nancy, and what she said, and I'm not even on the list, and I've been out here for thirty years, and, you know, the other thing they did, when they were distributing money with the CARES Act, that, if you showed a 35 percent loss out of the five years, and they had their little calculation deal going, and it just seemed like they already had the numbers, and so they knew who was going to get the money and who wasn't, and I don't know of anybody, that I know of, that got any of it, and there was a lot of it that came through, and, you know, that should be something that should be done away with as well. I mean, yes, they want you to show a loss, but you don't have to -- You shouldn't have to do it between a five-year period and through their algorithm that is not going to distribute it.

DR. TRAVIS: I want to comment on that a little bit too, and so the CARES Act was not handled as a fisheries disaster. That was a totally separate process and pot of money that did not have anything to do specifically with the NMFS fisheries disaster determination process, and so states kind of ran that, you know, how they chose to do it, and, yes, some of them ran them similarly to how we've handled fishery disasters in those states, but some, you know, did their own thing, and so it's just -- I know it can be confusing, but, you know, we're kind of mixing -- We're creating a big old fruit salad here by mixing all these issues together, and, yes, they all go back to the economics of the fishery, but, you know, there are different sources, causes, of the various economic problems in the fishery.

MR. VOGELSONG: Yes, and the tariff list does need to be revised, because, you know, like Nancy said, that was twenty years ago, and there's not many boats out here than what there was from twenty years ago, and I do know that.

MR. MERRIFIELD: So, getting back to how can the council help, I really don't know, and we need -- We definitely need an advocate, and we need somebody that is cross-agency trying to be an advocate for domestic seafood production, because, if we don't, we're not going to have it, and it's all going to be imported.

MR. VOGELSONG: It's definitely got to be somebody that, you know, that cares about the business, I mean, or the industry, and not just what it produces, but what it gives.

MR. MERRIFIELD: I mean, we've got food security issues, food quality issues, and, I mean, if you knew some of the things that about some of the product coming into the country, it would scare you, and so did you have a --

MR. FLUECH: Just a question, and I'm trying to frame this back into how the council can help, because, obviously, there's a lot of stuff that's going to fall well outside of their capacity, but their

thing too is, in the past year, because of these issues, you've had a lot of different associations, and you've seen, you know, revamps in Georgia and South Carolina, and most of these other states too, and I'm just -- In that aspect, can the council -- It's good with -- I mean, given the regional approach, I mean, the networking aspect, I think, the more and more that these associations can understand who the players are, and understand who does what, when, and where, because, from a state agency, we can't advocate -- The council can't advocate, but at least you guys can make connections for these associations that are coming about, because they're volunteering, and they all work full-time on side jobs, and so I guess I will throw that out there, of just the council maybe being able to help make these connections maybe between these industry associations.

At the end of the day, they need to be able to get in front of our legislators and talk about this, because, if they're not at the table, it's going to go away, and we are seeing that in Texas and Louisiana, where the industries are a lot larger, and so, even for our smaller states here, and I know -- I can speak to Georgia, and I know they're trying to get face time more and more with our state legislators, and I know that doesn't immediately solve the issue, but, at least from the organizational perspective of the council, being able to maybe identify who are the leads in these associations, who can they connect them with, just so they understand the playing field, because, I think, the more they can keep talking with NOAA --

We do have a meeting next week in Baton Rouge, with some NOAA officials and USDA and some industry reps, and just to start these conversations, because, I think the more they can keep talking, and are armed with information about how the management process works, they have that advocacy capacity, and so at least -- Maybe there's where the council can play that capacity-building role, just saying, hey, you guys need to be in front of this person, or this person, and, even though we can't advocate, we can at least try to build connections.

MR. MERRIFIELD: There's a meeting in May, later in May, that FWC is putting together, a symposium.

MR. FLUECH: The future of the industry, and I guess it's mid-May, in St. Augustine.

MR. MERRIFIELD: That has resulted from meetings that we've had with FWC, basically stating how long do you anticipate commercial fishing will continue in the State of Florida, and so we're moving on that way, but we have Florida, Georgia, South Carolina, and North Carolina, and all these groups trying to do something that are all in the South Atlantic Council's purview, and what can the council do? They want to put these letters together, and can the council be doing some of this? Can the council be pushing -- I mean, what can -- I guess I would put the question back on you, and what can the council do to help?

MS. IBERLE: Yes, and so, I think, Bryan, some of the ideas that you brought forth will definitely be helpful. Definitely the connections between the industry, and then I think the NOAA seafood strategy, and I think the council can request more information about how NOAA is specifically, through the NOAA seafood strategy, advocating for domestic shrimp. I think that can be something that the council can definitely do.

I think another thing that might not be a bad idea is to just make sure that the council understands, you know, and give the council maybe more of an anti-dumping -- Of have that discussion with the council, so that all of our council members understand really how much of a -- I know we've

been talking about kind of the intricacies of that process, and just so that, you know, maybe council members that don't know as much about the anti-dumping situation specifically are a little bit more at least aware of the situation, and so I think those three things definitely could help benefit the fishery.

I know the council intended on writing a letter of support to support the states within the disaster declaration, and, obviously, you heard Mike provide input on that, and then we have the issue of disaster declaration on the resource -- Not necessarily -- The imports kind of impeding that process, and so, you know, if that process is changed, then the council could write a letter of support for the states in moving forward on that disaster declaration, but I think I definitely captured those suggestions, but, anything additional that the AP would like to suggest, I'm all ears, and I know the council will be as well.

MR. FLUECH: I do know there's some others online, and they're wanting to know if they can do public comment now about this topic, and I wasn't sure, and it's actually some of the reps from the state association, and so they were asking me, but I didn't know, and I wanted to check.

MR. MERRIFIELD: So we've kind of concluded this conversation. Is there anything else that we need to talk about? The only other thing I would say is that I know that NOAA has a FishWatch, which is a tool that kind of is in competition with Monterrey Bay, but I think we should be going with FishWatch, because they're the ones that regulate the fisheries, and so they should be promoting that more. That is not necessarily going to help us in the shrimp world, but it is a tool that they've spent a lot of money developing, and they should be promoting it, and, beyond that, I don't really have anything else. If there's nothing else, then I guess we can open it up to public comment.

MS. IBERLE: I guess the AP members that are online -- Any additional AP members have any comment before we switch over? I just want to make sure that everybody has a chance to speak. Jason.

MR. VOGELSONG: I guess it is the more people you know on the higher end that gets heard, and, like they say, the squeaky wheel gets the grease, and we need somebody squeaking for us. I mean, the way we feel out here is just like we're one little old peanut on a farm, and there are a lot of peanuts on that farm, and we don't know them all, and, you know, you guys are more on the outreach side, and, I mean, that would probably help a lot.

MR. MERRIFIELD: Okay. Thank you. I think that's probably good enough discussion on that.

MS. IBERLE: I think so, and I think we've got some good --

MR. MERRIFIELD: Let me just ask one more question, before we go on to public comment, and so, when I met with the FWC, and the Department of Agriculture within the State of Florida, it is not in the purview of -- It's not in the responsibility of the Department of Agriculture in the State of Florida to promote wild-caught product, and so they can promote farm-raised tilapia, and they can promote any kind of farm-raised, either sea or land, but they can't do a wild-caught.

MR. FLUECH: Fresh from Florida can. I mean, most of your states --

MR. MERRIFIELD: Fresh from Florida will.

MR. FLUECH: Which is through the Department of Ag. I mean, we have Georgia Grown, and there's a South Carolina Fresh one, and so, I mean, yes, each of your state Department of Ag will have separate -- Or will have their own marketing programs, but, yes, those are generally designed for agriculture.

MR. MERRIFIELD: Right.

MR. FLUECH: Seafood gets tacked on, but, yes, it's certainly not the same.

MR. MERRIFIELD: So my question to you is are we into that same roadblock with the council, or NMFS?

MS. IBERLE: So the council itself, obviously, doesn't have -- They wouldn't be able to advocate for wild-caught versus farm-raised. However, the NOAA seafood strategy would be the place that the council could work with NOAA to kind of hone-in on really focusing on that wild-caught shrimp, and so I think that would be the most appropriate place there, but I'm looking around the room. I think that would be the most appropriate place.

MR. VOGELSONG: You're going to have to run that by me again. Did you say you could promote farm, but you cannot promote wild, and is that what you --

MR. MERRIFIELD: In the State of Florida, and the distinction that Bryan brought up is that the Fresh from Florida does promote Florida wild-caught product, yes, but the Department of Agriculture as a whole is about developing, and supporting, agriculture and aquaculture.

MR. VOGELSONG: Right, but, I mean, we catch wild-caught, but, I mean, we're still basically riding on a tractor in a field.

MR. MERRIFIELD: Good point. I will mention that to -- Okay. I think, with that, we can open it up to outside comment.

MS. IBERLE: So, if you would like to make a comment, if you're on the webinar, go ahead and raise your hand, and I can actually switch presentations here. All right. We've got Brian Jones.

MR. JONES: Hello, everyone, and thank you so much. My name is Brian Jones, and I'm both the Vice President of the South Carolina's Shrimpers Association as well as the South Carolina -- I'm one of the state directors for the United States Shrimpers Coalition, which is basically a coalition of the different shrimper associations from Texas through North Carolina.

I wanted to touch on a couple of quick things, particularly the anti-dumping countervailing duty trade action that's before the International Trade Commission and the Department of Commerce, just to add a little bit more clarity. With the anti-dumping, that is a huge issue, but there's also countervailing duties, which is basically, in addition to dumping more onto the market, it's also where those foreign governments subside the price so that they can, you know, sell it at a cheaper level.

There's already been preliminary determinations on the countervailing duties against India, Ecuador, and Vietnam, but not Indonesia. The two test companies that they looked at didn't rise to the level of countervailing duties that were already in place, and the anti-dumping will come later on with their determination, and so that's one good thing that we're working on, and we are a party to that trade action.

As far as like looking for groups to take up the mantle and be advocates for the industry, so we're definitely trying to do that, in coordination with Georgia commercial fishermen, North Carolina fisheries, Louisiana Shrimper's Association, Texas Shrimper's Association, and so that's one thing. The second thing is the economic disaster declarations, and so to keep that separate and distinct from the trade actions.

You know, a lot of us did, you know, try to promote these economic disaster declarations in coastal communities. Particularly here in South Carolina, it was Bluffton, Port Royal, Mount Pleasant, McClellanville, and, you know, what we found was that the Department of Commerce, and, as you guys stated before, their, I guess, interpretation of anthropogenic causes did not include economic disasters, because, as you mentioned, the fishery still does exist.

Our fix for that is to work with a couple of legislators to create a bill to specifically articulate the definition to include economic disasters in the Magnuson-Stevens Act, and so that's something that's in the works right now, and I guess that's my public comment. I appreciate all the work that you guys do, and advocacy, and supporting everything that, you know, we're doing to work in coordination, and I certainly look forward to meeting with some of the key stakeholders and thought-leaders in the industry, and, if there's anything else that we can do, we would love to be a resource for you as well.

MR. MERRIFIELD: Thank you, Brian. Did you have a comment, Bryan?

MR. FLUECH: I was just going to add -- You know, again, these associations, like the South Carolina, the Georgia, and, you know, even in the Gulf, are building up. I don't know if you guys saw, but, you know, Maine -- Maine's legislation just, I guess, passed $60 million to help for emergency disaster for all the storms that their commercial fishing waterfront has had, and a big role in that is like the Maine Fishermen's Association, who has built those relationships with the legislators, and I realize that Maine is very different from here, but it just does show the capacity building of those associations, who can advocate, who can go lobby. That does play a role, and even what happened in Maine -- That didn't happen overnight, the legislation to say, yes, we're going to give you $60 million, but that -- So, I mean, I do think, as these issues -- I think the role of the associations, that they can play that we can't, for at least those of us that are in agencies, they're going to continue playing an important role.

MR. MERRIFIELD: Thanks, Bryan. Did we have somebody else?

MS. IBERLE: I will give it another minute, and I don't see any hands right now. Again, if you would like to make a public comment, this little hand-raise icon will let us know, and then we can unmute you. All right. I am not seeing any additional hands. I am going to flip back to the agenda really quickly here. All right. That would bring us to Item 3, and so that is the fishery performance report for white and rock shrimp, and we're going to start with the SAFE report.

MR. MERRIFIELD: Let's take a ten-minute break. Okay. We'll be back in ten minutes. Don't go away out there.

(Whereupon, a recess was taken.)

MR. MERRIFIELD: Okay. Are we ready to get started again? Okay, and so we're going to -- As suggested, we're going to do the SAFE report and then probably call it a day. Do we comment at the end of the day, or we don't have to?

MS. IBERLE: Unless you want to, and we can, and then we'll start tomorrow with the FPR.

MR. MERRIFIELD: Okay. So this will be the last item of the day, and we're going to do the shrimp SAFE report. Chip, go ahead.

DR. COLLIER: Thank you, and so this is going to be the start of the -- SAFE report stands for Stock Assessment and Fishery Evaluation, and so this is a requirement for each fishery management plan. We have not developed this in quite some time for the shrimp fishery, and so what I'm going to present today is a brief introduction to it, focused in on white and rock shrimp. I do have all the plots and everything developed for brown and pink shrimp as well, and I just did not include them in here.

We wanted to get the comments on white and rock shrimp, and so we directed your focus at that, but what we can do is, after we hear all your comments, and, you know, you all might have some recommendations on how to improve this report, and so please let me know, and I would include everything that you recommend for white and rock shrimp, along with brown and pink shrimp, as long as we're not getting into confidential data. There could be some issues with pink shrimp, with some confidential data, due to at least my perception of that fishery being much smaller than the other two for the South Atlantic.

Getting into this, what is a SAFE report, and a SAFE report is a document that includes information documenting trends or changes in the resource, ecosystem, and fishery, but it also assesses the success of the relevant state and federal fishery management plans, all of which can help developing future management plans, or changes to future management plans, if they're needed. What we've -- If you want to zoom-in, and the text is showing up fairly small in the HTML link that's being provided, and so, if you just click on "control", and then your mouse, you can zoom-in a little bit, if you're looking at it separate from the presentation.

The information included in this is going to look at what we have for status determination criteria, and we also included catch level recommendations, although we don't really have catch level recommendations for those penaeid shrimp and rock shrimp, because of how short-lived they are, because they're generally less than a year old, or two years old, and we do not have ACLs, OFLs, or ABCs developed for those species.

We also have some landings, some social and economic trends, and then we include links for the essential fish habitat for the fishery. The data included for this are basically from 1994 to 2022, and the reason for that is that's -- The Shrimp FMP was enacted in 1993, and so just really focusing on the time period when the Shrimp Management Plan was in place.

I do list here the different data sources where I pulled information, and this is -- Obviously, some of it, you will notice, is a copied program, and so there is some language in there that I likely forgot to remove, such as the ACL monitoring page, and that probably should not be included in this, because we do not have ACLs for the shrimp fishery. Most of the data is being pulled from the Atlantic Coast Cooperative Statistics Program, or ACCSP, as it's commonly referred to, and that program houses information collected from the states, basically through the trip ticket program, and we're utilizing that to analyze the data, and then, from there, I will filter the data to the South Atlantic region that's applicable. We also have the link, as I mentioned before, to the Essential Fish Habitat Mapper, and then I also provide links to past and ongoing amendments.

I'm not going to go through Table 1.1. This is just information that I've pulled from the FMP and fishery management plan amendments to develop the criteria for the status determination, and you will see that we have everything developed for an overfished evaluation, overfishing evaluation, optimum yield, maximum fishing mortality threshold, and we also have MSST, which is minimum stock size threshold, and these are developed for each species. We do have MSY developed for each of those species, and they're generally developed in pounds, and those are -- So I've included all that, the definitions for those, but you'll see that most of them don't have values associated with them, and the reason for that is we just don't have information that's been assigned for it.

Skipping down to 1.2, we do not have assessments for shrimp in the South Atlantic region, and, therefore, we do not have overfishing limits for the stocks. Recent or upcoming amendments, I basically filtered this for the past ten years, and there's been only two different amendments that have gone into place for the shrimp fishery.

Amendment 10 is the comprehensive dealer reporting, and then Amendment 11 dealt with cold-weather closed areas for pink, brown, and white shrimp, and, basically, what this was is allowing states to request areas to be closed due to cold weather, particularly for white shrimp. If temperatures get below a certain threshold, for a certain amount of time, they do perish, and this is designed to protect those white shrimp that are overwintering, and hopefully have a successful year the following year.

The first graph we have here, this is going to be combined landings for all four species of shrimp, brown, pink, rock, and white, from 1990 to 2022, and what you can see is, back in the late 1990s, and so 1996 -- Right here was a peak, and then it kind of dropped, all the way to 2013, and, since then, it's gone back up to about the average over that time period. One of the reasons for this high value, back in that time period, was likely due to rock shrimp, and that was their peak landing, in 1996, and you will see how big that peak was when we get into the rock shrimp data.

Figure 1.2 is the number of trips reported, as well as the number of unique IDs, whether it is for a dealer or for a fisher, and so the number of trips -- You will see this huge increase in the late 1990s, and that could be due to states adopting some trip ticket programs, and so information on the number of trips prior to 1996, 1997, might be of question, and so just keep that in the back of your mind, but what you can see is what many people have been talking about, is you just see this decrease in the overall number of trips, and you're seeing a decrease in the overall number of fishers, and, a little bit after the decrease in the number of trips and fishers, you're also seeing a decrease in the number of dealers, and, with 2022 being the lowest for all those after, I feel like the reporting was being more complete.

If you're interested in a little bit of life history on white shrimp, that's provided here in Section 2, and, if you just want to jump to different species, there's these big guides, over to the left, that will pop you around to different areas.

For trends in abundance, there is a coastal trawl survey that is conducted out of South Carolina DNR. How they do the trawl is listed in the first paragraph, and you can see the -- This trawl survey is done primarily in the -- It's done in the nearshore oceanic waters, and I did not include any information from let's say Pamlico Sound or any of the rivers that the states do, and the reason for this, just thinking of this as a regional process, is it would be easier just to look at one index, as opposed to gathering all the data from each state, and so I did try to make things easy on myself here, but you can see the data from 1990 to 2022.

In general, in the past ten years, you can see an uptick in white shrimp, and that matches what many of the fishermen are saying, that there's a pretty big increase in white shrimp in the past decade, and you'll be hearing Pat talk about some of this, Pat and Sonny talk about some of the changes that they're seeing in white shrimp.

This data that -- I probably do need to clarify that, because there is information north of North Carolina now, but I am focused on the fishery management plan for the South Atlantic region, and so the fishery management plan does end at the North Carolina-Virginia border, and so I'm not including any landings from North Carolina and northward in this plot.

Now going into the catches of white shrimp since 1994, you can see pretty high landings in 1995, dropping down to lows in 2013, and then increasing since 2013. The number of unique trips, and this is the same pattern that you've been seeing in the other ones, and it's highs occurring in the early 2000s, dropping with the lowest value in 2022, and you will see that across the dealers, the fishers, and the number of trips.

Getting into monthly landings by state, and this was a request I believe by the Socioeconomic Panel, to include some of the information by state, and so you can begin to see how the white shrimp fishery was operating back in the 1990s, and you will see that it generally starts in August, and it seems to begin to peak, and then the highest value tended to occur around October, and you will see that through the time series.

In the more recent time period, you're beginning to see this spring fishery, and you're also beginning to see January show up, and so it seems like the fishery is going into longer time periods, and potentially the fishery is shifting back into a later season, but that's my perception, and you guys might have a very different perception of that, and so let me know if I'm off on that, and I can change my language, and just let me know where it's going.

We also provide trip revenue, and what this is is ex-vessel value from the ACCSP data, and we have both the annual data, and so the value that was reported on the dock, and then an inflation-adjusted -- The values are adjusted to 2022 values, and that is the solid line, and the dotted lines are the value that is seen at the dock. For the most part, the trip revenue has remained fairly consistent, if you look at the annual information, but it decreased quite a bit from the early 2000s, or the late 1990s, and then it's been gradually increasing, the trip revenue.

The price per pound, much like you guys had mentioned earlier, even though the annual value hasn't changed much, if you look at the inflation-adjusted, it has been decreasing pretty substantially over the past ten years.

Social trends, I'm only providing one of the social trends in this right now. We recognize closures being a substantial impact to the fisheries, and so what we do is we're including the closures here as a potential negative. The other thing that we want to include in the social trends is information that you guys are going to be talking about in the fishery performance report, and so that will be added into this report after you guys have talked about how -- After you guys have completed the questions for the fishery performance report.

I can stop there on white shrimp, and then we can go into rock shrimp next, but just if there's any questions, or any comments, that you would like to see. There is a presentation that's going to be occurring tomorrow from Robert Dunn, and he's going to be talking about maybe some environmental drivers for the shrimp species, particularly off of Georgia and South Carolina, and I would like to include that into this report as maybe some environmental impacts on the fishery, and so that will be looking at both -- Or I guess all three, pink shrimp, brown shrimp, and white shrimp.

With that, are there any comments on information that was included, anything that you're like this guy really needs to include this information? What we like to do, with these SAFE reports, is really get your input on what you think is a good way to evaluate this fishery, and so, if you were to say, hey, this fishery is not doing great, and what would we look at, or this fishery is doing awesome, and what would we look at?

MR. GWIN: Thank you, Chip, for that. Did you have a chart on there that showed the shrimp landings, a graph that showed them for each year going up and down, and was I reading that right?

DR. COLLIER: This plot right here?

MR. GWIN: That's landings from year to year?

DR. COLLIER: That's correct, yes. That's annual landings.

MR. GWIN: So I'm seeing it going way up, and then way down, and then --

MR. MERRIFIELD: Jason.

MR. VOGELSONG: A lot of things, you know, the economic impact of it would be not that there would be a depletion in the shrimp, and, I mean, if you look at when the fuel got real high, in, you know, 2007, or 2008, or probably 2005, 2006, 2007, and 2008, and a lot of people just got out of the business, and so you didn't have the landings, or they still had their boats, but they didn't fish as much, you know, and that's something else to take into consideration, and then, in the early 1990s, when we were catching a lot of rock shrimp, you had a lot of the boats from the Gulf that had permits that participated, but, with it being, you know, the high cost of things, a lot of people can't afford, you know, to bring that stuff around and work it. A lot of that might play into the numbers game.

I mean, like last year, you know, it was -- You had to be 100 percent sure to know that there was going to be some shrimp there before we even left from where we're from, and we're not that far from it, but to take that risk, to run all the way out there to check the bottom, and to come all the way back to -- You know, if you're going to have anything or not.

That's why like last year will be a low-number year, because the cost of things, and I'm sure that's played a role with it in the past, and a lot of people that's getting out of the business now, because things are getting so bad, and so, you know, it could have a lot of impact on the numbers.

DR. COLLIER: Thank you, Jason. That's a good point, and I could potentially include diesel prices in here. I just need to think of a good data source to grab that, but I think that would be a good piece of information for all of our SAFE reports.

MS. SHIRLEY: On top of what Jason said, not only are the landings down because of the inability to take the risk to go -- You know, to spend the money on the fuel, but, also, the risk of is anyone buying, and there wasn't demand, and so many people just parked their boats. The uncertainty of the market, and I don't know how you put that in the report, but it's something to discuss.

MR. VOGELSONG: Yes, because, even right now -- With, you know, a lot of these crews, they can work a land job and make just as much money as what they're going to make being away from home, you know, and crew has played a crucial role here in the last two years, as far as, you know, being able to work as well, because you've got have experienced people to do the job, and you can't just pick up somebody on the side of the road and think they're going to know what's going on, and so, I mean, that's put us a few steps back as well, but, like I said, it wouldn't have been much for us, but, still, we weighed it, and it was like we would send one guinea pig at a time, basically.

You know, Maynard, he went once or twice and struck out, and then, you know, you would wait a couple of weeks or whatever, until the next moon phase, and someone else would go and check, and, you know, before, when the fuel wasn't as bad, and knowing that the market was good, because the price of lobster was down as well, and, you know, they're not necessarily farm raising those, and, I mean, they're still getting them from Mexico, but, you know, the price was down on that as well, and so it's just those things buy into, I guess, the way the economy would be. If you're in a recession-type year, there's a lot of people that would normally fish locally just hanging it up and getting a land job for the year.

MR. FLUECH: Those are excellent points, and I think you're seeing this industry having to be much more calculated risk, instead of just going out and dragging maybe like historically, and, you know, they could go out daily. The other thing too is just that shift in -- Where, traditionally, that fall was your money-maker, and the roe shrimp now -- I mean, that's -- We've heard more and more of the guys say that makes or breaks us this year, and we're hearing less and less about the brownies, as far as just the size, especially the markets for our shrimpers --

The markets want the bigger shrimp, and so, I mean, a lot of these guys aren't even -- It's not even worth their time to harvest the small brownies, unless they can pedal them, and so, in the summertime, I mean, at least in Georgia, it's almost become dead, and so, you know, we've heard reports, both in Georgia and South Carolina, whereas that may be -- Traditionally, that September and October was kind of the money-maker, and, just like what your data is showing, it's pushing

more and more later, because the size is better, but not only the fuel, but, between lack of crew, and between just some of the other things, like can they even sell it, and they've having to be a lot more strategic in going out.

As far as these metrics of the industry, and, I know, a lot of times, we talk about sustainability from an environmental context, but I think, for our shrimp, we really have to look at that socioeconomic side, because the marshes are there, the habitat is there, and the shrimp are there, but just there's so many external factors that they have to contend with that it's just -- It's shifting how they fish, when they fish, if they can even find people to fish, and so I think that's driving a lot of how our industry is operating now.

MR. MERRIFIELD: Go ahead, Jason.

MR. VOGELSONG: Well, I was going to say, you know, I don't know it went through COVID, but, you know, I know a lot of boats that are tied up because some of the, you know, plants were closed down, or couldn't take shrimp, and I don't know if that had anything to do with -- If there's looking at saying, well, only this much shrimp came in this year, and we need to offset it with the farm-raised, and maybe they look at data like that and say, okay, well, there's not this much domestic shrimp, and so we've got to bring in more of the imported stuff.

MR. MERRIFIELD: I agree with you, and I was going to bring up COVID as well. I don't know what happened in 2013 and 2018, and those dips, and those are kind of interesting to see, and I don't know that I realized those, but it's definitely when you go from 2019 to 2020 to 2021, and now 2022, and so 2019 to 2020, and there was a time, during COVID, where we weren't accepting shrimp. I couldn't take shrimp, because I didn't have any place to sell it, and then that happened from 2019 to 2020, and then, from 2020 to 2021, it just got worse, because we got deluged with Ecuadorian shrimp, and that happened because the Chinese stopped buying Ecuadorian shrimp, and so the U.S. was the savior and went in and picked up all those shrimp, and so they just killed the market, and so that happened in 2020 to 2021, and then it's just gotten -- It's going to be worse.

MR. VOGELSONG: That would be after the COVID, and so, if there were on the numbers on the domestic product being caught here in 2020, or 2019 and 2020, whenever the COVID thing was when they weren't doing it, and so would that be the cause of them wanting to bring more imported shrimp in, because they feel like they didn't have the numbers on the domestic?

MR. MERRIFIELD: I don't know that it was that that was the driver for it, and there is more -- There is other agendas going on at the higher levels of government, and trying to keep trading partners in certain parts of the world, that drive a lot of those kind of decisions that have nothing to do with whether we need the product or not, but it just gets we wanted to be a bigger trading partner with Ecuador, and this was our opportunity to do it, because China backed out on them.

The result is that you're going to see this drop, and it's going to continue, and I'm not sure that the small shrimp are ever going to come back in this country unless we do something about the imports, because we cannot compete in that small shrimp arena.

MR. FLUECH: Unless it's going to be some kind of niche, boutique market, where you're doing value-added, or diversifying the use, but, yes, just as a straight-up commodity with the small shrimp, I don't know how you're going to be able to compete, just on quantity alone, and so I think

looking at alternative markets maybe, but I don't know, and that's -- If you go to the previous conversation, I know something with like the USDA lunch programs is coming up, but the quantities they need is also not sufficient to that too, and so you would have to come up with other ways of pulling a lot of small shrimp, and multiple ways to compile that, for something larger, and so, yes, that's a tough nut to crack.

MR. MERRIFIELD: I think diesel is a good one, and what about price? Okay, and so you have that, kind of, the price, and do you have that?

DR. COLLIER: Yes.

MR. MERRIFIELD: Okay, and so you could look at the decline in price. If the revenue goes down, you can't afford to make a trip. You can't afford to pay your crew, and your crew will quit, and you don't have a crew.

DR. COLLIER: So the -- These two plots are, you know, something to look at here, where we're looking at trip revenue going up, but you're seeing price per pound going down, and so, if I were to pick either one of these, based on the conversation here, it seems like price per pound would be the better evaluator of the fishery, more than the revenue per trip.

MR. MERRIFIELD: That's hard to do, and, I mean, would we do it as an average?

DR. COLLIER: Yes.

MR. MERRIFIELD: Or a weighted average on a pound basis?

DR. COLLIER: So the way that we have price per pound here is it's the information that's being provided to ACCSP, and so they develop a price per pound, and that's what I used. I need to go into the dataset and make sure that the price per pound for heads-off and the price per pound for heads-on are already corrected, because, right now, it's just all put together, but I can go in and look at the data. I was crunching the numbers, to get it to you guys in the timeframe that Allie requested, and so I haven't done all the QA/QC that I need to do, but that's one thing that I do want to look at, is the head-on and head-off price, to make sure it is accurate.

One thing that you had brought up, Mike, was the 2013 and 2018 points, and those match with years that there were closures, and so, obviously, those were cold winters, and cold winters for white shrimp are not good, and so that could be the reason that the landings were down either the year before or the year after. There was a fishery failure in Georgia in 2013.

MR. FLUECH: Which was attributed to blackgill in freshwater, I guess? Okay. That was the 2018 one too.

DR. COLLIER: Okay, and one of the reasons that I'm asking this is so, in the introduction of this, there's going to be essentially an executive summary with symbols that will say, based on price per pound, things are going down, and so it's going to -- It would potentially show that as a negative, and, you know, landings are going to be something that we'll include in there as well, and they're going to be showing that things are going up, and those are two potential evaluators.

Shrimp are a little bit different than most of our species, because they don't have overfishing levels, but what I can do is evaluate it relative to optimum yield. We do have values for optimum yield, and we can see if the fishery is achieving those and making sure that they're not exceeding the MSY values, and so making sure that, based on the definitions that we have on the books, that we're not overfishing, and the other piece of information that I would include in there would be the SEAMAP trawl survey, just looking at a fishery-independent index to make sure that things are going in a -- Just seeing what direction that it's going. We've talked about white shrimp, and are we okay to go to rock shrimp, to change species a little bit? Jason has his hand up. Jason, did you have a comment, or is your hand just still up? We'll come back to him in a second, and I'll get into the rock shrimp data.

Similar to white shrimp, we do have a very brief life history on some rock shrimp, and so you can read about that if you want, and I also developed a fishery-dependent index, based on what's been recorded into ACCSP, and the data for this is pounds per trip, and, obviously, the fishermen are not just catching one pound per trip, and it's scaled to the mean, and so the mean here would be one over this entire time series, and you can see, in the early to late 1990s, the pound per trip was bouncing around the mean, but, over the past decade, you're seeing a pretty substantial increase. It is pretty volatile over the time period, but, for the most part, it has been increasing.

Getting into the data, it mentioned that, in 1996, the rock shrimp fishery exploded, and then it dropped right back down, and you see that value. If you happened to list to Laurilee's discussion of the oral history for the rock shrimp fishery, she explained very well that she definitely believes that that high point occurred, and so that's in there. I also provide, over to the left, just a graph of the last thirty years, without that data point in there, because you really can't see much with that 1996 point in there, and you can see that it was a gradual decline in landings, up to about 2010, and, since then it's been kind of flat, with some good years in the last few years.

MR. VOGELSONG: Yes, and, because, back in the mid-1990s, that was when we had more people rock shrimping than we've ever had, probably ever in those few years there, because, I mean, they were unloaded everywhere, from Fort Pierce to -- We actually had time slots to unload, and it was like you can go out and work for seven or eight days, but you had to be in to unload when that truck was there that was assigned to you, because there were so many boats that were doing it, is why that big boom happened. Then the decrease is when, you know, the Gulf boats didn't come over and didn't work it as much, you know, due to storms, fuel, just more catching shrimp in the Gulf.

MR. MERRIFIELD: I think number of vessels participating is definitely a factor in rock shrimp, because -- Two things affect it, or, well, a lot of things affect it, but the number of vessels, and there are vessels that will do inshore of the Oculina, and there are those that won't do the offshore, and so --

MR. VOGELSONG: Yes, and there's a lot of boats that won't drag the deeper water. You know, the tide is different, and it runs harder, and, you know, it's just more stress on the plate of something that's already stressful enough, and then, when they add the line in, it just -- That really, you know, knocked the handful down that does drag it, and that kind of knocked that in half, because a lot of people --

You know, they don't have the cable to get out, you know, in 500 or 600 foot of water, and maybe they can get out to 300 or 400 foot, and, you know, so the cost of that, to have to add that in, and so, you know, and having the line there does hurt the rock shrimp, especially because that offshore stuff. You know, if you get a couple of storms that pass through early in the year, it just takes all them shrimp that was inshore and pushes them off out there, and, you know, a lot of the guys that drag the inshore -- They just won't go out there and drag the deepwater.

DR. COLLIER: All right, and so, getting back to Figure 3.3, like was just mentioned, you know, you're seeing the decline in the mid-1990s to the mid-2000s, and then both the -- Actually, all three have remained fairly stable, the number of unique trips, the number of unique IDs, and things have been pretty consistent over that time period.

One thing I did that just pops into my brain, remembering back to the FMP, is it was recommended to -- So the rock shrimp fishery off of Florida is a limited-entry rock shrimp fishery. It's limited to a hundred participants, or somewhere around there, and, obviously, you can see that we're nowhere near that number of participants reporting landings, and just not anything to comment on here, but something to maybe think about for the deepwater shrimp group, is, you know, how should we try to address that, and the fishery had recommended a hundred, and we're at maybe less than twenty-five now, and so is there any concern with the number of participants to get the product?

I think I've heard, many times, that the product is basically requested by the fish house, based on their availability to sell it, and so it might not matter on the number of participants if you guys are limited based on how much you can sell.

MR. MERRIFIELD: Rock shrimp is not as much in that boat, because it can't be farm-raised, and so you can generally -- You can generally sell whatever comes across the dock, and, I mean, there was an anomaly here in 1996, and I wasn't there for that, but, I mean, they all talk about it, and it was just an anomaly here. We have had a good year a couple of years ago, and it's fallen off since then, but, generally, you can sell whatever they can catch, because it's a farm-raised shrimp, and it's a product that they can put up in inventory pretty easily, and so that's not really an issue there.

DR. COLLIER: All right. As far as seasonality for rock shrimp, it has kind of bounced around a little bit here and there, but, for the most part, it seems like it's a fall to winter fishery, and, if I'm off on that, just let me know, but that's what I'm seeing here in the data, and then, for the economic trends, we're seeing -- Since the mid to late 1990s. there was a decrease, but, since then, it's been probably fairly flat, with some very good years in there, and then the price per pound, looking at both the inflation-adjusted as well as the annual values, you're seeing a decrease in the price per pound over the past ten years, looking at data from 2012 to 2022.

AP MEMBER: (The question is not audible on the recording.)

DR. COLLIER: It's difficult, because, I mean, it's really bouncy data, and so I start in 2012, and you start -- You end in 2022, and both of them seem to be extremes, and so that's going to drive this line, and it might not be a real line, and so that's just the information that we included. Maybe I -- Maybe it would be better to include a different type of analysis for this.

MR. MERRIFIELD: This will be interesting to watch too, because this is generally driven by the number of players that in the market, and so basically the peelers do the majority of the processing of rock shrimp, and, as the peelers start to go away, the competition goes away, and it used to be the season would start out very high, because they were fighting over who was going to get it, and then, once we get some product that starts flowing in, then the price stabilizes. Then, on the good years, where they are able to put enough inventory up, then the price drops, and so it's -- The number of players are going to impact this, and I see that changing in the future too, and so that will be interesting to see, how that impacts that.

DR. COLLIER: So with the -- I'm assuming not all peelers are dealers, or at least that would be reporting to ACCSP, and is there any way to figure out how many peelers are out there?

MR. MERRIFIELD: There aren't that many. I can -- There's probably less than a half-dozen.

MR. FLUECH: Just go clarify, they're not -- They're separate facilities that will literally just peel the rock shrimp and just -- Okay.

MR. MERRIFIELD: Yes, and some of the bigger processors -- There is one dock that receives and processes, one.

MR. FLUECH: Is that heading in and also completely -- Peeling them too, and so, basically, the meat is ready to go on the market?

MR. MERRIFIELD: Yes, and most of the peelers are just peeling, just for the meat, just for a de-shelled, peeled product. I do it a little bit differently, but most of them are peeling, and it all goes to peelers. That's the majority of the product. That's the product that sells around the country and into Europe.

DR. COLLIER: Is there a threshold in the pounds that you kind of hit, and you're like, all right, it's likely the price is going to start going down, like through the season?

MR. MERRIFIELD: That depends on inventories and sales. I mean, that's really what it boils down to, is market pressures.

DR. COLLIER: All right, and so I probably won't be able to find that.

MR. MERRIFIELD: No. It's very -- It's hard to predict.

DR. COLLIER: Okay. Then, getting into the social trends, we haven't had a closure for the rock shrimp fishery. There's not really a mechanism to have a closure for it, and so that's not going to be -- I probably should just remove that from this, but there are two pieces of information that we would like to include in the fishery for the SAFE report for rock shrimp. One is do an analysis on Laurilee's oral history that she provided in the fall, and I think that would be a great resource to use in the social trends, and then, when you guys talk about the rock shrimp tomorrow, for the fishery performance report, we'll get that analyzed and include that in this as well.

MR. MERRIFIELD: I just don't think there's a lot that we know about the rock shrimp. I mean, there's theories about where the nurseries are, and there's theories about how they show up, and

there's different theories, but we don't really know a lot about them, and we just know where they show up. We do get impacted by releases from Okeechobee through Port St. Lucie, and that has ruined the bottom south of the box, and probably in the box as well, but we wouldn't know that.

DR. COLLIER: So would it be good to try to include Lake Okeechobee water releases in this? I see somebody's head bouncing very hard back there. Laurilee is saying yes.

MR. MERRIFIELD: You would probably see an impact by the amount of release, which this year has been a strong release year, which --

DR. COLLIER: Okay. I will add that into the rock shrimp part, and so, for that, that is the information that we're going to include in the SAFE report, and, obviously, information like I mentioned before, and it's also going to include information for brown shrimp and pink shrimp, very similar to the information that was provided for white shrimp, kind of this exact same setup, and same figures, and everything like that.

I will include diesel price, and that will probably be moved up into the introductory part, just because that's going to be the same for all fisheries. It might -- The price likely varies by season, but I will probably just try to get an annual value, and Mike Travis has indicated that there are some places where I can get that information fairly easily, and so, with that, if there's any more questions for me, and I know Allie is going to have a nice long series of questions for you all in the morning.

This report is up on the website, and you guys can pull it down and look at it at any time, and so, as she's asking questions tomorrow, if you need to pop back into it, and look at some of the information, it's available for you, and we hope to have a finalized version presented to the council in December, and it will include, like I said, all four species, and we're going to post it on our webpage, and we're going to try to have these SAFE reports developed for all fishery management plans, if it doesn't kill me first, but they're getting close.

MR. MERRIFIELD: All right. Thanks, Chip. Okay, and so we're going to adjourn for the day, and then we're going to start up again tomorrow at 8:30 in the morning. Any other comments or questions? Okay. Thank you.

(Whereupon, the meeting recessed on April 24, 2024.)

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APRIL 25, 2024

THURSDAY MORNING SESSION

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The Joint Shrimp and Deepwater Shrimp Advisory Panels of the South Atlantic Fishery Management Council reconvened at the Crowne Plaza, North Charleston, South Carolina, on April 25, 2024, and was called to order by Chairman Mike Merrifield.

MR. MERRIFIELD: Okay, and so we're going to go ahead and get started. We left off with the shrimp SAFE report, and we're going to start today with the performance report discussions and questions that you have for the AP.

MS. IBERLE: All right, and so I -- The attachment in your briefing book is the kind of Word document that has all of these questions on it, and I put these questions in slide format, so that we're not seeing all of the questions all at once, and it kind of breaks it up a little bit better for us.

The purpose of these fishery performance reports, usually with the finfish species, is to be in conjunction with an assessment, and then to help provide management advice, and this is one is a little different, and so we're trying to just create a little bit more of a comprehensive picture of the white and rock shrimp fisheries with this fishery performance report, and so just to get a little bit more information from you all's perspective, so that we have that to fall back on.

With that, I'm going to go ahead and pull up these slides, really quick, and so it's broken into kind of three sections, and so there's going to be social and economic, management, fishing behavior, and then environmental questions, and so we'll kind of just go through each section. I have the Word document up on another screen, and I will be taking notes, and then we'll also have the recording of this meeting that I can pull from, if I feel like we're missing something, and then what we'll do is, after this is completed, I'll be sending it around to the group for edits and to make sure that everything was captured.

All right, and so we're going to start with fishing behavior and catch levels, and so the way that we structured these questions, and so this fishery performance report will be for both white and rock shrimp, and most of these questions are applicable to both species, and there are some that are white-shrimp specific, and so, with those, I will kind of just hone-in on that, but, other than that, we'll just be looking to answer these questions for both fisheries, and so, starting off, have there been effort shifts to or from each fishery, and, if so, please describe, including the timeframe for when these shifts occurred, and then kind of a subset to that question is has there been a change in fishing activity in federal waters, and so outside of three miles offshore, and I will go ahead and start there, and then we can come back to the second question.

MR. MERRIFIELD: So you're asking if there's any shift towards more white shrimp or towards more rock shrimp, and so away from one fishery or to the other?

MS. IBERLE: Yes, and I think this is kind of honing-in on have you noticed that people are fishing more for rock shrimp, or for white shrimp, or are they moving to target other things.

MR. MERRIFIELD: I will let other people on the -- I mean, it's more of a -- It's a fishery of opportunity, and so, if the white shrimp are there, you fish for white shrimp. If the rock shrimp are there, the people that shrimp rock shrimp will shrimp for rock shrimp. They prefer, generally prefer, to do rock shrimp, but I will let -- Jason, do you want to -- Or Nancy, and do you want to answer that question?

MR. VOGELSONG: Yes, and, I mean, it's, you know, really just like what you said. It's the opportunity. Last year, not much rock shrimping went on, due to the fact that, you know, the cost was so high, and, I mean, if you were looking at burning up 2,000 or 3,000 gallons of fuel just go out there on a hunch -- You know, the cost of everything, and the price is so low, and it just kind

of deterred a lot of people from going, and that's why a lot of them mainly focused on white shrimp this year, versus the rock shrimp, but, you know, maybe this year will be different.

I mean, it just really all depends, you know, and some years are good, and some years are bad. Some years you have longer roe shrimp seasons for white shrimp, and some years you don't. I mean, I don't know the direct science behind it, but the shrimp just stay in the rivers, and don't get flushed out. You don't get enough rain, and you don't get enough weather to pull them out. I mean, it's variable as to what we would do to work what we have to work.

MR. MERRIFIELD: Nancy, did you want to have any input to that question, or did you have any questions on what he just said? Okay.

MS. JONES: Concerning rock shrimp, I personally don't have a rock shrimp permit. We target white shrimp year-round. I mean, he's had changes, in not techniques or gear, not really any changes in any of that, and the times have changed. I mean, he was showing, yesterday, on that one chart of the trends and when things were caught, and we have noticed that -- We used to have a lull between like mid-January to almost May, of, you know, not enough to go fishing on, and now it's pretty much going all the way to like March or April before it slacks off like that, and you only get like a month or so, because my husband would use that time to work on the boat, and fix anything that needed to be fixed or repaired, but now he's fishing more, when he can go, and when it's worth going, but, yes, it has changed on the trend of when, that part, but not really the gear, but the timeframes have changed.

MR. VOGELSONG: A lot of that, you know, could be due to weather patterns as well. I mean, if you don't get the northeast winds, if they don't come later in the year, I mean, that would deter the shrimp from moving like they need to move.

MR. FLUECH: What Nancy said is spot-on from what we're hearing and seeing in Georgia. A lot of them are just -- That gap period has shorted, and, again, we kind of mentioned yesterday that the market favors the larger shrimp, and so they really are -- I mean, that spring season has become so important for the operators, and then even in the fall. They've got to wait until a certain size, because, for the price they're getting, and just the capacity of the fish houses to even deal with any of the smaller stuff, they're kind of waiting until they can get to a size that's going to even be somewhat more justifiable for the fuel costs and their crews.

MR. VOGELSONG: Yes, because like, you know, our last season, I mean, the shrimp stayed so small around Mayport, and they never really moved around much, but they -- You know, it's like they didn't seem to grow, or they were growing and moving further out, or a different location, and then another crop was taking its place, but there was an abundance of small shrimp, for sure, but there wasn't no price on it, and so, like he said, it just wasn't worth it to work it.

MR. FLUECH: The one thing I will add, on the caveat about the not changing the behaviors, I think, more and more, dealing with sharks, and so shark depredation, the amount of time they're having to sit and come in, and so if they even have crews that can sew adequately, and just trying to change.

Not that this is consistent, but, I mean, I've heard everybody trying to just extra shaking gear, to shorter tow times, to just trying to figure out something, and what's interesting to is -- Again, it's

anecdotal, but it's one thing to kind of expect it in the summer months, when you expect it, and, because we've had warmer winters, we have had reports of just even interactions with sharks come December, and that's -- You know, again, it's not that that hasn't happened in the past, but, I mean, we've anecdotally heard people say that more, as we've seen warmer winters, and so shark interactions is something that I can't really get through a conversation, most of the time, without hearing that from our shrimpers.

MS. JONES: The other thing that Doug has tried is magnets on the nets, which worked, or it seemed to, but they don't last very long, and they're really expensive to get, and, I mean, it's been a couple of years since he sewed those on, but, yes, we've tried different things to, you know, avoid the sharks, the chafing gear, the adding the magnets, and, you know, he's the one that sews on his boat, and he is constantly -- You know, hours after each day out there sewing nets.

MS. IBERLE: I just have a quick follow-up question, and so, the interactions with the sharks, are you noticing an increase in the number of interactions, and then as well as the seasons in which those shark interactions are happening are also changing.

MS. JONES: Yes.

MS. FLUECH: I was going to say, Nancy -- I will let an actual shrimper say that, but just, I mean, we're hearing it almost non-stop. I mean, again, you have a lot fewer boats out, and you don't have people targeting sharks like you once did. I mean, you've got charter boats that troll, but most of it is catch-and-release, and so a lot of your blacktips, the ones that are going to be your small coastal sharks, and so it's almost -- Again, it's anecdotal, and it's not quantified, but just, I mean, the more we've talked with shrimpers, they're like it's constant, and so --

MS. JONES: We've got video of, you know, when you push the incidental catch over, of the sharks just all over the place, and the big sharks eating the little sharks, and, I mean, they're just all over the place. I mean, god forbid you fall over when you're finished with a drag.

MR. FLUECH: There are some projects going on, and it's more on the -- I know North Carolina Sea Grant has got some shark projects going on with longlines, and there's some efforts in the Gulf right now, but I know Texas Sea Grant is also looking at some potential options with shrimp trawl gear, as far as mitigation. As Nancy mentioned, the various things, from magnets to different webbing, and, I mean, you've got stuff like Predator X, which is like the steel-enforced webbing, but there's tradeoffs on that. Now you're pulling like chain armor through the water, and what does that do for fuel, and so, yes, that's an ongoing issue of trying to find that mousetrap that's going to make sure we're not interfering with all the projected resource needs, but, at the same time, allow these guys not to burn extra fuel and not, you know, tearing holes constant, and so that's an ongoing project.

MR. VOGELSONG: Yes, the sharks are definitely overpopulated, and there is an issue with those inshore, you know, and even offshore you're getting some that are so big that it's just crazy to see the amount of them behind the boat, but, you know, another thing that I have noticed, with the increase of sharks, is the decrease of the whiting, and I don't know if the sharks are targeting the whiting, but we don't catch -- Not even half as much whiting, brown mullet, that we used to back before there was a bunch of sharks around.

MR. MERRIFIELD: We've had -- The landings of whiting have been way down from what they were over previous years, and I think the sharks are one of the issues, and also beach renourishments have also had an impact on that. Are we good with that question?

MS. IBERLE: Yes, I think so.

MR. MERRIFIELD: Let's go on to b. Have there been changes in techniques or gear modifications for targeting either?

MR. VOGELSONG: No, not really. I mean, it's the same basic stuff. I mean, it's pretty much about the same, as far as the gear we use and the way we still operate.

MS. SOLORZANO: Through the changes, we've had to update different TEDs, and so now we use -- There's a constant change in that, and so now a lot of the TEDs that we use cost so much more, because, you know, to eliminate, the jellyballs and things like that that occur, and your bycatch reduction devices, and there's all these things, and some are the same, and some keep having to be updated and remodeled and restructured, to try to find better ways to get your shrimp to the back of the net and shoot out the stuff you don't need, and so, yes, we're always having to spend money to buy new stuff, and try new things, and hope that it works.

MR. WILLIS: That was one of the questions that I reached out some of the shrimpers and asked about this, and the best I could probably -- The shortest answer would be there's like three different sets they used during the year. For the early spring, they use one type of netting. When the white shrimp come out, they change to another setting, and then, as it gets closer toward the winter, they seem to change to a third set, from that situation. When I asked the question of one guy, who has been doing it for like fifty years, he said, in the past, I would use maybe one, or possibly two, and so now it's almost required to use three different sets from that.

MS. SOLORZANO: Are you talking about nets or TEDs or --

MR. MERRIFIELD: Nets.

MS. SOLORZANO: Nets? Well, that's targeting the different species of shrimp you're going for.

MR. FLUECH: But, to that point, I mean, a lot of -- Like we talked about yesterday, they don't even bother switching out for the browns anymore, just because it's not -- This is just feedback that I've gotten in Georgia, that just because the lack of a brownie season, and so a lot of the guys have mentioned, the past several years, they're not even switching their nets out.

Then the TED -- A lot of the guys now, I mean, are using the fixed-angle TEDs, just out of ease, but that's getting out across the board, but that's something we are definitely seeing a lot more, just going to that for -- As far as the ease of getting it in, and not having to worry about getting the angles right.

MS. SOLORZANO: Well, there's been brown shrimp, but we just can't sell them, thanks to the lovely government that we have in office.

MR. GWIN: I didn't know if this was a good time to mention the emerging northern fishery with the beam trawl.

MS. IBERLE: Jason.

MR. VOGELSONG: Yes, I mean, we do use the fixed-angle TEDs, and, I mean, we've switched to those, and that's about the only difference, but, like he said, it's due to the fact that, you know, the angles are always dead on, and so it's less hassle, you know, than what the other ones are.

MS. IBERLE: Should we move on to the next one?

MR. MERRIFIELD: Yes, let's go on to the next one.

MS. IBERLE: All right, and so the next set of questions is still under fishing behavior and catch levels. How much fishing for shrimp, both rock and white shrimp, typically occurs during the night, versus during the day, and has this changed, and is fishing at night area-specific?

MR. VOGELSONG: Rock shrimp is -- It's nighttime for rock shrimp. I mean, we have caught them in the day, a long time ago, but that's now a rare occurrence, but, you know, with white shrimp, I mean, it can be day or night, you know, depending on tide cycles and stuff like that. I mean, there's a mixture of both.

MR. MERRIFIELD: Any other comments on that? Okay.

MS. JONES: I was just going to say, on white shrimp, it's usually -- The majority of the year is daytime, you know, from daylight, right at daylight, to five or so in the afternoon, that you really catch them, and then they slack off, but there are like two months or so of the year, and I'm trying to remember what time of the year, that nighttime is about the only time you can catch it, but, yes, the majority of it is daytime, that you catch the bulk.

MR. MERRIFIELD: Okay. How about length of trip? Do you want the length of unloading to unloading, basically?

MS. IBERLE: Yes.

MR. MERRIFIELD: Okay.

MS. SOLORZANO: Our average trips usually run from twenty to thirty days. You can do fifteen if you're close to home, but, if you're making trip somewhere, and you're on a freezer boat, you're going to make the duration of staying a while, and we do work day and night, and it depends. Typically, you will work more night, because it opens inside of the three miles from June to September, just those couple of months, but we have to work outside the three miles, and we're allowed into one in Florida and Georgia at night, but then, when it rolls around to the fall time of the year, when the nighttime closes, you have to say outside of three miles, but it still can be good, based on moons and tides, and so our guys sometimes work twenty-four hours a day, very often, and so you stop to get those few hours of sleep when you can, or your relief captain, but we try to work as much as possible. We have to, just to try to make ends meet.

MS. IBERLE: That's for which species?

MS. SOLORZANO: White shrimp. Rock shrimp are always at night.

MR. VOGELSONG: Yes, and that's a lot of work for old people.

MS. SOLORZANO: It is, but you're not old yet, Jason. You're talking to your mother here.

MR. VOGELSONG: But you've got to do this job and then go home and entertain nine kids, and it's hard.

MS. SOLORZANO: Very hard.

MR. FLUECH: Actually, Jason brings up a great point though, with the graying of the fleet. I mean, what you just described, that twenty-four hours -- I mean, again, I primarily focus on Georgia, but, for a lot of the guys who have been in it, they're like we just can't physically do those trips anymore, and so we do -- You know, we have the slabs, that are going to be the multiple trips, but then we have that day-ice fill, but, as a lot of them have said, just, as they've gotten older, and they've got families, and, I mean, it's like we've got soccer matches to go to, and just that has changed kind of the social dynamic of the industry too, because they -- Physically though, they're like we can't do those long trips anymore, and so we've definitely seen those day-trippers, versus the ones that are the multiple days that was described.

MS. JONES: Ours is a day boat, and he unloads twice a week, and he's an ice boat, but, yes, when he's going, he unloads usually like a Monday and a Friday, and then, you know, he's constantly unloading.

MR. MERRIFIELD: Okay. Are there obstacles that hinder your ability to take a trip? If so, what are they, and how have they changed in the last five to ten years? There's lots of obstacles here. So what prevents you from going out?

MS. JONES: Crew.

MR. VOGELSONG: Crew and fuel. That is pretty much your top two enemies, you know, because the crews at this point -- I mean, if the prices are up, and everything is good, and everybody is making money, they want to work, but, you know, the situation now is they kind of know they ain't going to get paid much, and so the least work that they can do, the better off they feel like they are.

MS. JONES: The other one is weather.

MR. VOGELSONG: Yes, and weather would be a third, but, you know, to decide whether I want to run to Key West, or North Carolina, or anything like that, and, I mean, my main concern is going to be on the fuel getting there and the fuel getting back, and, you know, the chance that I'm going to take of burning all that up to strike out, you know, and so that's a lot to do with it, too.

MR. WILLIS: A data point that you may want to consider, back to what he said in -- They went back and looked at, and this was in North Carolina, which I would assume this is similar, but we

have 258 different shrimpers out shrimping in the state, and what the shocking statistic was thirty-eight were forty years or younger, thirty-eight out of 258, and just understand that it seems like every -- If you go back and look back to the 1960s, and, about every twenty years, you lose about 75 percent.

MR. VOGELSONG: Because young people don't want to work, and, you know, I've had some young kids on here that -- They get out here, and, on day-two, they want to go home, and they tell you that, no, this is slave labor, and I ain't doing this shit, but they talk this big game when they're on the hill, but they come out here, and they can't hack it. Then, you know, all of your older guys that did it -- Like you said, you get old, and you just can't do the things that you once could do.

MR. WILLIS: This would be a good project for that Julia girl from yesterday of looking at, because we may be sitting here in twenty-five years and there is nobody shrimping. I mean, that's a serious threat, strategically, from that, and so I know it's different than what you're asking here, but, when I look at things like this strategically, that's a major threat to the whole industry.

MS. SOLORZANO: I think, right now, one of the biggest obstacles that we have for being able to take a trip is the economy. If you can't sell the shrimp, because imports have flooded the market, and we have a crappy government running everything that can't control a damn thing, you can't go fishing. If you can't sell your product, you can't go, no matter how many shrimp are there, and so you're going to have these numbers that come in that say, you know, we didn't -- The production was down, and the production wasn't down because it wasn't there. The production was down because the buyers couldn't buy it, and so we're in -- The economy is one of the big factors in the last five years, or four years, particularly. Since COVID came around, it's -- You can't move the product the way that you once could, and hopefully that changes soon.

MR. MERRIFIELD: From a dock, or buyer, standpoint, I can't buy and put stuff in my freezer and then tomorrow it has lost value, and that has happened to me so many times that you're gun-shy, and so you're like I'm not buying unless I know where it's going and what I'm doing with it. I can't. I can't afford to, and so, yes, actually the market is a driver here, because, if there's no market, you can't make a trip.

MR. FLUECH: That's a comment like the brownies. We catch them, but, I mean, if you're getting forty-cents a pound, it's not economically worth it, and so, unless you're peddling them, and so the market factors -- Just everything else we're talking, between labor and fuel, I mean, they're not -- It's all compounding, and that's what they're facing, and it's just -- It's not just -- Even if you address one issue, you've got twenty others, and so it's a compounding factor.

The workforce, and so there are -- There's the Young Fishermen Development Act, and there are efforts. I know, right now, like South Carolina Sea Grant, this week and last week, they're doing a pilot apprenticeship program, up in McClellanville, and then we're also working with South Carolina Sea Grant, and North Carolina, on a regional apprenticeship program, and that's great, but if you've got these other fifteen factors that are working on -- I mean, that's what we're running up against.

I mean, training is going to be an element, and, I mean, that is one thing that we've also heard from people that are still able, and we can't just be a good dragger, and you've got to be a business person, and you have to -- Like it or hate it, you've got to understand management, and you've got

all these things, because it's become so complicated, but you're right that we can do training, but, if you have all these other market factors that are working against it, you're going to hit a wall and so these are all interrelated.

MR. MERRIFIELD: One more factor that I will add, that's pretty -- It's more specific to Cape Canaveral, and that is the space industry, because we have closures that prevent you from actually transiting certain areas, and the amount of -- The number of rockets that are going up these days is incredible, and every -- I am telling you that, every day, I get a notice of a closure for a launch, what the trajectory is going to be, what the area is, and the only --

The good thing is that they have not enforced on the fishing industry at this point, because it's a $250,000 fine or six months in jail if you are in a closed area, but, in talking to the space industry, they have kind of overlooked some of the fishing guys, because they call it a one-in-a-million chance, and so they say it's a one-in-a-million chance that something is going to fall on their head, and so they allow you -- They kind of overlook the fishing guys, but it's still -- Nothing has been changed, and there's no waivers, and there is no -- There is nothing in place that allows a fisherman to go out into those areas, and it's affecting a lot of the fisheries, and not just the shrimpers, but the Spanish mackerel guys, the kingfish guys, and a lot of them don't even want to deal with our area anymore because of the -- Because of these restrictions, and so that's -- You can add that in there as well. Okay. Anything else on that? Okay.

MS. IBERLE: I think we've got that, and so that will bring us to our next section, or, well, before we move on from that, I will note that Laurilee has definitely brought up the space problem to the council. Council staff has tried to gather information regarding that, and we're still trying, but we have not gotten a lot of response, where it comes to the space industry.

MS. THOMPSON: (The comment is not audible on the recording.)

MR. MERRIFIELD: Yes, and we've got a lot of gear damage, which I sent pictures into the council on, and what was the other thing that I was going to bring up? I don't remember, and it will come to me.

MS. HOWINGTON: In regard to space, the Habitat and Ecosystem Advisory Panel actually received a presentation from -- I can't remember his name, but he is a representative of SpaceX.

DR. COLLIER: Dale Ketchum.

MS. HOWINGTON: Dale Ketchum. There you go, and we asked a lot of questions about what is out in the ocean, and where are they dropping these things, and what kind of chemicals and materials is being used, and it is on our radar, and, the moment that we get that information that the council has requested -- It's already on the habitat workplan, and we're just waiting for that FOIA information to come back, and then we're going to start discussing what, if anything, we can get done, and so it's 100 percent on our radar.

MR. MERRIFIELD: The other thing that I was going to mention is that they need to be bringing -- I don't know if it's the council staff, or NOAA, or NMFS, or somebody needs to be involved in the -- They need to be included in the meetings and things where they do these environmental impact review and things like that, because we just got one, that I commented on, and I think I sent

you a copy of it, for the starship -- The super heavy SpaceX starship that they're now going to build another pad out on the -- That's going to be -- That's going to be a huge -- This is a big rocket.

MS. HOWINGTON: The council actually did comment on that as well.

MR. MERRIFIELD: Good. Perfect. Thank you.

MS. IBERLE: Okay. I think that will bring us to our next section, which is the social and economic influences. We've kind of hit on this a little bit, in talking about the fishing behaviors and catch, but the first question is how has the dockside retail price for each species changed in the last five to ten years, and, obviously, we've talked a lot about that, but I just want to make sure that I get it recorded, and then have price changed by size within this timeframe?

MR. MERRIFIELD: I think we've pretty much discussed this, but if you want to add to what we've already talked about, which is the fact that the larger shrimp -- While they haven't maintained their price, at least they have a price. The smaller shrimp have definitely lost value, a tremendous amount of value, or if they're even marketable at this point.

MR. FLUECH: Some of our fish houses are trying to get creative, and some of them will -- I'm going back to like the brownies, and I guess the small whites too, but sometimes they will freeze them in blocks, sell them off as a bait, just as a means -- But the problem too is that we've lost -- As we've lost processors, or the fish houses, a lot of our boats are beholden to the -- I mean, there's not a lot of options, and so it's kind of you come to the dock, and, you know, you're not -- You're kind of forced to be a price taker, and not a price maker, and so it's just -- At the end of the day, it's like, hey, I can offer you eighty-cents a pound, and it's just gotten harder and harder for them to even be able to look around, because even where they can -- Unless they're pedaling their own, or doing their own direct marketing, it's just getting hard, because there's fewer options to choose from, and so I think that's really impacted the boats being able to operate, too.

MR. MERRIFIELD: Rock shrimp is a little bit different. Rock shrimp kind of -- It's not a farm-able shrimp, and so it's not got that competition from an imported product, except for Mexico, but the price on that -- A lot of times, it just basically -- It also depends on the market, and so, if there's inventory in stock, in the processor's inventory, and they have a lot of rock shrimp, then the price will start out low. If there's no inventory, it will start out high, but it comes down to -- It will come down, and probably go down over the whole course of the year, unless there's just not a -- If it's not a strong rock shrimp season, which then it will maintain a price, but, comparatively, over the last five years, it's probably -- It goes up and down, and it's a hard one to gauge.

A lot of the small shrimp go to peelers to be peeled, as those little small -- You know, like salad shrimp and things like that, and the foreign markets have pretty much -- They can do that so cheap that you cannot possibly compete with them.

MR. FLUECH: Even in recent years in the Gulf, with hurricanes, they've even lost a lot of their capacity to process some of the smaller shrimp, which has even further impacted over here, you know, for some of the ones who would send their shrimp over to the Gulf, and so that has just further restricted their ability to sell that.

MS. SHIRLEY: We have a dock that we sell from, at our little dock where we unload, and we've had to close down and cut back our days, from our retail-wholesale stuff, because we don't have buyers. Like people don't come out and buy like they did, and so, where we used to be open five to six days a week, depending on the time of the year, we're open three-and-a-half days a week, and so it's dramatically dropped in being able to sell, and the prices are inexpensive. It's cheaper to buy seafood than it is to buy beef and chicken anymore, but cheap imports flood the market.

MR. VOGELSONG: Well, not only that, but the economy. I mean, the people are struggling to live day-to-day anyway, and there are more people in the household having to go to work to try to get this thing balanced, that it used to be, and so, you know, the economy plays a big role in all that, and a lot of people don't go to restaurants anymore. You know, what little bit we retail and stuff, the same thing.

Our sales are cut in half, due to that fact, and, you know, the people are having to stretch their money and put it in different places, where I guess they had more availability, but, again, I guess that's out of our control, you know, and that's something that is higher up the ladder, you know, which goes back to we need the right people lobbying for us, you know, to try to cut back on the imports, to whoever talks to the trade commission people, to have, you know, that cutback, or have a price change on it, you know, to bring our prices up, but, still, you know, your end consumer is just not -- You know, they go out twice a month, versus, you know, when they were making money, going out six or seven times a month.

MS. JONES: I work at a retail market in Mayport, and we sell a lot of those, the small shrimp, as bait. People come in and buy it to go fishing, because there is the -- Shoot. The boat landing is right there, and they stop by there and get the shrimp, because it's cheaper than buying bait from the bait shop, and we sell a lot of shrimp that way, and we've noticed that, since we've started taking food stamps, we sell a lot, but, I mean, you can't -- I mean, it's hard to get a food stamp license, or whatever, to use the -- You can't pedal and take food stamps. It's hard to do.

I mean, we've been selling shrimp so cheap that, you know, we're ten pounds for twenty-five dollars, and, I mean, that's ridiculous, but, I mean, we've been selling a lot of those, and then, you know, even our jumbos, we're selling for five-dollars, and that's ridiculous, and it's -- Just the prices on the retail side is so low, and, you know, if they've got food stamps, we're selling a lot of them. I mean, don't get me wrong, and we are selling them to regular people, with cash and charge or whatever, but we just have noticed a lot of increase on the EBT.

MR. MERRIFIELD: I think a factor in that too is that, especially with the EBT sales, and EBT sales are down in the markets as well, because we're a big EBT -- We take in a lot of EBT dollars, but what has happened over time is, because the supermarket prices have increased dramatically -- When you go to the store, and you buy your normal set of groceries, a lot of times the EBT dollars are just swallowed up, and so they don't have the extra dollars to go to a secondary store to purchase items like seafood, and so EBT dollars are being swallowed up by the major supermarkets now, and so you don't have the carryover.

MS. IBERLE: I feel like we've hit on a lot of stuff in Question b, and so how has demand changed, and we've kind of talked a lot about that, and how has purchasing behavior changed, and I did want to touch on how has the amount of shrimp kept in storage changed, and I know you've talked

a little bit about shrimp in storage losing value, but I wanted to make sure that I captured any other comments on shrimp kept in storage.

MR. MERRIFIELD: Right after COVID, we had -- We went through a time period there where the processors couldn't even accept shrimp, because the freezers were full, and so there was a lot of boats that were stuck at the dock that had loads on their boat that couldn't unload, because there was no place to go with it.

A lot of that had to do with the fact that we had so much Ecuadorian shrimp come into the country that there was just no place to store shrimp, and so it actually halted the whole -- It backed up the whole chain, the whole food chain, and so, from a storage standpoint, we're seeing that there's just a lot of inventory of mostly imported shrimp at this point.

MS. SOLORZANO: We have IQF freezer boats, and we keep a very good top-quality shrimp in those, and we don't add chemicals and things to them, and so, once they go to the processor, then they do whatever they choose to do to them which will extend the life, but, as far as the way that we do it, and the keeping them onboard, there's not a lot of change for the normal thirty-day trip, as far as the vessel goes.

Once they go into cold storage, then, you know, it becomes the processor's issue, or the buyer's issue, and so I think they have much more input to put into that, and, if they don't have the sales for them now -- It used to be that Gerald would buy the shrimp, or JBS or whoever was buying, Beacon, whoever was buying, Mike, and they knew they had a sale for those shrimp, or at least inevitably in the timeframe they could move them, and they could, you know, head them, process them, put them away, and keep them for a length of time.

As he spoke, when COVID came, everything was -- They couldn't move them, but a lot of those plants actually closed down, because they couldn't bring workers in. A lot of the northeastern plants, your northern plants, those states were completely closed, and people couldn't even go out to go to work, or go to a restaurant or anything else, and so the bulk of what was being shipped in piled up, and now, from what I understand, and I don't know all this to have been 100 percent certain, but I think the government just gave a little bit of money to some processors to buy some of those imports, to take the strain off of the domestic market.

However, they're still just dumping in imports, and we haven't seen them coming up to us now, and all that money went into buying these imports, but there's no increase to us to buy domestic product. American government does not want America to produce anything. They want us totally at the mercy of countries that don't like us, and, until somebody steps up and stops that, there is your problem.

MR. MERRIFIELD: Okay. All right. Let's go on to the next one. So we've talked about distribution chain.

MS. IBERLE: This one kind of talks about kind of the end of the line, and so we talked a little bit about, you know, where it's going when it leaves the boat, and so have you noticed any changes in the distribution chain for domestic shrimp, or changes to who is involved in getting those shrimp to the final buyers, and any changes in costs associated with that?

MR. WILLIS: That was a question, when I met with a group of them, and it's interesting that the older folks -- They're still doing it the same way. Of the young guys, I would say half of them are now doing their own commercial marketing and sales, whether they have roadside stands or they have a very smart wife, or spouse, that's out communicating to folks on distribution lists, or churches, through memberships and things like that, and that's how probably a lot more are doing it, and that's the only way they can do it, because getting a dollar-and-a-quarter for twenty to twenty-fives was like ridiculous. At least they could get, you know, $3.50, if they went that way, and, if they did the heads off, they're probably at five or six bucks, for that situation, and so that's kind of what I've heard.

MS. SOLORZANO: My family is very large, clearly, but my older son put in a freezer, at his place, and bought trucks, and my grandson started internet sales, and was out pedaling during COVID, and delivering to people's doors, and dropping the stuff off, and, I mean, he created this little business, that he did well at, but he just wasn't quite old enough to manage the money as good as he should have, but he did -- You know, he was like, okay, I've got money, and I'm going on vacation, and I was like, no, but he did a fabulous job of reaching out.

Then like Jason and his wife, and they do like a route, where they will go out and sell, and so we have had to step outside of the normal realm of the way that we do things, in order to be able to -- I'm old school, and I sit there, and I hate the internet, and do you see me with a laptop? No. My phone, it's like how do you work this thing, and, you know, it's like I don't do that stuff, but my grandson will come in and say, Grandma, let me fix your Facebook page, or let me do this for you, because I don't care about any of that stuff.

He does know how to do that, and the young people have a whole different way of doing things, with that little device in their hand, that I don't know diddly squat about, and so their way is -- I still have a little stand on the side of the road, by the shrimp boat, a little building on the side of the road with the shrimp boats, the old way, but, when you say some of the costs that are affecting this, trucking.

Trucking costs a fortune. Call in a truck to get a load delivered, and what you used to pay for the truck to run it from here to Texas or, you know, North Carolina or wherever, is a lot more than it used to be. Everything -- You know, when you say -- Insurance, and everything is just costing so much more. We just had -- Jody and I just had a discussion about our insurance costs and the horrible time of the year that it comes due every year to us, in April, or March.

MR. GEER: Just to add to that, with our little tiny fishery in Virginia that we have -- I mean, we're not dealing with 20,000 pounds at a time, but we've got some of our smartest fishermen, in what they're doing, and they are the youngest, and they're marketing on Facebook, where, when they leave the dock in the morning, they say, hey, we're leaving, and then, during the day, he's sending updates of lots of catch, and we'll be in at 4:00, and there's fifty people lined up to buy the shrimp right off the dock, and he's getting double the price than what he gets from the dealer.

Now, you can't do that with 20,000 pounds, but, you know, 3,000 or 4,000 pounds, and he's able to do that, and he's the smart one. A lot of the guys are just coming back and going into the dealer and selling it that way, but we're seeing that a lot too, and I thought it was ingenious. I mean, he's got a following of about 5,000 people in Virginia Beach, and so you know exactly how much he's

catching, what size they are, and he bags them up into five-pound bags and just pedals them right off the dock.

MS. SOLORZANO: I was just in Virginia Beach in November, and I was talking to my son, who was working in North Carolina, and we were at the hotel visiting my grandchildren, and I said there are shrimp boats out here, and he said, yes, but I can't cross this line to go into there, and he told me what they were doing, and I was like -- But, you know, we're moving a truckload that's 40,000 pounds, and so you can't just sit there on 40,000 pounds, you know, and wait to pedal 40,000 pounds, because nobody is going to come and do that, but, yes, I loved -- I went down to the dock, the little marina down there, where they would come in, and I watched those guys, and, I mean, that was lined up people buying those shrimp, and I said, this is the cutest little operation, and can I just expand this? It's making their money, and it was good to see those young people doing that.

MR. VOGELSONG: Yes, because a lot of the social platform -- You know, you get more word out, and more people share stuff, and stuff like that, but it's like you said. When you've got 40,000 pounds, it's kind of hard to be able to target 40,000 individuals to sell them one pound of shrimp, and so, you know, that just doesn't happen, but outreach is most definitely the best thing for sales, and the younger people do have that ability, because they're always on their damn phones.

You know, as far as on the high-end side, you know, maybe there needs to be more outreach to, you know, chain restaurants and stuff, to actually get that domestic product in there, and something needs to be -- You know, I guess, on the FDA part, as far as the shrimp that have antibiotics and stuff -- Because I remember talking to Sherry a while back in Cape Canaveral, and I was like, man, you all must be good, selling to all these restaurants up and down the inlet right here, and not one of the damn restaurants buy any of the shrimp from them. They sell imports, and then you have your consumer that comes in, that sits at the table, and sees the boats coming in, but that's not what they're getting, you know, and it's like false advertising.

You know, you have these younger people working these restaurants, and they're just crossing over quality, and, you know, if they can buy some shrimp for $3.00 a pound, with some cheap-ass farm-raised stuff, that's shot up full of stuff with no taste, versus something that's costing them $4.50 a pound, it's -- They're looking more at their bottom line, which, in this type of economy, I understand that. I get that, but it's -- You know, getting our stuff out on a higher end, but, just your average individual on retail, it's kind of hard to do. You have to move mass quantities of it, and targeting some of these bigger chain places that, you know, sell state to state to state, and trying to get them onboard.

MR. MERRIFIELD: There's been -- There's been a shift for years going on, where the chains are just going with the imported shrimp, because of the percentage of food cost on the plate has become such an issue, and so we can't fit into their models. Most of the -- I have lost most of the restaurants, except for the higher-end restaurants that really, you know, care about what they're serving, and they have a clientele that knows that they care about what they're serving, and so what we're seeing is that we're moving more towards boutique-type -- I think not just in shrimp, but I think across-the-board.

I mean, fish is the same. All finfish is the same way. With the ACLs where they are, you're just not going to catch any kind of volume, and so who is going to get -- The prices they're paying for

grouper now, up and down the east coast, is crazy. It's crazy from what it was three, four, five years ago. It's more than double, and so it's all just shrinking down to being boutique, and these volume sales are being -- We're just being replaced by imports, because of the economy, the economy of scale, the economy of what -- You know, what people are interested in.

I mean, I had a restaurant that came to me and said, look, I had to move to a farm-raised product, and he said, and people don't know the difference anyway. You know, you throw a bunch of seasoning on it, and serve it with some pasta, and -- No, they don't know the difference, but we also have a for-profit healthcare system, and so we don't care. If you're concerned about the health of people, you're more concerned about the quality of the product that you're serving, but we're not at that point.

MR. FLUECH: You also have to look at supply and demand, and so, I mean, I guess my thought on that is, instead of focusing on the chains -- Because the chains -- I mean, they're going to have to be looking at consistency on a large scale, and we don't produce enough. I mean, that's the other thing too, is we're not going to -- You know, we, but I don't think that boutique is necessarily a bad thing.

It's understanding where are those regional markets, and, you know, looking at trying to think that it's still a commodity, when we represent such a small percentage, and I think that there is an advantage. We know that there's audiences, and I do think that's where the more refined -- You know, you mentioned the younger generations, but, I mean, between the concerns with the environmental impact, the social impact, and that is where, you know, I think the advantage is our industry here. I think, for the people who do a really good job of storytelling, and it's not going to necessarily be selling it to the Walmart's, and those just broad chains, but I think there are more and more interest.

Also, with COVID -- You know, think about before COVID, and, I mean, 75 to 80 percent of seafood that Americans ate were at restaurants. I mean, that kind of turned on its head, which it's still a big factor of it, but lack of cooking. A lot of people don't know how to cook seafood, and so you're starting to see more value-added, ready-to-eat meals, especially for our younger generations, in like their twenties, and I know there's been different products, but, yes, it's consistency.

I do think trying to find these niche markets, where you guys can get better value for it, because it's not going to be across-the-board, and I think that's where -- It's just trying to find that right segment, and I think there are local examples of that. I mean, in North Carolina, the different associations are really trying to hone-in on that and make connections between the harvesters, and the distributors, so that they can better account for where their product is going, and really trying to get that feedback loop, and so there's small examples, but how do you do it on the -- Like, Laurilee, you mentioned that larger-scale, and how do you get the larger amounts, so that they're also getting better value, and I think that's where there are still needs.

MS. SOLORZANO: Well, you could also have -- Our government could step in and contract out, make bigger contracts available to these large producers for domestic shrimp only, and say that a percentage of these -- We're going to offer you these contracts, the government, for, you know, things that they're using, for military ships and whatever.

MR. FLUECH: Yes, and the USDA is starting to. They are increasingly buying, and I guess part of one of the things that we're hearing is the quantities they need, for like schools, is even larger than what most of our individual operators -- So I think that's a big question, is can they find new methods of -- Because, to me, 40,000 pounds is a lot, but, for what they're talking, it's in the millions, and so can they pull together -- Especially in the South Atlantic, a lot of our operators are more smaller-scale.

That's where I know there's a lot of discussion with USDA, going, are there ways to add some flexibility in those buying programs, because, unless you're one of like the larger processors -- I mean, I know that eliminates Georgia right off the bat. We just don't have those large-scale producers that you have in the Gulf, and so I think that's something there is interest in, and there's a lot of push to say USDA, for our school programs, for the military, for various institutions, can we look at buying more U.S. seafood, and so I don't know if it's going to happen tomorrow, but I'm glad to see that at least those conversations are happening.

MS. SOLORZANO: States could step in and do the same as well, in states like Louisiana, Florida, North Carolina, places that produce. Our boats alone hold over two semi-truckloads of shrimp on the boat, per trip, and it's not uncommon for us to fill those boats up. We come in, and I can speak for, you know, seven or eight boats just that are right at our local dock in Mayport, not including the others, that will bring in those volumes of shrimp. Gerald gets tons of shrimp, and Beacon as well, and you guys get it during rock shrimp season, and so there is more shrimp to be had, but we just can't go catch the little brownies and do this.

The South Atlantic -- A lot of those Gulf boats, they come work the South Atlantic, and then they take them back, and that's not Gulf-caught shrimp. A bulk of shrimp are coming from the South Atlantic, that we're not necessarily getting credit for, because they take them back over there, and so seldom do they bring anything from over there to us, because they're going to unload at their home, and then they're going to make that long trip over and hang out for a while, because we don't have a lot of docks to bring in these extra boats and unload them.

They may be gone sixty days before they go back to the Gulf, and so I think we have a lot more shrimp on the east coast, and availability to get them, but it's just these places need to -- The government can help, by telling, you know, okay, the only time that imports can fill in -- Let's say 20 percent, and that's probably a large number, has to be domestic shrimp.

It can be supplied in the United States. They took away a lot of the boats, but we can do it, if given the opportunity to do it, and, if it can't be met, and only if it can't be met, can you bring that percentage in, and it will cause the price to go up, and it will -- It just would work better for everyone if the government stepped in and did their part of the job to help American workers all the way across the board, fishing, farming, production of everything.

MR. VOGELSONG: We need better management, is what we need.

MR. MERRIFIELD: Okay. I think we've kind of hit c, and probably d, and e was what communities are dependent on these fisheries, and, obviously, it's the fishing communities. I mean, the fishing communities are being hit hard.

MR. FLUECH: Are we also talking -- I mean, from a non-geographic aspect, but tourism, and, I mean, that's an opportunity. I think that's an opportunity that could be improved, because I think that, again, more people want that authentic, and they want the stories, and they want that, and there are local efforts to try to push that, but I do think that's an opportunity too, to really -- From a tourism aspect of trying to work better with our industry at promoting what they have and an awareness of where they can get it, but you are starting to see that happening, but just maybe not at a consistent level.

MR. MERRIFIELD: There needs to be a differentiation between the domestic product and all the imported product. I went to a restaurant one time, and I looked at the menu, and on the cover of their menu was my dock, but they did not serve a single -- It was all farm-raised, foreign shrimp, and so that is misleading. All the restaurants that are within a stone's throw of where my dock is -- None of them serve domestic product, but everybody looks out the window at the shrimp boats unloading, and it draws people to their restaurant to see it, but they're not eating it, and there needs to be a differentiation made, and there needs to be some accountable from the restaurants, as to they need to be telling you what they're feeding you.

MS. SOLORZANO: We have a restaurant that we used to sell to, and we don't have a restaurant, but we used to sell to a restaurant that is very near our location, and the same thing. People always knew that we're getting Ms. Marilyn's shrimp, right, and they were, for the longest time, and then, you know, it changed. They started being able to buy imports for cheaper, already cleaned, peeled, de-veined, the whole process, and handed to them at the back door, and so they switched over.

People still -- I would have people call me and say what happened to your shrimp, and I got sick eating your shrimp, and I'm like it's not my shrimp any longer, you know, but they still think that they're buying shrimp, because they drive right by our docks, with the shrimp boats, and there are a couple of restaurants down the road, and they don't sell the same shrimp that they used to sell.

MR. MERRIFIELD: Okay. Are we ready to move on?

MS. IBERLE: The next question is white-shrimp specific, and so is there a demand in the size or disposition and so head-on or tails of white shrimp? I know we've discussed a lot on the size of shrimp, and the demand for the size and how that has changed, but I wanted to get some feedback on whether or not the disposition has changed, or the demand for disposition.

MR. MERRIFIELD: For head-on versus tails?

MS. IBERLE: Yes.

MR. MERRIFIELD: The biggest difference there is that, if they're heading them on the boat, then I don't have to have labor to head them on land, and the labor on land is done -- In the State of Florida, that particularly I can speak to, has gone -- The labor has gone up tremendously since COVID and since we have new legislation that is increasing our minimum wage.

MS. SOLORZANO: As far as having the boats themselves, as far as head-on and tails goes, we're not getting paid -- When you take the head off, and you differentiate the price, and you value it, it costs -- It's extra time for our crew to head it, and they don't pay us enough, when we get to the dock, for the tails, and so the tail price needs to be raised to, you know, give some incentive to the

crew, and the captains, to do this work, because, when they come in and say, well, okay, we're going to get twenty-five cents more a pound to head them, versus, you know, what we're getting, but, when you take the head off, you may have even, at times, lost money, and, if you made any, it wasn't much, and so I think that, you know, the boats need to be paid a little more, if they're going to bring in tails, than what we're offered.

It does save the fish house the money from having to have the shrimp headed, and that's basically for white shrimp that we're talking about. The demand, head-on shrimp are probably used more by foreigners than Americans. Americans tend to want the heads off when they go in to buy them.

MS. SHIRLEY: Can I just add to that you have a better product when they're headed on the boat, and the outcome is so much better, but we don't -- There's just not enough compensation for the fishermen.

MR. MERRIFIELD: It depends on how much they're catching at one time, too. If they're catching a lot, you can't possibly get them headed and put away in enough time for them to maintain the quality. Communities that are dependent on these fisheries, we talked about that's mostly the fishing communities, primarily, and I think Bryan talked about the tourism. There are foodies, and there's a lot of foodies out there, and they are -- They drive a lot of the sales, but, I mean, as far as really social and economic impact, it's going to be the fishing communities.

MS. SOLORZANO: You also have the people that aren't getting hired to do the maintenance and repairs and upkeep on the boats, that aren't necessarily fishing people, but they do welding and freezer work and engine work and mechanics and the grocery stores, the whole series of things that come when the boats go to work, and so that is affected.

MR. FLUECH: The whole support infrastructure, and, I mean, that's one thing that we have -- I mean, we used to have whole businesses for that. As the industry has whittled down, I mean, a lot of -- It's not uncommon to hear that, well, now I work on yachts, because there's consistency, and so, yes, and that's why a lot of the fishermen are kind of -- I would say MacGyver has nothing on a fisherman, because they're forced to learn how to do these things, and then the problem is, also, when it comes to the parts, it's getting harder and harder for them to find --

You know, it's not like there's Clinchmart, you know, that you can just run out and buy -- I mean, a lot of the stuff you're having to fabricate, and find pieces from other boats, and so that whole infrastructure is -- The net makers, and -- Then it's funny that you just mentioned even about the groceries. I mean, just whole communities of businesses used to center around the fishing industry, the whole aspect, and so, I mean, they're having to rely on various components outside of their own communities.

MS. SOLORZANO: My husband, this off-season, instead of us paying people to help paint the boat, and Jason, my son, painted his whole boat himself, in the two months that we were off, you know, to stay busy, to avoid the labor, and those jobs would have typically -- They would have stayed home with the families, and done things, and those jobs would have been, you know, paid out to others to help, and you can't afford to that. You've got to do it yourself.

Thankfully, most of mine have the ability to -- My husband can -- He's from Costa Rica, and I can say that you can engineer anything, and it's just like I'm baffled sometimes on where did you come

up with that, and Jason is the same way, and he can probably take his -- Well, I know he can take it apart and put it back together again, if he has to.

MR. VOGELSONG: We call that a jack of all trades and master of none.

MR. MERRIFIELD: Okay. Infrastructure, we've kind of talked about infrastructure here. It's disappearing, and it's going to continue, at the rate we're going.

MS. IBERLE: I feel like we've kind of touched on both of these questions in the previous slide. Any additional thoughts on changing infrastructure and then labor costs?

MR. MERRIFIELD: I think we've pretty much hit it. Did you have a comment?

MR. WILLIS: The only thing I would add to that is, of the new guys who are trying to get in it, they're having trouble finding locations to put their boat. The reason is because you had places before -- Like there's specifically -- One place I know is Harkers Island, and, twenty years ago, there was probably forty shrimp trawlers in the place, and, today, there is two shrimp trawlers, and there's all these yachts and boats, with boat lifts and all that in there, and you can't blame the owner for transitioning, because the shrimpers were going out of business, or couldn't pay the dock fees from it, and so they're having -- You know, I actually have a -- Fortunately, I have spot, and I have a boat basin, and I've got two shrimp boats that I knew growing up.

One, their son came and said can you put it here, and I said you can stay here for six months, and he's been there for three years from it, and so the issue is that that's a major issue for them, especially for the younger guys wanting to do it, unless you take an older person who is moving out, perhaps the son, or grandson, comes in, and they're actually losing the spot. I've seen that with several folks as well, and that has happened several times down near Cedar Island from that, and so that's an issue from a standpoint of the infrastructure perspective on that.

MS. SOLORZANO: There is no place left in the Keys. The Keys used to be -- When I grew up, I went through with my father, and, well, lots of years ago, many, many decades ago, and it was full of shrimp, and shrimp boats would be just lined up, in Key West, and, through the years, I watched them move us. They moved us from downtown, around to the base, around to Stock Island, and now they've sold everything, and Laurilee knows, and she was there. They've sold it all, and there's not one dock left.

There was one, the Lady -- They just got rid of it, and there's no place in the Florida Keys for a shrimp boat to go any longer. It's gone. We know what happened with Fort Myers, with the hurricane and the storm, and so Tampa is the spot. Well, most of the places in Tampa -- It just goes in a truck, and it trucks to cold storage, and they have no facility to actually keep anything there, and so there's just very few places in Florida left that you can pull up to the dock and call in and unload, and they don't take new boats anymore. I mean, if you're not in, you're not in.

MR. FLUECH: That's a -- Thank you for saying that, and just, from the resiliency of the industry, it's -- I mean, fishermen are adaptable, and, I mean, that's the whole part of being in the industry, but, yes, something like a hurricane now -- You know, let alone market factors, and it just can wipe out that entire area that you're not getting back, and it's not the environment, but that infrastructure, and so I think that's one other thing too, and it's not just, hey, we're losing

infrastructure, and it's for multiple reasons, but, when these events happen -- Fort Myers is not going to be Fort Myers, what it was, ever again, and so it's just what resiliency is built in with our industry, on that shore side, when we have these major disruptions, whether it's economic or environmental or whatnot.

I would say that goes beyond shrimping too, and so that's just something to look at in the South Atlantic. When we have these storms, or these events, what opportunities are there to get back, and, again, look at Maine this winter, the storms that just literally washed away some of their fish houses, and, fortunately, they're getting immediate support, and this goes back to the disaster response. You can't wait five years. Your industry is not going to be there anymore, when you're hanging on with multiple impacts, and so just being able to try to bounce back from that is just getting harder and harder for them.

MS. SOLORZANO: Well, the problem in the Keys was not the lack of fishermen, or the ability, or the desire to do it, and it came with tourism, and, you know, the land became so valuable that, you know, Yankee money wanted it all, and they got it, and cruise lines, and things that weren't necessarily -- Yachts, et cetera, but there needs to be something, in states that have coastal docks and facilities, that encourages them not to sell, that say this has to remain a commercial or industrial waterfront, and this cannot be a cruise terminal, or whatever, and we were zoned as commercial industrial waterfront.

People down the road were coming in and wanting to change the zoning at my little dock right there, and they gave the guy next to me pure hell, because he was putting tugboats in, and they wanted it as residential, and it's very low-lying property. Luckily, and it took him years, but he managed to keep it zoned industrial waterfront, and, I mean, there were lots of people coming in and saying, no, no, no, no, no, but areas -- Certain areas need to be kept zoned a certain way by the states that do that.

Then there's also the fact that we're charged in Florida -- I don't know what other states do, but we have a submerged land lease, and so, everywhere that our boats tie up, the distance of the dock out however much you use, you have to pay so much to the state every year to keep that submerged land lease, to be able to tie your boats up.

Then you have your property tax, that there is no exemption on, and there's a lot of things that they could do to make it a little bit easier for people who have fish houses and places to be able to continue to operate, because, when you get those bills, on top of everything else that you're paying for, you're like, crap, I'm barely getting by, and now I've got, you know, thousands of dollars more of bills that we can't go out and catch the shrimp to cover, or sell to cover, and so there are things that could be done to help keep some of these fish houses and docks going.

MR. MERRIFIELD: Nancy.

MS. JONES: I am on the Mayport Waterfront Partnership, and supposedly, for the last five years, they've been talking about this, of building docks to bring in boats, not to stay permanent, but like, if Gulf boats come over, a place to tie up and that kind of stuff, and to give us more dockage, if we needed it for whatever reason, but, you know, this has been going on for five years, but they have started talking about blueprints and what needs to be on the dock, and that kind of stuff, and they

just built the one for OCEARCH, and they're talking about putting one in between where the OCEARCH dock is over to Safe Harbor, of a city dock.

It's supposed to be built so that, you know, bigger boats could tie up to it, shrimp boats, but, like I said, this has been going on for five years, and it's probably going to be another five years before we see anything, but, you know, that's -- At least that's there, where JaxPort bought all the fish houses, and they razed them, and took everything out, and now they're talking about putting in city docks for it, but, like I said, who knows when it's going to happen, but that's what has been talked about for over five years, and probably, like I said, another five before anything happens, but at least they're working on that, and, I mean, that will help a little bit, but that's in no way going to help everybody.

MR. MERRIFIELD: Okay. So infrastructure is in trouble. We've talked about labor costs, changes in the last five years.

MS. IBERLE: I think that covers it for social and economic. The next section, and I only have one question for that, and that's management measures, or issues, and I just wanted to note that the council isn't considering changing any management on shrimp at this time, but we're posing the question to you guys, and are the current management measures for the federal fisheries adequate? Should there be more or less federal management measures for these fisheries?

MS. SOLORZANO: Less.

MR. VOGELSONG: I would definitely have to say less on the management. I mean, if they want to manage anything, they need to be doing something about the sharks. I mean, there is an overabundance of that right there, but, as far as the shrimp goes, I mean, you know, we don't need any more management of this, to come in and close stuff, because, the more they close, then the harder it makes our job.

MS. SOLORZANO: We just had a meeting that I had went to in Fernandina that had people from all over the country, and it was a United States Coast Guard meeting, and it was about regulations, and so, five years ago, or six years ago, the same Coast Guard people sent out letters to us and asked if we had any recommendations that could -- I believe the council was part of that too, but that could lessen regulations on fisheries, and what could be relieved, so that we could operate better.

A new government goes in office, and guess what they wanted? What could they add more regulations to, and, of course, everyone there, from Alaska, Washington, Maine, Oregon, Louisiana, and there were people from all over the country that were present, and every one of the fishermen said no more regulations, and it was pretty much unanimous that that nothing else was needed, and every one of these place around the country, all these different fishermen that were shrimpers and lobster and crabbers and different entities that they worked with, all of them were struggling to make ends meet under the current administration that's in office right now.

Every single person is having problems in fisheries, and not just in shrimping, but in all of them. It's a struggle to sell the product, and the cost of everything is more, and you guys already know all that, but, anyway, that meeting was -- It was funny how it went from asking us to de-regulate,

what could be done, to adding more regulations. It's odd how that is, as if we needed any more regulations right now.

MR. WILLIS: I do a lot with the FDA, because I run a biotech company, and you may come at this a different way. Maybe you go to them and have them look at international shrimpers, and the facilities, and I know that the pharma industry, the medical device industry, because they were having -- It's called MEDUSA, and that side of it, and we were having all kinds of issues with low-cost imports.

You probably heard about it recently, these eyedrops that cause blindness and stuff, and, well, the reason for that is those plants hadn't been inspected. They were running basically sterile product through black pipe, and that gives you a good example. People in the clean room were barefoot, and so you might want to consider going at this a different way, for the council to go and say, you know what, why don't you implement the same type of rules and regs on the importers, where they have to go and inspect, and I will guarantee you, if they go over there and like --

I don't know much about this, and I'm talking like a man with a hat on here, but I would almost guarantee you that they're probably using certain types of feeds that you wouldn't want, and they're probably using heavy doses of antibiotics, because they're in small ponds, and there is probably -- If I'm not mistaken, and I know, in certain types of fish ponds that I've seen, they use human waste as nutrients in the ponds, which a government agency would like -- They would choke over that. That may be a way to get around your issue of imports, because, if they went and started inspecting these places, and, all of a sudden, for you to import, all of these standards have to be increased --

MR. FLUECH: Imports have to follow seafood HACCP regulations, just like your domestic.

MR. WILLIS: They're not inspected. They're not.

MR. FLUECH: They are inspected, and not to the level of -- I mean, when you look at like what the federal government inspects, it is a small amount. Most of your reputable industries though are going to also have their own QA and QC for those things, but you're right, and, I mean, there are going to be -- I think, also, a distinction between what gets consumed locally over there, versus what's imported, but, as far as the seafood HACCP though, if you're an importer of seafood, you have to go through seafood HACCP, just as much as you do locally, and so, I mean, that aspect, but you're right, and, I mean, I think, anytime you've got something farther away, there is more opportunities for gaps, but, as far as at least for the seafood HACCP side, that our processors do, the imports have to follow those too. Now, as far as compliance, I'm not touching that.

MR. WILLIS: I know, in the med-tech and pharma industries, they said they did, and, when they went out and starting inspecting, over 95 percent didn't.

MS. SOLORZANO: That's why I don't eat tilapia.

MR. MERRIFIELD: There is less than 2 percent of the product that comes into this country that is inspected, less than 2 percent.

MR. FLUECH: That's by the federal government. That's not -- Again, just being mindful of that though, and I know that is true, and, I mean, that's on FDA's website, and that's what FDA -- That doesn't mean there aren't other inspectors, and so I think that's being mindful of what's happening in the broader picture, and that's also important. I think that's why the accountability piece is -- Those questions that you raise, I think that is happening, and there are a lot of questions about that, and so I think it's a valid point, and I was just making sure that we understand that, when we say less than 2 percent, yes, the FDA, that's true, but keep in mind there are other avenues too, but I don't think you're wrong with what you're suggesting.

MR. VOGELSONG: But what about that one whistleblower fella there that worked at that one canning industry over there in Indonesia, the American guy, and I can't think of his name there, but, you know, whenever they would come to do inspections, and like they were notified ahead of time, and they just -- You know, they either hide the workers, or work the books, and I guess there was things that kind of went on, and I don't know what all was being brought about, but, you know, like with us, boom, they just pop-up, and show up on the boat, and everything is right there, and there is no time to say, okay, we're going to screenplay this and hide this or hide that, and, I mean, they have that opportunity, I guess, more than what we would.

MR. MERRIFIELD: I think what we're getting at here is, from the fisheries management side, no, we don't think that there is anything additional that needs to be done, and, in fact, we are the seventh most regulated industry in the United States, right above -- I think we're either right above or right below oil, and so we have enough regulation on the industry. I think where we need help from the federal government is probably on some of the other -- On the other end of it, in terms of creating an equitable market, and that's what we need help with from the federal government, and so, yes, we need assistance there. Regarding fisheries management, no. Nancy.

MS. JONES: No, I have nothing to add, and you all touched on everything.

MS. SOLORZANO: I have one quick thing to add, and it's very short, and it goes back to what this gentleman was saying earlier about the inspections. If these foreign shrimp are so wonderful, the imports, why are there so many more people with allergies to seafood? There used to not be, growing up, when you had healthier seafood, and now so many people -- I've had people come to me and say, every time I eat shrimp -- Just Sunday, every time I eat shrimp now in a restaurant, scampi, I get sick, and I said it's because it's full of things that you don't want to have.

American shrimp are monitored, and better regulated, as we all know, but these imports coming in -- They are not as healthy as what we should be eating. The EU doesn't allow a lot of this crappy product into their country, and so I think the federal management, if they want to manage things, would go back to exactly what he was saying, and let's manage international and really put forth some effort to go make sure they're following, with their fishing techniques, with the way they process, with the way they package, with everything to come to us and not go to the big end of it, and you've got to get to the little people down there that are actually selling those farm-raised shrimp to the bigger -- You know, in Ecuador, there will be fifty farms, and they're going to go through one, and you're only going to inspect that one big farm, and he's going to know you're coming, and that's just an example, but that's where, if you want to regulate federal, take it international.

MR. MERRIFIELD: Okay.

MS. IBERLE: All right. I think we've captured a lot on that. The one thing I do want to note, before we move off of this, and so looking into the inspections of foreign product is outside of the council's purview, and so that would have to come more from the federal government, or come completely from the federal government, and, unfortunately, not from the council side of it. All right. The next --

MR. MERRIFIELD: Just regarding the council there, and I'm sorry. I think that, when the council is making decisions based on areas of the bottom, whether we're going to preserve it or not preserve it, I do think there needs to be some more consideration into the fact that this is the food supply to the United States, and it has -- It needs to have some importance, and we need to look and make decisions in considering the fact that this is a valuable food supply to the United States that you are managing.

AP MEMBER: Another thing on that too, Mike -- I mean, if there's less and less working it, why would they close more of it? I mean, we need to open more if there's less boats working the area.

MR. MERRIFIELD: Okay. Anything else? I think we're ready to move on.

MS. IBERLE: Yes, and so, outside of just the last question, kind of just wrapping us up, this is going to be the last section, and that's concerning environmental, ecological, and habitat changes, and so, starting with the first one, is there any changes in abundance of white and rock shrimp? Has this changed over the past ten years, and, if so, how has this changed in your area specifically?

MS. JONES: There's been a change in the Mayport area. They recently dredged the river, and made it deeper, and it seems that it's taking longer for the shrimp to come out of the estuaries, you know, and there's no proof, or no agency has done any kind of data on it, but, you know, fishing-wise, it's taking longer for them to come out. I mean, they're way up in the river, way past where they used to be.

MR. VOGELSONG: I am trying to get set out there, and what was that that you were talking about there?

MR. MERRIFIELD: The differences in perceived abundance changes in white shrimp or rock shrimp over the last ten years.

MR. VOGELSONG: I mean, every season is different, you know, and, if I knew exactly what I was going to get next season, compared to this season, or the season before, you know, I would probably be a richer man. You know, this is -- This is hit-or-miss, you know, and it's -- Some years, the shrimp will want to stay further on the south side of the channel, or be on the north side of a shoal in a different area the next year than what they were from the year before. I mean, they move around, and they migrate, like an animal, but, like with the dredging of the channels and stuff, I have noticed that.

Even with, you know, dragging across the channel, different tides are coming out, and different layers, and it's -- You know, that is something that I have noticed as well, and then, I guess, when they did do a lot of dredging, they expanded a dump further offshore, which took away some of our bottom from there, which normally we would have worked, like in the southeast of Mayport,

but they -- Instead of going further off with the new dump, they just extended it further south and took away a couple of good spots that we used to drag on, and so, you know, the shrimp probably are getting out there, but we just can't drag it now.

MS. SOLORZANO: White shrimp have been -- In my opinion, you know, that's going to vary each year, and Jason answered a lot on white shrimp. As far as rock shrimp go, we have a lot of -- I stepped out of the room for a minute, and I don't know if he spoke on this, but the runoff from down south created a lot of issues with rock shrimp there for a while. Rock shrimp seem to have -- They stay pretty much in the same region, and they don't really move north and south, where shrimp seem to have -- This may be going to Question b as well, but white shrimp -- I can't say they moved further north, because no one really explored that Virginia and Maryland area, and they may have been there all along, and just no one was really working those areas, and now, due to the economy and different things, people are working into those areas.

I don't know that they've moved, but they've stayed in the north Florida, Georgia, South Carolina, and North Carolina region that we know of, but rock shrimp don't move. They stay. They will either be on the north end of the bottom or the south end of the bottom, and, for a while, we didn't get much on the south end, because there was just so much runoff from the development in south Florida, and, you know, it's just -- It created a lot of problems for the rock shrimp industry.

We've asked, and I guess this was brought up yesterday, where there was this, you know, closure, and then they offered it back, and then a new council came in, and I don't know who, the environmental people, said we don't want you to have it back now, and they know that there's no coral in that area, and we could have that bottom back, but they just choose not to, and so we don't know if there is rock shrimp there or not, but there probably is.

MR. MERRIFIELD: I think I brought it up probably about five years ago, or six years ago, when the Okeechobee releases out of the St. Lucie Sound, and it basically destroyed the south end of the box, and so the box being the Oculina closed area off of Fort Pierce down there. Usually south of the box was tremendous, really good rock shrimp bottom, and it's -- There was one year, when they had a huge release, and the algae on the bottom was so bad that they couldn't drag it, and then, since then, that bottom is basically unusable. It's dead.

MS. SOLORZANO: Laurilee had mentioned about what happened around Titusville, and it's been so -- The normally things that would normally hatch out on that area aren't, and we were having this discussion, I think just between us, not long ago, and so population, and the development, in Florida has -- We need to put a sign up that we don't want any more.

MR. MERRIFIELD: It affects the estuaries, and so I think the estuaries in Florida in trouble, and I think, when we do the presentation on the estuarine research project, I think we're going to see some of these factors that may come into play here as to when we have good years and when we have bad years, but, I mean, any shrimper will tell you that the estuaries are incredibly important. That's where everything comes from, and so we need those estuaries to be clean, and we need to be taking care of the estuaries.

MR. GEER: You mentioned about Virginia, but SEAMAP -- There is data that's been analyzed by NOAA for a climate project that they were doing looking at species shifts, and they were looking at the -- They used the SEAMAP data, the trawl survey from 1989 to the present, which

goes from Cape Canaveral to Cape Hatteras, and they found that the population has moved northward about fifty-nine miles north, and the range of the species has contracted almost a hundred miles during that time period. Now, it kind of bounces around, but, in general, it's moving north, and we're seeing that with a lot of species.

The complement to SEAMAP, which hasn't been going on as long, is NEAMAP, which goes from Cape Hatteras to Cape Cod, and they've only been sampling for about fifteen years, and, off the Virginia coast, their estimates of white shrimp have gone up six-times what they used to be since 2014.

MS. SOLORZANO: Also, and I know it's not mentioned on there, but the royal red shrimp, and they have stayed in the same area as well, and we're in a deepwater council meeting, and so they're not moving from their normal area either.

MR. MERRIFIELD: I wonder if a lot of that has to do with the cleanup of the Chesapeake, and so some of the cleanup of the Chesapeake Bay has revived some of those estuaries.

MR. GEER: It could, yes, and I think a lot of it has to do with water temperature. I mean we're just seeing warming water temperatures, and changes in the Gulf Stream, and we're speculating it's just the spawners from North Carolina are getting entrained into the Chesapeake Bay, and that's where we think our stock is from at this point.

MR. VOGELSONG: Yes, because, even with the hoppers that we catch offshore out there, and, you know, I mean, we used to catch them all, like off of Fort Pierce and south, and, you know, you could always expect, around September, to really hammer the shrimp down there, and then, here in the previous years, they've been off the Cape, further north of what they typically have been, and I don't know if that has anything to do with the runoff or not.

MR. MERRIFIELD: I really think it's water temperature has some degree to do with it, but I think the health of the estuaries is a huge factor too, because, down where we are, our estuaries are not healthy, and we're not getting the shrimp coming out like we used to.

MR. GEER: I mean, if the larvae are getting into Chesapeake Bay, they'll be fine. I mean, it's a big estuary, with lots of food supplies, and the water quality has gotten better, and, you know, I always say it's a great place for shrimp to grow up, so to speak.

MS. SOLORZANO: See, I recreationally -- I live on the river off of Nassau Inlet, and so there's tons of estuaries around there, from Fernandina and St. Marys right down to the St. Johns River, and I go out fishing, and we're pretty clean where we are, and our area is -- The little shrimp are popping like popcorn when I go out in the boat, and they're all over.

MR. FLUECH: You guys have a river -- Don't they allow them to harvest in the rivers?

MS. SOLORZANO: No.

MR. FLUECH: No?

MS. SOLORZANO: I take that back. In Florida, there are some -- There are just a couple of dead bait permits that are left, and you can live bait if you have the permit in a few places, and it's very limited where. Most of the Florida fishermen that are relatives of mine, that still do it, which there is very few left, and they're in Georgia doing it for most of the year. Florida is just --

MR. VOGELSONG: That's another thing, yes, is they quit selling the licenses in 1976, and so, for someone like me, they quit selling the licenses the year before I was born, and, you know, that exempts me from doing that in my off time, if I wanted to, you know, to do the dead bait fishing in the rivers.

MS. SOLORZANO: Yes, and they stopped all the dead bait. If you weren't grandfathered into it, you didn't get it anymore. That particular year, my father didn't -- Because they never had a problem with them, and he didn't go get one, and he had ocean boats too, but he also had river boats, and so he didn't get his, but the few people that have them are very elderly, and, when they die, if they don't leave it to somebody, it's gone, and so they've just about done away completely, in the State of Florida, with those permits, and that was their intention, to do so in the State of Florida, is to not allow it, and that's east coast. I really can't speak on the Gulf, but I believe it's the same, and I just know that's east coast.

MR. VOGELSONG: It would seem like, if you could harvest more in there, when the time comes, you know, it would help push them shrimp off and get them out to where they need to be.

MR. MERRIFIELD: Nancy, did you have a comment?

MS. JONES: I was just curious, and it's a totally different thing here, but has anybody from the Coral AP or whatever -- Have they checked the Oculina Bank after they do a release from the Okeechobee, and we have all the issues in the estuaries, and have they check out there? Does it get out to there?

MS. IBERLE: I am looking to the staff member that's working with the Habitat and Coral, and she's saying that not that we're aware of, that they're not checking the coral after these releases. Thanks, Kathleen.

MR. VOGELSONG: Well, they've also got to take into consideration -- I mean, it wouldn't just be on the top tide, and it gets down into the bottom, and, you know, like I said, there is different tides out there, and I don't know if they understand that, or realize that, but, if that stuff is coming out of the runoff, and, you know, it gets down, and it gets pushed on up, then that could be killing a lot of the coral.

MS. SOLORZANO: There's another thing that Georgia has that's predominant in their shrimp, is the blackgill, and any of the Georgia fishermen will know that the quality of those shrimp don't hold up as well, yet that wasn't even a factor twenty years ago, fifteen or twenty years ago, and it was very rare to see it, and now it's, every season, Georgia shrimp are -- They have blackgill in them, and so they have to be headed right away and taken care of.

When you get into Florida, and, for some reason, we don't have -- Once you get, you know, south of Fernandina, you don't have blackgill as much, and so I don't know if it's some sort of algae

bloom or what happens that causes blackgill in a lot of Georgia shrimp, and I don't think the scientists know either.

MR. FLUECH: It's caused by a ciliate, and so the epicenter is still Georgia and South Carolina, but it's been documented from Virginia through Texas, and so, I know in the Gulf in particular, there's -- I know, for Texas Parks and Wildlife, it was question of has it been there, or it just wasn't something they were looking for, but I know they have seen increases in it, especially in the Gulf, but, yes, continued -- You know, a lot of times, we are asking about sediments, and there's no evidence, as far as from the research, showing that it has anything to do with the sediments itself, and it's thought to be a previously unknown organism, but, you know, fortunately, and this is one thing from the outreach perspective, when consumers ask about it, it doesn't -- You know, it doesn't affect the flavor, and it's not a safety issue to humans, but, you know, obviously there has been research.

The South Carolina DNR has also been involved, and the Skidaway Institute of Oceanography has been heavy into the research, but looking at the impact on the shrimp as an individual and, of course, as a population, which is a big question, because there's not a body count. You don't see shrimp watching up on the beaches, because so many things eat it, but we do know that it can certainly impact the health of the shrimp.

I know South Carolina DNR has done some pretty cool research, just looking at the impacts as far as just predators affecting them, but, yes, we do -- I mean, especially in the warmer temperatures, which there is thought to be some correlation with that, and we do see higher levels, and, I mean, there's times where shrimpers say that 80 to 90 percent of their catch has visible blackgill. There are still -- I think, the more they research it, there definitely are still some unknowns. You know, in the winter months, where does it go, even with some of the molecular assays they're doing -- That's still kind of a smoking gun.

That's been the big thing, as far as the education, is just letting people know that it is perfectly safe to eat, and it's not something that affects -- For most consumers, they would never even know the difference, because, once you head it, you can't see it, but we definitely do spend a lot of time educating people about it, because -- Then people get confused with blackgill and blackspot, which are two different things, and there's always that need for that outreach aspect.

MR. SOLORZANO: In North Carolina, if you go shrimp in North Carolina, their shrimp are gorgeous. It's a beautiful, beautiful product.

MR. VOGELSONG: Could that have anything to do with the amount of inlets that these shrimp, and the estuaries that they're sitting in stagnant? I mean, if it's blackgill, then it's where they breathe, and so it's coming through their so-called lungs. If they're sitting in stagnant, warm water, breathing this microorganism in, then maybe it's just -- To me, that's where it seems like it would come from, from the abundance of -- Like, in Florida, you don't have many inlets, I guess, or ports, so to speak, where the shrimp go in and out. Like I said, once they get out here in the Atlantic, they're in cleaner water. If you're in there in these, you know, inlets and rivers and stuff, you know, where you have more runoff from residential properties, and these shrimp are sitting in stagnant -- They're just absorbing whatever, and, by the time they get out, they become weak and less-superior shrimp.

MS. IBERLE: All right. I think we've got pretty much all three of these covered. I think this -- Let me see here, and so we've got two more slides of environmental, and I think we can kind of do what we've been doing, and cover them in chunks, but these next set of questions are have you observed changes in catch depth, and we've kind of talked about that a little bit, and then do you attribute this change to where fishermen are choosing to operate or a change in the location of the shrimp themselves?

Have sea conditions affected fishable days, and I know we've talked a little bit about weather and when we talked about obstacles to the fishery, and then a white-shrimp-specific question of how do temperature closures affect your fishing activity, and I know that Chip showed -- I believe it was 2013 and 2018 were the cold-water closure years, and so, with that, I will turn it over.

MR. MERRIFIELD: Those were also extremely low harvest years too, and obviously that's a huge impact.

MS. SOLORZANO: Well, we're never going to control the weather, and so we might as well just drop that one.

MR. VOGELSONG: You're not going to control the shrimp either. I mean, you know, if you get the right weather, it pulls the shrimp off, and you can work them out deeper. If you don't get the right weather, the shrimp stay in, and, you know, you can't get to them. I mean, some years, if you don't have the northeastern, when it is closed, and you can't get inside of the three miles to catch the shrimp, and, like I said, I guess the weather would affect a lot of -- If you're going to be in deeper water or shallower water.

MR. MERRIFIELD: I think we're good.

MR. FLUECH: Just for a part of it, I would -- As far as the attribute the change, that goes back to what we were talking about earlier, just the markets, and, you know, they're going to go where the shrimp are going to go, so they can try and make, you know, some prices on that, and so it's not so much -- From the input I've gotten, it's not so much that, you know, if someone is changing where they're fishing, it's not so much environmental, and it's more economic factors.

MR. MERRIFIELD: Yes.

MS. SOLORZANO: With rock shrimp, you're going to have -- They're going to start out inshore, and, as soon as you have a hurricane, or some weather, they're going to move off, and so that will determine whether you have a short season or a long season, and they're going to move as soon as one hurricane rolls on them. They're moving out, and, once they're outside of the bank, and get too far out, there's no more, and so you might have a month-long season, and you might have a four-month-long season, and it might start in July, and it might start in September, or October I've seen it start, and so it's -- That's a hard one to figure out.

MR. VOGELSONG: If I could write a book on how to catch shrimp, I would be a millionaire.

MS. IBERLE: All right, and so the last set of environmental questions is have you noticed a change in the species caught over the years, and so the stuff that you're catching with shrimp, the

incidentals, and then we kind of touched on the space activity, and I feel like we've covered this, but any additional input on how space activities are affecting your business, and I will hand it over.

MS. SOLORZANO: Obviously, we have less incidental, because we have TEDs and bycatch reduction devices, and so clearly there's a lot less incidental species than there once was, and it was brought up earlier, and I believe that the sharks may be affecting the whiting, and we're not catching as much of that, and flounder either, and so, some of the bycatch that we used to bring more of in, we're not getting now, and it could be due to the devices, but I believe -- Because we had those devices, even just a few years ago, when we were getting a lot of whiting, and a lot of flounder, as bycatch, and now we're not seeing that, and I believe it's just the abundance of sharks.

MR. FLUECH: The last three years, or five years, or like when did you guys notice that difference?

MS. SOLORZANO: Probably in the last about five years.

MR. FLUECH: Okay.

MS. SOLORZANO: I would say five years.

MR. FLUECH: We've heard that from some of the -- I guess I haven't necessarily heard that consistently, but we've had that same comment about the whiting, and so it's interesting that you said that.

MS. SOLORZANO: We used to come in with pallets of whiting, and now, if we have five sacks of whiting, on a freezer boat trip, that is nothing in comparison to what we used to have.

MR. VOGELSONG: We used to always bank on the whiting paying the grocery bill, and the gloves and stuff, and supplies for the crew, but, you know, that's -- It's been quite a while, five, six, seven years. You know, when we quit seeing the guys coming out, and like one fellow, Bruce, he used to always come out around Fernandina and catch sharks, but, as soon as they put the limit on it, to where you could only do like a hundred a day or something, it just -- He could go out there within twenty minutes and catch his limit, and then be back in, but he can't go back out until the next day, because he met his daily quota, and so, you know, that hurt, because, you know, nobody is doing it now, and I'm sure a lot of the recreational sportfish guys are -- They complain about the sharks as well, because they'll be catching, you know, fish around them wrecks and stuff, and they come up with a fish eaten in half, you know, from the sharks.

MS. SOLORZANO: Just fishing three days ago, a trout -- A shark -- We got a half a trout, the shark ate it, inshore, in the rivers behind my house, and the sharks are unbelievable, and it's not just an Atlantic thing, and it's a Gulf thing. It's everywhere, and it's not just us having the problems, and we have a lot of issues with sharks that have cost us a great deal of money with props and shafts, because, when they get the prop, they bend it, and they bend your wheel, and bend your shafts, and things like that, and it gets quite costly there. There are lots of issues with sharks, and not just the sewing of nets, but the other damage to equipment that they create.

MR. MERRIFIELD: That's a result of the federal shark fin ban legislation. Regarding -- Are we done?

MS. IBERLE: No, go ahead.

MR. MERRIFIELD: Regarding space, I think we've talked about that, and not just in area and time closures, but also in gear damage, and the problem is that, when this stuff gets picked up, it gets -- Generally, it's put right back down. Usually a captain will pick it up, throw it back in, and mark the spot, so they know not to drag there and catch it again.

MR. VOGELSONG: I mean, you try to move some of that stuff, but, if you get the cylinders, the things that roll, it doesn't really matter where you drop it. I mean, you could drop it offshore, or inshore, but, as soon as you get a stirrup on the bottom, it rolls right back out, and, you know, we've had that issue with -- I mean we're still catching debris, down in Cape Canaveral, from stuff that was launched in the 1970s, and, I mean, it's just -- It's a movable thing, and these things are so heavy that you try to get it on the boat, to put it somewhere, but then it rips out your net, and, I mean, there's nothing you can do with it, but, you know, like last year, what did they do?

Like over a hundred or something launches, and I didn't rock shrimp that much last year, due to the price of everything, but, when I did, you know -- If I was working an area, and I would hear them, you know, schedule for a launch, then, you know, you've got to run twenty or thirty miles, south or north, to get out of their launch zone, and, I mean, sometimes further than that, and, if you're bucking against the tide, and you're only making four or five knots, and, I mean, you're burning fifteen gallons or so an hour, twenty gallons of fuel an hour, and you've got to run an extra four or five extra hours to get outside of this launch zone, you know, to an area that the shrimp just probably aren't in.

After the launch, you know, then you can get to come back, but, yes, it has put a hindrance on it, as far as working, because, you know, the shrimp might only be in that little ten-mile area that you're going up and down in for the night or two, or while they're in that spot, and you've got a launch, and everybody has got to kind of move, and be gone, and stay out of there, and then, if the launch is scrubbed, then, you know, you've missed a good night's fishing because you weren't in the better of the shrimp there.

MR. FLUECH: This hasn't occurred yet, and I know it's gone back and forth, but, I mean, the proposed launch site in Camden County in Georgia, and I know that it's been stalled and stuff, but, I mean, there was -- There was a graduate student that was interviewing shrimpers about their past, and just about, you know, if this was to happen, you know, would it interfere, if they end up doing the closures like you said down in Cape Canaveral, and so there's definitely some overlap. I'm not sure if that is still going to happen or not, but just one other potential area to keep an eye on down the road, if that eventually ends up happening in the St. Marys area.

MR. VOGELSONG: Well, it's just like west of Apalachicola there, that Cape San Blas and all, and, you know, they've messed that up so much, with stuff that they launched out of the Air Force base, their drones, and, you know, that bottom is almost -- You can't even hardly work it. The last time we tried, every night, we were tearing up a net or two, just over the debris that was there.

MR. MERRIFIELD: So, if you're developing plans with some of those space entities over there in Georgia, you want to make sure that you have recovery -- Something to help recover debris, and it would be great to have compensation for damaged gear, and, also, we've been trying to get

waivers, so that these guys aren't subject to a $250,000 fine, and six months in jail, and so a -- Most of them, you know, it is that one-in-a-million odds, and so I think most people would sign a waiver saying, okay, I will take my chances, or they have the ability to get out, if they want to get out.

MR. VOGELSONG: I mean, don't get me wrong, and you get to see the best launches in the world from there, and that's the best viewpoint ever, but, you know, it's aggravating when, you know, you've been working all night, and all you really want to do is just kind of drop the anchor, because, you know, you've still got a bunch of shrimp to freeze and process and get done, you know, another half-a-days' worth of work, and so, instead of me being able to go back there and help -- You know, sit on a stool and help my crew, and I've got to run four or five hours, you know, down there to throw my anchor, and hope and pray there's enough to work on down here until, you know, after the launch goes.

MR. MERRIFIELD: Because getting their attention after the fact is very hard, I can tell you. I'm a nobody in that meeting. We're not stopping space, and it's going --

MR. VOGELSONG: No, we're definitely not stopping it, and, I mean, I really wouldn't want to, but it's just -- You know, I mean, luckily for us, they haven't -- I mean, in the past, they would fly a helicopter out, or send a boat out, and tell us to move and stuff, you know, and, the last two years, I haven't really noticed that.

You will see the helicopters flying around, but, you know, if you're -- I mean, we've had instances where we're right at that line, and, you know, you can set out and just start dragging into it, if they do launch it, and, you know, nobody has said anything, but, to be like slap down in the middle of it there, it's best to, you know, just go ahead and run on out of the way, so you don't have to be, you know, hassled up, but it just is a pain in the butt, and like the shrimp might just only be in that one little spot, and, if you've got an eighty-mile, or a seventy-mile, area that they've closed off, then -- But, yes, talking about somewhere in there and waiving the fines and stuff, because, I mean, we would sign a waiver, and I would say that we would be okay, but it just dampers everything when you've got to move and waste the fuel to get out of there.

MS. IBERLE: I think -- So we've just kind of one more question to wrap us up, and this is just kind of an open-ended question, and I also want to rope in Pat and Sonny, and so anything else that the council needs to know about the white or rock shrimp fishery and then any other input from the Maryland and Virginia area that you think is important that the council needs to know, and then that will conclude.

MS. JONES: Well, I was going to go back to g, the bycatch, or incidental, and it's incidental, and we've noticed an increase in catch of sharks, and, in the last couple of years, and I don't know about this year, but, the last couple of years, it's a good thing we've had the extra $25 from the state to have crab, because we have had enough crab to actually sell, and, being a day boat, we can bring them in and sell them, but he's had a tremendous about of crab increase in the last two years, but that's what I wanted to comment on, is g.

MS. IBERLE: Really quick, and thank you for that, and that's blue crab, correct, or stone crab? I just want to make sure I get that.

MS. JONES: Blue crab.

MS. IBERLE: Thank you.

MR. GEER: I guess I will talk on the Virginia perspective. We've always had shrimp in the bay, and I worked in the Chesapeake Bay from 1998 to 2002, before I went to Georgia, and then we would have years where, all of a sudden, in our surveys, we would catch a number of shrimp, and everyone would want to get excited and want to do something the next year, and they wouldn't see it the next year, and that's the way it was.

In like 2017, some of the guys gillnetting off of Virginia Beach started seeing some, and so they asked, hey, can we get an experimental fishing permit, and we said, yes, sure, and so they did it, and they were moderately successful, and we gave another permit the next year, and it just kept going like that, and our goal was to grow it very slowly and methodically, and so, by 2020, we had eight permits in Virginia Beach, and two up the eastern shore, and they caught over 400,000 pounds of shrimp in about eight weeks.

AP MEMBER: (The comment is not audible on the recording.)

MR. GEER: The gear, I have a photo of it, and the gear is a beam trawl, okay, and they -- It's a -- Trawling is illegal in the Chesapeake Bay, and even using the word "trawling" gets everybody edgy, and so, when did this, they took two old crab dredges, and bolted them together and threw a sixteen-foot net on it, and it was like, you know, using a bazooka to swat a fly, is what the equivalent was, and so it's a sixteen-foot net.

The next year, they went to -- They designed their own very light aluminum beam trawl, and it's kind of bulky, but it works, and the boat sizes are about thirty-eight to forty-five-foot boats, and so low fuel costs, small nets, and, when I worked in Georgia, if you asked most of the people that I worked with in Georgia, if you were to going to start the shrimp fishery over again, you wouldn't be using these larger boats, and we would go to a smaller fleet, and so that's what we went with.

Their fishing area is they leave Rudee Inlet, and they make a right and go two miles, and so it's -- They don't have hardly any expenses, as far as fuel is concerned, and it's worked out fairly well, to the point where, in Virginia Beach, we decided to make it regulated fishery in 2021, and I can tell you we had over a hundred applicants for a total of twelve licenses, and so everybody has been happy about this fishery, except for the people who didn't get the licenses, and those people have been very vocal, saying, you know -- I had to tell them, what don't you understand about a lottery?

You know, it was a lottery process, and they're like, well, I deserve it, and, I'm like, you know, you don't win the lottery every time you play type of thing, but it has worked out well, because we've done it slowly, and we've put observers on the boats to check for bycatch, and our bycatch rates are extremely low. I mean, at a high, they're probably 0.5 pounds of bycatch for every pound of shrimp, and it's typical that -- You know, when the season first starts, it's higher, but, when they start getting into the shrimp, it gets even lower than that, and so we've kept that bycatch low, and that has kept everybody -- You know, anybody who is concerned about this happy.

We have -- You know, we haven't had much success on the eastern shore, and it's like the guys, for whatever reason, they go out, and they do one day of fishing, and it doesn't work, and they

quit, and so -- But Virginia Beach has been very successful, as you've seen. You know, the guys are basically marketing it down there, and they've done a good job. The catches have been variable, and it's went up to 400,000, and it went under 100,000 pounds the next year, and I had to try to explain them -- It's like the graph that Chip showed yesterday.

Shrimp are going to vary from year to year, and so we are looking, this year, to expand a little bit, to about eighteen boats, and so just a little bit. We don't know what the carrying capacity is for that area right now, but it seems like there's enough area, between Virginia Beach and the eastern shore, that it can easily support the number of boats. They will never be allowed in the bay, as long as I work there, and that is going to be off-limits.

What we did is, when we created our regulations, we said, if you have legal fishing gear, you can fish, but you can only keep twenty quarts with the heads on them. It makes it so, if you catch them, you can bring them home, but it's more of a bycatch fishery. I am trying to think what else. I mean, it's -- Maryland approached us about two years, and, if Virginia has something, Maryland wants it too, and so their legislators passed a law that said they had to start creating a fishery, and so I've worked very closely with Sonny, and the folks at Maryland DNR, to try to develop that as well, and I believe what they're doing is identical to us.

MR. GWIN: Yes, and we're trying to mirror what they've done, especially with the -- Except for the participants. We only have one ocean inlet, and seventeen miles of ocean beach line, and so we're trying to just get a small fishery, and the biggest reason that we're trying to get into it is all of our other fisheries are going away from us, and, I mean, we're getting hit in the head. Our little commercial harbor there, between -- You know, you all talked about infrastructure, and our infrastructure -- Two weeks ago, I was at a public hearing on permitting, and the wind people are buying our last two fish houses, and, if it weren't for the fact that our state senator went in and, where we tie up, we have a commercial dock, and they made it a heritage area, and we probably wouldn't have that.

The fishing industry is just going downhill and downhill, and we're hoping that it's going to be a little fill-in, because, just like in Virginia, we're seeing shrimp in our coastal bays, and the gillnetters are seeing them in the ocean, and, if we could have a small fishery to fill-in for these guys, until they go to their next fishery, and the same way with Virginia Beach.

We can bring them down to the tourists, and Ocean City, Maryland, is a big tourist town, and we can sell fresh shrimp off the boats down there. It's getting off to a slow start, because, number one, COVID hit right when we started getting this program going, and then, right after COVID, when guys went to go rig up, the price of everything -- Go to the junkyard and try to buy junk metal, and it's just -- Believe me, I went through it last year, and I'm the only one that has rigged up yet, and we have three other fishermen that are going to go this fall, but it's just everything costs so much. We're hoping to get really started this fall, and we're going to see what happens, and I would just thank Virginia, thank Pat and the guys down there, that have really helped us out in getting this program started.

MR. GEER: That's a good point that Sonny made. A lot of the folks that got into this fishery are spiny dog fishermen, gillnetting, and spiny dog has been -- It's a high-volume-low-value fishery, and they've been hit by a couple of things. The primary buyer in the area retired, and the business

went away, and so, all of a sudden, they have to figure out how they're going to get all those fish up to Massachusetts for processing.

They got a quota cut this past year, and now they're also -- The Mid-Atlantic Council, and NOAA, is considering fishing restrictions, because of interactions with sturgeon, and so all those things combined are affecting them, and so a number of these guys who are in that fleet as well -- The former dealer, what he would do, is, if he wanted them to go shrimping, he would give them higher prices for shrimping, and then, if he wanted them to move over to spiny dogs, he would lower the price of shrimp, and they would have to go spiny dog fishing, and so it's -- It has worked out well in that regard.

You know, one of issues we do have is that we are seeing more boats from North Carolina coming up and fishing just outside the state line, and, you know, our guys are fishing with this little tiny sixteen-foot net, and, you know, they were coming back with 220 foot of line, and it's kind of like how is this fair, and it's like, well, we would only be able to have one or two of those sized boats in state waters, for this fishery, and so we're just kind of looking at that, and we're very happy that the council invited us down today, because we've been trying to think how do we deal with federal waters of this fishery, when the jurisdiction stops at North Carolina, and how do we do that.

You know, I met with the committee a couple of years ago, and they said, well, you've got to talk to your council about that, and our council is like, no, you need to talk to the South Atlantic Council, and I was like, okay, it's a tilefish all over again type of thing, and, with shifting populations, we're really starting to see that we have to have more cooperation and more, you know, interaction between the councils with some of these species.

MR. GWIN: One other thing that I've really been pushing to our fisheries managers is these beam trawls have no buoy lines. These beam trawls come home with us at nighttime, and these beam trawls have fish excluders. These beam trawls, we have do half-hour tows, and, for protected resources, and for what we're doing it -- You know, to me, it's just like things are changing, and not only in our fisheries, but in our gear we use, and we have to embrace this gear change and find something that, you know, can help protect protected resources, and that's one thing that I'm pushing toward the fishery managers, to take a look at it, and maybe this is something, up the road, that could be, you know, helpful for our protected resources and the stocks that we fish on.

MR. GEER: Just one last thing along that, and I'm chief of fisheries, and I get beat up pretty hard at public hearings most of the time, but, when we've done this, we have received unanimous support from our board, from our governor, and, every year, we have to take our governor shrimp for Christmas, and there's a marine police taking him shrimp up there for the holidays, but it's because of the way we've done it. We've done it slowly, and we've monitored it closely, and we knew about the protected resources, and so the thirty-minute trawls, and all those things have kind of, you know, kept any, you know, people against it at bay, so to speak.

MS. SOLORZANO: When I was up seeing the stuff that was going on, those beam nets, as you call them, are similar to what we used when we scalloped, but not as heavy, and so I recognized what was going on with that, but, as you were saying, the boats -- When we were in North Carolina working, or when my sons were, and I know where my boats are all the time, because I can watch them, and it's the only thing that I can do on the computer, and so I know where they're working, and it's funny how they would work.

In twelve days' time, they would have 850,000 pounds of shrimp, and you're not going to pick that up if it's got a lot of bycatch in it. It's clean, and so, when the shrimp in North Carolina come out, they're spotty. You go along, and you watch your meter, and you're not even dragging. You watch the meter, and, when you see the activities, with your electronics, you stop, you put out, and you're in the shrimp. As soon as it changes, you pick up.

You may only drag an hour, at best, and you've got all you can handle on the back deck. You're not going to put that into fish, and so the way that they've done it -- They have to run for weather, from here to there and around that point, and I was like all you're doing is running around out there, and then the boat is full, and, you know, it's very clean fishing, and there is not a lot of incidentals, if you're in the shrimp.

I watched your guys in Virginia, and it was really half of my vacation was spent like amazed, and they were like do we have to ride the bikes down to that dock, and, yes, at 4:00 p.m., we're riding the bikes to the dock, and so I would watch these guys come in and sell their stuff, and I watched this every thirty-minute process, and I'm like what the hell are they doing, you know, and then my son told me that, Mom, they're shrimping, and I said, I thought that's what they were doing, and he told me that he was in communication with one of those fishing boats, shrimp boats, guys that he befriended and become friends with, and so he would tell them, when they caught at the line, that you knew they were going to move, and so those guys didn't stay in one place coming out, and they would be on this side or that side, and I would wake up the next day, and they were nowhere around. I would call my son and say where did they go, and he would turn the radar on, and, all right, they're down here, or over there, but they would all fish together.

MR. GEER: That's kind of a -- It happens in Georgia as well, but it's really a strong group in Virginia. They did that when we had crab dredging too, and they would all tow -- They would pull their drags as a group, and four of the people that have licenses are brothers, and one of them didn't get a license, and he was very upset that he couldn't fish with his brothers anymore, but they all fish as a group.

If you take -- We have coordinates from our observer trips, and, if you look at it, it's pretty bunched up where they fish, and they're not using that whole area, and like most of it is right off of Rudee Inlet, and we keep asking them that you have this large area to fish in, and why aren't you using it, and they say because we're catching fish right off of Rudee, and why do we want to go anywhere else, to the point where we were actually going to force people down there, by splitting it in half, and saying you need to fish down closer to North Carolina, but it's -- You know, that's the way they fish. They fish as a group, and, when one of them catches, they will tell the other ones, and they all kind of come to the same area.

MS. SOLORZANO: But, when the big boats were out, and our boats were out freezer shrimping for these shrimp, and, you know, they're staying out and making these trips, and the trips are very quick, because there is so many shrimp, when they're in-season, and, I mean, not everybody, obviously, is going to catch shrimp like that, but the seasons last a pretty good while, and so it's definitely not overfished at all, not in North Carolina, and obviously not your states, but I'm wondering if some of these shrimp that are coming into Virginia are coming out of North Carolina and just migrating, or other states, and they're not necessarily coming from the Chesapeake.

MR. GEER: I don't know if the shrimp are migrating, and I think it's larval recruitment. I don't have a whole lot of proof about that, and, I mean, the Chesapeake Bay program used to have a zooplankton study, but they've stopped that, and this was years ago, when I was VIMS, and I looked at that data, and it seemed like, when we were catching more in our trawl survey in the fall, and it was more larvae coming in, but, you know, that's kind of anecdotal, because it wasn't the best of data, but I really think it's just larval recruitment, and that's probably contributing to -- You know, it's a factor of changing water temperatures, changing Gulf Stream, things like that that are changing some of these patterns that are occurring. If you look at the letter that I sent, the NEAMAP data, it just has gone off the charts. I mean, it was like they were catching very low values, and then, all of a sudden, in 2015, it went up, and it has stayed up, and that is right in the same area where these guys are fishing right now.

MS. SOLORZANO: We wouldn't work North Carolina for ages, but it wasn't as predominant as it is now, and so, you know, I guess things are just --

MR. GEER: I really do believe there's a shift. I mean, when our governor -- When people in our state say, well, you know, climate change doesn't exist, I'm like, well, we have a shrimp fishery now, and how much else do I have to say?

MS. SOLORZANO: Climate change has existed since the first --

MR. GEER: I say warming water temperatures is what we're seeing, and, whatever it is, it's like the last, you know, fifteen or twenty years, the water temperatures are going up. In Chesapeake Bay, the winter temperatures are -- It's mostly seeing in the wintertime, and we're seeing much warmer winters as a result.

MR. GWIN: You have to add in there the gear technique, because, before, you weren't allowed to use that type of gear to go in and catch anything, and so we're allowed to go in -- Maryland is two miles, and we actually went to the legislature to get us to we can go a half a mile down the beach and a quarter of a mile up the beach, because the state-federal park won't let us go in any further than that, and Ocean City will let us go into a quarter mile.

MR. GEER: This whole fishery -- I mean, he's starting on September 15, and we start on October 1, and it goes through the end of January, and so there's a lot less activity on the water, with most of the people, and, because of the time of the year, water temperature is starting to go down, and, like you said, bycatch is minimal.

MS. SOLORZANO: It surprises me that your lotto system was a lotto system, and yet it seems like certain family members scored in the lotto -- Like certain groups of people got --

MR. GEER: When we did it experimentally, we had a whole set of criteria, because we could do that experimentally, because we wanted to succeed, and so the way I put it was -- There was a point system, sort of like a raffle, and so, if you get a lot of points, you're going to get more raffle tickets, and so, when I pick that name out, you have a much better chance of getting -- So it was a weighted lottery. When we went in and created the licenses, anybody who had a permit in the past, and used it and fished, got a license, and so anybody who had one, but, for the remaining ones, we had -- It was pretty much an open -- You know, if you had a commercial license, you were eligible.

You know, we've gotten some criticism about that, but I don't know a better way to do it, to make it as unbiased as possible, other than -- You know, because we want to make it available to anybody who has a commercial fishing license, who has experience. You know, nobody has -- Hardly anybody had any experience trawling in Chesapeake Bay, and so --

MR. VOGELSONG: I want a license.

MR. GEER: Everybody wants a license. Get in line.

MR. VOGELSONG: I'm a brother, and I've been shrimping for years, and I know what I'm doing.

MR. GEER: If you want to come in and tow a little sixteen-foot beam trawl, you're more than welcome. We'll put you on the list.

MS. SOLORZANO: You've got to home every day at 4:00.

MR. GWIN: We were mirroring Virginia, with exactly what they were doing, and, when everybody put their application in, nobody got a permit, because, if you were late on a report, that was a point, and so they had to come back and, you know, we have a problem, and I had a call that we've got a problem, and they said nobody can get a permit. I said, why, and it was because everybody was late on putting their fishing reports in, and that was part of it. They changed it around, and we got it straightened out, and we have seen permittees, and I know, this year so far -- We're having a meeting on May 30, trying to get a few more, but we've got three, or maybe four, participants this fall that are for sure going to go, in Maryland. I went twice last year, and, the first time, I had just a little more than what Bubba Gump caught his first time, and so we're all excited.

MR. GEER: To let you know, the average catch from our trips is 645 pounds, and it's day trips, and so it's like -- You know, the biggest catch was 5,250, with a sixteen-foot net, and so it's --

AP MEMBER: How do they make a living doing that?

MR. GEER: I mean, they're selling it to the dealer for $2.50 a pound, and they're selling it off the dock for five to six, heads on.

MS. SOLORZANO: If you've only got to move a few hundred pounds a day, it's -- You all can't go seven days a week, right?

MR. GEER: Yes, they can.

MS. SOLORZANO: They can? Okay. I didn't know that regulation. Well, Florida pretty much just, you know, shot themselves in the foot with any plans of that, because they did away with all the dead bait permits, and there's a few boats that can still go out and drag inside of the one-mile, but, as soon as they croak, it's over, you know, or leave it to one of their young people that might want it, and so you can't do that in Florida. That's not going to work in Florida, and you couldn't go catch rock shrimp, and you couldn't go catch the larger white shrimp, and you couldn't get royal reds. You know, you've got to have the big freezer boats for the bulk of the food chain, for sure.

MR. GEER: Without a doubt. I mean, our fishery is going to evolve over time. I mean, it's in its infancy. If things continue the way they are, you know, we may be going to -- You know, one of the criticisms is why didn't you just let us have a forty-foot net, and, well, if you have a forty-foot net, then you have to put a TED in, to start with. Second of all, if we allowed that, then a lot of people would be fishing in -- It's easy to put a forty-foot net on your boat and go do -- You can tell when someone has this gear on their boat and they're fishing.

MS. SOLORZANO: How do you know they're only doing thirty-minute drags?

MR. GEER: Because we're on the boat with them, and we have law enforcement involved.

MS. SOLORZANO: Who is we, and who is the law enforcement?

MR. GEER: The Virginia Marine Resources Commission.

MS. SOLORZANO: I think I've seen some go a little over thirty minutes, but --

MR. GEER: Yes, and it's the Virginia Marine Resources Commission, and they're limited to thirty minutes. We have talked about putting vessel monitoring on the vessels, mostly just so we can see where they're fishing, but they're adhering to that pretty well.

MS. SOLORZANO: We have VMS on ours.

MR. GEER: We've caught a few illegal people, and, you know it's -- They were out there, and they said, well, I'm anchored right now, and law enforcement said, okay, we'll just wait. It was the middle of February, and it was icy cold, and, after about seven hours, he said, okay, you caught me, and he pulled the gear up, and it was a trawl net, and they took him in.

MS. SOLORZANO: I'm sure the thirty minutes is thirty minutes from the time it hits the bottom and comes up or --

MR. GEER: It's winch start to winch stop.

MS. SOLORZANO: Okay, and that may have seemed why it took longer, to me, because I watched some that were from the time it went down.

MR. GEER: Yes, and it's bottom time.

MS. IBERLE: I wanted to note the letter that you mentioned is Attachment 3c in your briefing books, and so, if you wanted to check that out, we included that for you.

MR. GEER: I sent a letter just very briefly saying what we've done and thanking everybody for letting me be here today.

MS. IBERLE: That's all I had on the fishery performance report questions, and so I thank you guys very much for your time and the discussion that you've had, and so next up will be I will

clean up these unorganized notes that I have taken, and then I will send this out. I think we can take a quick break and transition, but that's up to you.

MR. MERRIFIELD: Sounds good. Let's do a ten or fifteen-minute break, and come back, and then we'll go into the presentation. Thank you.

(Whereupon, a recess was taken.)

MR. MERRIFIELD: Okay. We're going to introduce Robert Dunn here to give us a presentation. Is everybody ready?

MS. IBERLE: I think so.

MR. MERRIFIELD: Okay. Let's get started.

MR. DUNN: Thanks, everybody. I really appreciate the opportunity to come and share some of our research results with you all. There's a bunch of folks in the room that I haven't met before, but I'm really excited to be able to interact a bit, and so I'm the research coordinator at the North Inlet-Winyah Bay National Estuarine Research Reserve, which is about sixty miles up the coast, just north of Georgetown. I'm also a research assistant professor at the Baruch Marine Field Lab at the University of South Carolina's marine facility.

Just so we're all on the same page, the National Estuarine Research Reserve system is a federally-funded partnership with the states, and so there are thirty of these reserves all over the country, from Alaska, Hawaii, Puerto Rico, and all over both coasts. Each of the reserves is structured similarly, in that we have a sort of research coordinator, an education coordinator, training staff, et cetera, with a goal of being a place-based location for research, education, and stewardship of estuaries.

The project that I'm going to be talking about today is funded through the National Estuarine Research Reserve System Science Collaborative, and so these are grants that folks within the reserve system, and external partners, can put in to conduct management-relevant projects in the reserves, based on specific management needs that each reserve decides upon in advance, and so we collectively -- The three reserves in the Southeast put together this Low Country Shrimp Collaborative to get at some of the interesting questions about shrimp population dynamics and habitat use in estuarine systems, and so it's been great to hear the interest in healthy estuaries so far this morning.

This is really informal, and please interrupt and ask questions as we go through, and I can skip some of the detail here, as needed, and it's going to be sort of high-level anyway, and there might be some questions about detail, and so please do let me know.

Just so we're all on the same page, these two species that we're focused on, brown shrimp and white shrimp, have a complex life history, and this particular project is focused on the sort of inshore, in-estuarine life history phases, and so everything from post-larvae that are coming in through the inlets to the juveniles and the sub-adults. Some of our work has included both fisheries-independent and commercial landings data from the adult sector of the population, but,

really, the bulk of our work is focused on post-larvae and the smaller animals in tidal creeks and open-water estuaries inshore.

You know, estuarine ecosystems are productive and highly dynamic. They're critical nursery habitat for numerous species, including the penaeid shrimps that we're here to talk about today, and they're interesting, to me as an ecologist, because the ecosystem functions and services that they provide vary tremendously, both over space and through time, and this picture on the right is of the North Inlet-Winyah Bay system, where I work, and you can see, in the sort of top-right-half of the image, is the North Inlet estuary, and you can tell just automatically, and it's got super green, clear water, and it's highly ocean-dominated. Just to the south is the Winyah Bay system, which is riverine input, and, just from this image, you can see the difference in turbidity between these two estuaries that are connected, and adjacent, right, and these are half-a-mile apart.

The other really interesting aspect, at least for this project, that we're focused on is the salinity gradients that are present in these systems. Winyah Bay goes from basically freshwater, up here around the city of Georgetown, and hopefully you all can see the cursor online as well, and Georgetown is in the top-left of this map, and, you know, we're really low salinity up in the northern-half of Winyah Bay, down to, you know, full-strength seawater out here in the jetties and the mouth, whereas North Inlet is basically a high-salinity oceanic system, almost always, and a lot of the estuaries that we're working in have similar sort of gradients in the environmental conditions that the animals living in these habitats will experience.

As part of that nursery function, estuaries support super-diverse communities, including some of the key players that you will see in the image on the left, but it's important to realize that the habitat requirements for these animals really are species-specific, and so some things prefer higher salinities, and others lower, and some can deal with really low oxygen concentrations, and others cannot, just to provide a couple of examples.

Effective management really requires understanding the impacts of those conditions on these populations and how those scale up to the community level, and we already know that temperature, salinity, nutrient concentrations, and, when I say that, I'm really talking about nitrogen and phosphorous inputs, and they are expected to change, and are changing, as climate is warming, and I will provide some data behind that here shortly.

A few years ago, a group of folks in South Carolina and Georgia got together and wrote a grant proposal to try and understand changes in shrimp in estuaries, in response to environmental variation, due to things like changing climate, specific weather events, and sort of the broader suite of habitat modifications that we're seeing, and so land use and land cover change, freshwater inflow, that type of thing.

We formed the Low Country Shrimp Collaborative, which is a growing group of folks, and I think we're up to twenty, or twenty-five, members now, that range from academic scientists to resource managers, fisheries extension, graduate students, and undergraduates, and we're anchored at the North Inlet-Winyah Bay Reserve and the Baruch Marine Field Lab, just up the road in Georgetown, but we have academic partners at Coastal Carolina University, the two other reserves in our region, Sapelo Island in Georgia and ACE Basin, just south of here, two Sea Grant Extension staff members, Bryan and his counterpart in South Carolina, Jocelyn, and Chip has been heavily

involved, from the South Atlantic Council, and then we have some research and management staffers at South Carolina DNR who are heavily involved.

At the moment, we've interacted with industry folks through Bryan and Jocelyn, and we've conducted some industry interviews, and we're aiming to engage directly with industry folks here as we wrap-up this project in the coming year, and we would love to get as much additional interaction as we can get.

MR. MERRIFIELD: I find that sometimes the fishermen are the first ones to recognize when there's a change occurring, and so, you know, having their input would be valuable.

MR. DUNN: No doubt, and that was a critical piece of this that we wanted to include, and have done some work on, but we can always interact -- We're interested in interacting more, and so our project is sort of broken up into four specific research areas. We've conducted analyses of a suite of long-term time series datasets, everything ranging from water temperatures and salinities, post-larval abundance, juvenile abundance, up to fisheries-independent monitoring surveys targeting the sub-adults and adult phases of shrimp life cycles.

Most of these time series last between thirty and forty years, and so most of these projects got started in the late 1970s and early 1980s, and the group of folks working on this are really sort of the stewards of those datasets, although we have a lot of the original folks also involved in sort of an advisory capacity.

Like I said, we conducted a series of stakeholder interviews with shrimpers in both Georgia and South Carolina, to better understand their perceptions of changing industry, changing environmental conditions, if any, what are their main concerns on a day-to-day basis about shrimping, and how, more generally, researchers could effectively interact and engage with industry folks, and I will provide a few sort of summary take-homes from those interviews.

We conducted a series of experiments, where we manipulated specific shrimp abundance in aquaria at the Baruch Marine Field Lab, and then we looked at the potential for density-dependent growth rates, and mortality rates, in both brown and white shrimp, and then we're conducting a pretty large-scale field sampling campaign that focuses on the zooplankton stage, the juveniles and sub-adults, using a small otter trawl, and the prey base for these animals, and so the benthic critters, worms, clams, small crustaceans, that shrimp eat in estuaries, and we're sampling those using benthic cores. This is happening at all three reserves, at multiple stations within each reserve, to get a gradient of environmental conditions for two summer seasons, basically, six months in 2023 and another six months in 2024.

MS. SOLORZANO: Are these white shrimp you're doing, or are you doing white shrimp and brown shrimp?

MR. DUNN: White and brown, for the most part, for the juveniles and sub-adults, but, actually, I will show some data that, for the post-larvae, we have more pink shrimp, and pinks are the dominant post-larvae in both of these states, but they just don't tend to survive.

MS. SOLORZANO: Okay, and so my question is, if it's summer months, then you're mostly limited to brown shrimp.

MR. DUNN: We're sampling from April through September, and we get quite a few whites in August and September and October.

MS. SOLORZANO: Okay. I was just -- That was my question.

MR. DUNN: I will show you some -- That figure on the right, I'll get a blown-up image, and you'll sort of the numbers associated with both of those species.

MS. SOLORZANO: So you're only doing stuff that is in state waters.

MR. DUNN: Yes, and we're only inshore, and we're not even off the beach, and so we're in estuaries.

MS. SOLORZANO: So you don't have anything that concerns federal, as far as your samples and things, and you're in estuaries.

MR. DUNN: Yes, exactly. I mean, we have access to some data associated with that offshore component, the adults and commercial landings, but to-date -- What I'm going to present today is focused on the estuarine phase. Thanks for clarifying.

This just shows sort of what that field sampling campaign really looks like, and so this is led by two graduate students, Kaitlyn, who is actually sort of illustrated in the top-right there, who is a master's student at Coastal Carolina University, and she's focusing on the benthic infaunal organisms, and then Liam, who is a PhD student at the University of South Carolina, is experienced at collecting small animals using a beam trawl, actually, in Texas estuaries, and so we recruited him to run the field campaign for his PhD research, and he's focusing on the otter trawl and conducting the zooplankton sampling.

We're using different gear types to sample these things, right, and so we use a benthic core to get the small critters in the mud, and we use a twelve-foot otter trawl, and so it's just a small version of a shrimp trawl, pulled behind a much smaller boat, and so we use a seventeen or twenty-one-foot center console to get the sub-adults and juveniles, along with the rest of the animals in tidal creeks. To collect zooplankton, we use what's called an epibenthic sled, and it's very similar to a beam trawl, but with a smaller-sized mesh net pulled along the bottom, and then we're doing some targeted sampling with cast nets, to really get at those popping juvenile shrimp that you noticed in the river in Florida.

We were finding kind of low catches in the otter trawl in the middle of the creeks, and so we started targeting right at the edge, in the one-foot to two-feet of water, where we're able to bump up our sample size for both brown and white shrimp.

Just to kind of illustrate the fact that we are replicating some of the long-term sampling efforts, the picture on the left is two folks from the USC Marine Lab, Dennis Allen and Paul Kinney, who really kicked off a lot of the work locally here, and you will notice that net that they're using, and that's the same net that Liam is using in that bottom-right image, collected just this past summer, and so that's our epibenthic sled pulling in a sample, and, in some cases, we're actually using the

same vessels that have been used since the late 1970s, and so the methods here are highly replicable through time.

All right, and so, jumping into some just results, and I'm skipping a lot of detail about how a bunch of these data were collected, but, please, if there are questions, interrupt and ask. I've been working with a graduate student at USC to analyze time series of environmental conditions in these three estuaries, the North Inlet-Winyah Bay system, the ACE Basin, and the Sapelo Island estuary. We're using the National Estuarine Research Reserves System-wide Monitoring Program data, and so this is a standardized, replicated water quality and environmental monitoring program across all the NEER sites.

We use what are called data psalms, and these are autonomous, in-situ loggers that take measurements on everything from dissolved oxygen, salinity, temperature, to chlorophyll-a concentrations and a few other parameters.

We fit a bunch of models to these data, and I'm just showing just one example of those here, and this is temperature from the North Inlet, from one station within the North Inlet estuary. That small map on the left shows a blown-up version of each of the three reserves, where we have stations based across the salinity gradient in each of these systems, but what we're seeing, really, is that, in terms of temperature, all of these stations, all eleven sites that we're working with, show an increase in temperature over the past fifteen to twenty-five years, depending on the length of the time series. We can also --

MS. SOLORZANO: How long have you all been doing this? Thirty years?

MR. DUNN: So it varies by station, and some of these were established in 1995, officially, and that's where we've started this particular analysis. We have some more historic data, going back in the late 1970s, that show -- Or even earlier, in the case of Charleston Harbor, that show similar increases, at least in terms of temperature.

We've also broken this down by month, and so, instead of pooling across, or looking at this through time, you can pull individual months, and look at the specific trends by month, and we see, similar to what Pat mentioned earlier, an increase in winter temperatures, and we're seeing that strongly here, and so December through March is when most of the increase is happening. The summertime is a much more mild increase.

The general trends that we're finding across the four parameters that we looked at, which are temperature, dissolved oxygen, salinity, and chlorophyll-a, is that winters are warming fastest, and the temperature is increasing across-the-board. As a function of that increasing temperature, dissolved oxygen is going down, but not to the degree that it's degrading water quality. Salinity trends are much more variable, both across the three estuarine reserves and within an estuary, and so some of these stations are much more influenced by freshwater input from rivers, whereas others are much closer to the inlet and experience relatively stable salinities.

Then, interestingly, the primary production, meaning how much photosynthesis is happening in the water column by phytoplankton, it tends to be increasing at two of these sites, in the North Inlet and Sapelo Island, but is much more variable at ACE Basin, and we're trying to sort out why that might be the case.

This is mirrored by trends that are happening in estuaries all over the U.S., actually, and so I'm currently working on a much bigger synthesis of these same types of data from our SWMP system-wide monitoring program data from 105 stations, located from Alaska to Puerto Rico, and we see similar increases in temperature and general increases in primary production of chlorophyll-a concentrations all over the U.S.

That's -- You know, the point being here is that the animals in these estuaries are experiencing potentially, you know, unique, new conditions relative to say before the year 2000, when the environmental conditions tended to be sort of less variable on an annual scale, and also just lower temperatures, particularly in the winter.

MS. SOLORZANO: (Ms. Solorzano's comment is not audible on the recording.)

MR. DUNN: In the winter, we're seeing warmer temperatures now than previously.

MS. SOLORZANO: Some winters not necessarily, because we had some cold winters, that they actually closed these areas due to cold, and so I'm sure there's a fluctuation.

MR. DUNN: Sure, and, I mean, there's interannual variability in all these things, and we're looking at sort of the mean trends through time. We started with the environmental conditions, and now I'll kind of -- I'm going to move sort of through the life history of these animals, and so we'll look at the post-larvae, and, again, these are the animals that have come in through the inlets, but haven't yet recruited onto the bottom, and so these aren't benthic yet. These are floating around in the water column, and sample these, again, using that epibenthic sled, which is a smaller version of the beam trawl.

These have actually -- These data have been collected using the same vessel, the same sled apparatus, since 1979, and what we're looking at here is 1981 to 2017, and, every two weeks, someone from the Baruch Marine Lab has gone out and pulled a series of these sled samples and then picked all the small post-larvae at the microscope, and so this is a ton of work by Dennis Allen and some of his colleagues.

We've looked at each of the three species individually, as well as just pooling all the species together, and I mentioned this before, but, really interestingly, pink shrimp are the most abundant of the post-larvae, and we don't find those in any real numbers at the juvenile or sub-adult life stages. In South Carolina and Georgia, we don't have seagrass, and so that's potentially playing a role. Pink shrimp do pretty well south of us and north of us, where seagrass beds are more abundant.

The trends through time are sort of a mild increase, at best, and mainly only for white shrimp, and so, when we look at either pooling all the species, or the browns and pinks individually, there's no statistically distinguishable trend over time, and white shrimp, again, have a sort of very subtle increase, and it may be driven by that one really bumper year in 2013.

We've also looked at these in terms of their seasonal distribution, and so these three species come in at different times of the year as post-larvae, and that's reflected in the time of year that you would see the juveniles and in the time of year that you would be catching them offshore. I'm not

presenting that data, but I think I have a slide here at the end, if anyone is interested in seeing it broken down, sort of on an annual basis, what those distributions look like through time.

Another way to look at these data is just based on sort of the effects of temperature regime on post-larval abundance, and so I apologize for the small text, but I will walk you through these panels. Again, the top-left is all the species together, and the browns are on the top-right, and the whites are on the bottom-right, and the pinks are on the bottom-left.

This is abundance of zooplankton, and the blue lines represent cold winters, and the red lines represent warm winters, and what we see is that browns tend to like the cold winter conditions, and they do well earlier in the year, whereas, later in the year, when the whites are coming in, they tend to do well when winters were warmer, and so perhaps this isn't surprising. We know that cold winter conditions impact the spawning stock for the whites, but it's nice to see that that's reflected in the post-larval abundance later on in the year.

Another way to look at these data is in terms of the timing that they're coming into the estuary, and so these figures show the mean day of year when we are catching zooplankton in our tows, and, again, the same setup, where all the species are pooled at the top-left, and then they're broken down by species in the other panels, and what we see is that, during warmer years, and this is not just winter now, and we're looking at the annual mean temperature, and the post-larvae tend to come into the estuaries earlier in the year, and so the slopes of these lines, going down from left to right, indicate earlier ingress into the estuary during warmer conditions.

Again, we looked at these data in a bunch of other ways, and I'm happy to talk about those, if anyone has questions, but the take-home message here really is that the post-larvae are maybe not trending in any real direction over the course of this thirty-seven-year time series, again with maybe a moderate impact on white shrimp, but that the environmental conditions can play a role in sort of interannual variability. That sort of year-to-year variability is highly dependent on often the winter temperatures that they're experiencing.

I just talked about one aspect of phenology, but I'll talk a little bit more about that coming up, and so, to make sure we all know what I'm talking about, phenology is really just the timing of some event for an animal or a plant, and so we often think about this in terms of major life history events, like birthing or nest hatching for birds, or blooming of flowers, and we can look at that in a couple of ways.

The ways that we have -- The metrics that we've chosen to utilize here are the timing, which is just the date when some event occurs, or the synchrony, meaning the spread of the dates at which that event occurs, and those things are important, because changing timing, or synchrony, can influence resource availability for predators or prey, the interaction between those different predator and prey species, and, ultimately, potentially influence harvest. If animals are coming in, or leaving, earlier or later, that's going to impact the fishery in a real way, down the line, when those animals move back offshore.

The sort of classic way that people have been interested in phenology is looking at bloom timing, and this is an example for the Japanese cherry blossoms, that, over the last 150 years, the day of year when those trees are blooming is rapidly earlier, and it's increasing rapidly, and we can use sort of similar metrics to look at habitat use, for example, and so what we've done here is taken

that same close to forty-year time series, and, instead of looking at the zooplankton, now we're going to shift into the sub-adult and juvenile phases and look at time of year that they're utilizing tidal creek habitats in the estuary.

We evaluated this thirty-eight-year time series, where juveniles and sub-adult brown and white shrimp were collected from the same creek basin in the North Inlet estuary, and the circle in the map is the Baruch Marine Field Lab, and the yellow circle is the creek basin, the sampling location for this time series, which stretched from 1984 to 2022, for this particular dataset. Again, every two weeks, folks from the Baruch Lab have gone out with either a beach seine or a block net and sampled this same stretch of tidal creek, and we're using those data, for brown and white shrimp specifically, to look at changing in arrival time, or size, or the extension of that nursery habitat use period.

This will -- Hopefully these figures will speak to some of your questions about timing. Using that thirty-eight-year time series, we plotted out, you know, all years combined, and what see is that the brown shrimp come in earlier, and they start coming in in April, and they really peak in May and June, but are leaving by July, and the white shrimp really don't appear until June, but then they peak at higher abundance, and they stick around for sort of a longer period of time, and they're in until really usually about November.

One the bottom is the total catch from these surveys in every year, and you will see, again, that the white shrimp are more abundant, on average, but, interestingly, the peaks and valleys for these two populations tend to correspond, and so there's something going on that leads to the high abundances and low abundances in the same year for both browns and whites.

From there, we can calculate various metrics about the phenology, meaning, again, the timing of habitat use, and what we found, interestingly, is that brown shrimp are not exhibiting any change over time in their phenology, and so the top sets of panels is the timing, when they're utilizing tidal creek habitats, and the C and D panels is the synchrony, meaning how compressed or extended their use of those habitats is, where numbers close to one would be like all the animals coming in on the exact same day. Numbers closer to zero would be uniform entry into the estuary, or into the tidal creeks, across the whole year, and, in general, for browns, and whites, to a degree, their duration of habitat use -- The synchrony of their habitat use is pretty high. They're all kind of coming in within a one to two-month period, on average.

Then the bottom panels -- I will skip the duration, and it's very similar to the C and D panels, but the bottom, G and H, we've looked at the mean size of these sub-adult -- Again, these juvenile and sub-adult animals during their month of peak abundance, and, for brown shrimp, that isn't changing through time, but white shrimp really is. They are getting bigger, or we're catching them at a bigger size at least, in the more recent years of the time series.

For white shrimp, it's, again, a different story. Their phenology, meaning their habitat use timing in tidal creeks, is changing over time, where they're extending the time that they're in the creek, and they tend to be larger when they're in there as well, and that could be for a few different reasons. Are there any questions about what I mean here? I mean, this is -- I've taken a few logical leaps, that I skipped a bunch of details, right, and I'm happy to talk more about that, if there are questions.

We did some additional modeling, to look at like what are the exact environmental drivers of timing, synchrony, and duration, these phenological metrics, and what see is that, for brown shrimp, it really is the salinity of the creek and the number of consecutive days below eleven degrees during the previous winter that determine the sort of interannual variability in the timing of brown shrimp habitat use, and the Venn diagram here just indicates that those two metrics, nursery salinity and consecutive days below eleven, were important to each of those three metrics, and not necessarily equally important, but that they were retained in the model describing those data. We initially incorporated about twelve environmental parameters, you know, to look at which of those might be useful, and this is sort of the -- These are the results of the final models that were retained in our analysis.

White shrimp is, again a different story. There were no single environmental condition that was retained for all three of these phenological metrics. We did see the same conditions popping up again, the consecutive days below eleven and then the nursery salinity, but, overall, the results for the white shrimp modeling were much less clear. The models were fit poorly to the data compared to the brown shrimp, and the actual environmental conditions that seemed to be important were kind of all over the place. There are definitely species-specific differences in how these animals are responding to sort of some of the environmental conditions.

MR. MERRIFIELD: Is that significant towards -- Does that imply resilience in the white shrimp, or is that -- You can't really point to that?

MR. DUNN: That's a good question. I don't know that it's -- It could be. I wouldn't rule that out entirely. I think what's contributing a lot here is the time of year that brown shrimp are coming into the system, compared to the time of year that white shrimp are using estuaries. You know, brown shrimp will come in once the water warms up enough for them to use that habitat, and when salinity conditions are right, and salinity is minimized, in these three estuaries, during, you know, spring rain, winter and spring rains, February to April, and so salinity is a big driver of their habitat use.

Part of that is really what we're looking at here, the differences in the species -- You know, this isn't abundance. This is their habitat use timing, and so I wouldn't want to put too much stock into what this means for the population as a whole. We're not accounting for abundance at all here.

All right, and so that was just a snippet of the time series analysis we've done, and there's a lot more there, and I'm happy to sort of go through some of the details of any of those other analyses, if people have questions about the other long-term datasets that we're working with, but, if not, and find me later, if you would like to, but I'm going to move into some of the stakeholder interview results.

Really, Bryan could speak to this a lot more effectively than I can, and I'm summarizing a bunch of the work that he and Jocelyn Juliano, from the South Carolina Sea Grant consortium, did. Our interaction with the industry folks is really emphasized, or motivated by, the NEER's emphasis on end-user-driven and management-relevant research projects. The goal here was to assess perceptions in the industry of trends in harvest, changes in effort, under the umbrella of poetically changing environmental conditions.

The areas of interest that we were particularly concerned with were -- Again, it's environmental changes, potential changes in the shrimp biology, or disease, modifications to operations in the industry, like fishing location, timing, and then how we, as sort of researchers and resource managers, might be able to better communicate with the industry about environmental conditions, best practices, et cetera.

We spoke with twelve commercial shrimpers in South Carolina in Georgia who had experience in the industry ranging from ten to fifty years, with nearly 400 years of cumulative experience, and so a nice set of folks, with a lot of time out on the water, and eight of these twelve were either captains or co-captains and owners of their vessel, and a couple also owned the either dock or processing facility, and the other four were currently captains, but not owners, and then half operated primarily in the home-state waters, and not just state, but either state or federal, with six traveling, you know, from North Carolina down to Florida, depending on conditions and the time of year.

I am not going to read all these, and I will leave this slide up, so that people can read them if they would like, but they kind of -- These are quotes from the shrimpers that we spoke with, and I have bolded some of the kind of recurring themes that came up again and again. You know, temperature is pretty critical, size of animals, and marketability of small shrimp came up repeatedly. We heard a lot about sharks, and we heard about milder winters and how folks were able to be out on the water more more recently, and blackgill came up, and then, interestingly for us, and importantly for us, to know that it was really the sort of socioeconomic factors driving the decisions to go out and fish.

Environmental conditions, while shrimpers have a strong understanding of what that means for their catch, they were not sort of top-of-mind on a day-to-day basis in deciding whether or not to, you know, put out and try to put in some effort for that particular day or week or month, and we heard that when we asked the specific question about your top-three concerns today, versus ten years ago, and most of those are socioeconomic, things like operating costs and fuel prices, and we've heard a lot about competition with imports and low prices for local products. Sharks, potential conflicts with renewable energy, and we really only heard one reference to sort of fewer shrimp being available out there, and that is backed up by a lot of what I think we've heard today, and what a lot of the fisheries-independent survey data are showing, that reduced effort is playing a big role in sort of the lower landings. I'm happy to talk about this more.

MS. SOLORZANO: The lower landings are due to the fact that you can't afford to go out, and it's not that the shrimp aren't there.

MR. DUNN: Right.

MS. SOLORZANO: That's what I think you just said.

MR. DUNN: We would love to hear from other folks, or interact, I should say, with other folks in the industry, if there's anyone that wants to get in touch and chat, and my contact information is at the end of these slides, and please do reach out to me, or Bryan, or Jocelyn, and Chip is also on our team, and so we can get in touch. Anything you wanted to add, Bryan?

MR. FLUECH: Yes, and I was just going -- I mean, obviously, this is not a comprehensive, you know, survey with the shrimpers, and they're qualitative, and so more open conversations, but it's actually paired really nicely with the comments that you guys have provided, especially in the conversations yesterday, and so we hear a lot of the same things, and so it was interesting. You mentioned about the whiting, and that did come up, and I think -- Was it Nancy that mentioned crabs? We heard -- We had some that actually said the same thing as Nancy, and then we had a few that were the complete opposite, where they had not seen any crabs, and so it was interesting to see the differences on that one, but whiting did come up.

You know, I think, at the end of the day, a big take-away too is just -- One of my favorite quotes was you've got to risk it for the biscuit, and just the idea of adaptation, and, I mean, they're fishermen. This is something they always have, and always will do, and, I mean, it's something that's in their blood, which is exactly what we've heard before, but I think this is something that I have tried to convey, as far as research. When we're looking at it, you know, in the context of climate change, it's not, you know, at the end of the day, like we're too busy with all the other things to be worrying about that.

It's not that they didn't acknowledge it, and we didn't get into manmade or natural, and we didn't go there, and, for the most part, I think everyone that we talked to, with the exception of I think one person, said we're seeing changes, and we've seen changes, and I think this is the value of working with fishermen, because they're the first to see it. They're out on the waters, and it's just, at the end of the day, they have adapted in the past, whether they were economic factors or other environmental factors, and they will continue doing that, but I really did appreciate the insights that they had provided, and just kind of seeing differences between what we heard in Georgia and South Carolina and similarities.

MR. MERRIFIELD: I think prediction of abundance would be great, if you can get to factors that you can say we're going to have a good year, or we're going to have a bad year, and, at some point in time, if we ever get to the point where we're doing something like tariff quotas, or something like that, where we're going to determine how many imports we're going to allow at a lower tariff rate this year, to supplement the domestic production, this would be -- This could go into that and somehow help generate information to go into that equation, and I see a real benefit there.

MR. DUNN: So one thing that I'm not going to talk about, because we really haven't gotten to it yet, but our goal is to try and integrate some of the long-term datasets, to be able to look at, you know, how does abundance of post-larvae translate to the juvenile and sub-adult phase, and how does that scale up to the adults that are caught in the fisheries-independent surveys and then how does that translate into landings, and which of those environmental conditions might be important to each of those life stages.

We're actively working on that this summer, and we've hired a statistical consultant to work with us to try and massage those datasets, to be able to interact better, but that sort of thing -- Not that we're going to be able to necessarily predict, you know, abundance of adults in a given year, because -- Mainly because of how time consuming it is to get those zooplankton samples counted up, and you just can't do it fast enough to be able to make a prediction for that year, and we might be able to look at some of the environmental conditions that play a really key role.

MR. MERRIFIELD: On the pink shrimp, is that -- Those are actually collected samples, and that's not based on landings, right, when you see --

MR. DUNN: Yes, and so the pink shrimp that I showed here -- Those are the zooplankton, right, and they're microscopic. We do catch some pink shrimp in our seines, in our trawls, in very low abundance, and, to be honest, they're hard to ID in the field, and we don't see them enough to know what we're looking at, necessarily, and so we probably are misidentifying a few of them, unless they have a very obvious spot on the tail, and, in any case, browns and whites are the dominant, dominant catches.

MR. MERRIFIELD: Because, in landings, we really don't report pinks on the east coast, because -- They're in with the browns, and so you're just reporting browns, and nobody is separating or taking an estimate of what percentage of those are pinks, and, every year, with the rock shrimp fishery, we get a large number of browns that are out there with the rock shrimp, and there's a lot of pinks in with those and they're the U10 pinks, and so somehow they're getting out there and surviving and growing, and they're huge, and it's a very valuable product.

MR. DUNN: Interesting. All right. I'm going to -- So I will breeze through some of this. We ran some manipulative experiments at the marine lab, and this is a great way to get students involved, and so we interacted with probably ten or twelve undergrads, and a few graduate students as well, and the motivation here is that overlap period in the estuaries, when browns and whites are both occurring in the tidal creeks during the months of June, July, and August.

The other thing to consider is that white shrimp and brown shrimp have different salinity preferences, and so whites are much more generalists, and brown shrimp tend to prefer the higher-salinity conditions, and that's important, because, if we see changing salinities in our estuaries, we might get changing abundance of animals moving in response to those salinities, whereas their prey, the infauna, the clams and small worms and crustaceans, really can't move at the same scale that the shrimp can, right, and so we might see increased competition in the creeks, or in the estuaries, as a function of changing salinities.

We actually did some PIT tagging of these animals, and we put in a microchip, just like your cat or dog has, into the muscle, so that we could identify individual shrimp through these experiments, and we generated a little proprietary feed, if you will, and we gave each of the treatments the same exact amount of food, so that we could actually identify the potential for competition between these animals and how different densities of browns and whites might impact their growth and their mortality.

Again, we collected these in the creek with the seine net, and what we find is that brown shrimp, when they're by themselves, and so in monoculture, tended to exhibit what we call density-dependent growth, meaning, at higher densities, they grow slower. On the other hand, white shrimp really didn't exhibit that same density dependence, at least at the densities that we were working with here, which are naturally occurring, and there are not relevant densities. Go ahead.

AP MEMBER: (The comment is not audible on the recording.)

MR. DUNN: That could be, and a lot of the work that we drew on here was based on the aquaculture literature, where there's a lot of interesting results about food types and stocking densities at different life stages and that sort of thing.

Then, when we put them together, and so, again, this mimics that sort of June and July period in the tidal creek, things got pretty weird, and they didn't put on much mass, and, as you can see, actually some of them lost weight over the course of these fifteen-day experiments, and we think this is really a function of stress, and so being together with the other species, and they're more vigilant, and they're not eating as much. They're then not molting as much, to grow, and so the main source of the mortality we think here was cannibalism, which happened when they would molt, and they would get soft, and they have nowhere to go and escape, and so they get eaten by their counterparts in these aquaria. We actually saw much lower mortality in the overlap experiment than in either of two monoculture experiments, when the shrimp were just separated by species.

AP MEMBER: (The comment is not audible on the recording.)

MR. DUNN: There was lower mortality in the overlap experiment, again I think because there was less cannibalism, but that's a hypothesis. We also looked at the size, and I'm not going to show the figures, but the key take-home there is that size is really critical. The smaller animals were more likely to die, over the course of these experiments, than the bigger ones, and the larger brown shrimp tended to outcompete the smaller white shrimp for feed, and that's, you know, the naturally occurring process, right, and the brown shrimp are in the creek earlier, and they're larger when the whites start recruiting in.

Again, there's more here, and I'm happy to answer questions, if there are any, but I'm just going to keep moving to talk a little bit about our field campaign, and so, again, this is what we've been doing during the summer months, April through September, at those three reserves. We're sampling at four stations in the North Inlet estuary, three in ACE Basin, and three at Sapelo Island. Again, this span the salinity gradient in these systems. We're pulling a small otter trawl monthly, and all the catches are identified to species, and a subset of animals are measured.

To-date, or through 2023, we pulled 180 trawls, and we collected over 9,000 animals, including four elasmobranchs, eight-ish decapod crustaceans, and we're not exactly sure on one of the species identifications for an invasive crab, one cephalopod, and then nearly fifty different finfishes.

This is just the top-five species at each of those three reserves across those all 180 trawls, and we see, not surprisingly, bay anchovies are the most abundant, and this is just number caught in the trawl, and not biomass, but, critically for us, white shrimp is one of the top species across all three locations, and brown shrimp were quite abundant in the ACE Basin reserve, and we were catching whites and browns across all three places, and at most of these eleven locations, but I will explain this here briefly.

What I'm showing here is the community composition across these eleven sites, and this is all of the sixty or so species, and the point here is just that dots closer together are more similar in the community of animals at each of those locations, and what really seems to be driving that is the salinity of the creek.

Some of the other physical parameters, like temperature, depth, and dissolved oxygen, which we were measuring, didn't appear to be all that important, whereas salinity, we think, is really driving it, because these three sites here on the left-hand-side of the panel are all of our riverine-dominated lower-salinity sites, and so everything over here is sort of more similar together, in terms of community composition, and that's sort of our brackish community, and all the other eight locations are pretty high-salinity ocean-dominated.

This suggests that the site-specific physical abiotic characteristics are probably more important than geographic proximity, because the yellow here is in ACE Basin, and the green here is in North Inlet, and so it's really the sort of location-specific physical conditions that are important, at least at the scale that we're talking, right, and this is still in the South Atlantic Bight, and you have a generally similar species pool overall.

MS. SOLORZANO: Are you doing these samples on the same tides or different tides?

MR. DUNN: Good question. This is all -- The tide could be rising or falling, but it's all around low tide, and so we're working only when the water is off the marsh platform. We're pulling into the tide, no matter what, but the tide itself could be rising or falling, and so we're within about an hour-and-a-half of low tide.

MR. VOGELSONG: Yes, because, a lot of the time -- You know, some of those shrimp will come unburied, you know, at the first of the rise, and the last of the fall, and, you know, different stages of the tide will affect when the shrimp decide to unbury and start swimming around.

MR. DUNN: Yes, and so we're tried to standardize, to the degree possible, given how many sites we're trying to sample, and how many trawls we're trying to pull in a four-hour period, but the water is always off the marsh platform, and we're always pulling in the same direction relative to the water movement. We're getting fewer shrimp in these trawls than we sort of expected, and that's why we've started throwing the cast net. The graduate student, Liam, working on this is quite good at the cast net, and we're able to standardize that, to the degree possible, to try and actually use sort of quantitative -- To be able to develop quantitative metrics associated with the cast net catches, and we were able to up the sample size for shrimp, using the cast net relative to the trawl.

MR. VOGELSONG: Yes, because, I mean, you know, shrimp is funny. You know, I can pick up in one spot, and not have caught anything, and someone will come right behind me and set out, and being thirty or forty-five minutes later, and the shrimp will just be knee-deep there, and, you know, like I said, if they were always here, and always going and active, we would always be showing up.

MR. DUNN: Yes, and that's good to know, and that reflects a lot of the impressions that folks have, working on mainly fishes in these estuarine tidal creeks, but, you know, shrimp is part of that same community, and it is highly variable, even if the estuary, and so it's interesting to hear that you all are seeing the same thing in the sort of offshore component.

I am running out of time, and I will mainly just briefly skim through this, and this is my last sort of study that I wanted to talk about, but we used, again, sort of high-resolution field sampling in a

tidal creek, to try and estimate habitat use within some sort of very specific estuarine features, and, within estuaries, it's not uniform. We have marsh pools, and there is the marsh surface, intertidal creeks and subtidal creeks, and the animals use these different habitat types in different ways, and we're lacking sort of habitat-specific information on things like growth rates, particularly in the Southeast.

What we did was go out and sample a tidal creek, twice a week, or more, and even up to three times a week, for about a ten-week period over the summer, to try to estimate very specific growth rates in a habitat type for brown shrimp, and this is just a plot showing the size over the course of the summer, from mid-May to late July, where the animals start coming in at around thirty-five millimeters total length, and these are, you know, two-inch or three-inch shrimp, and then they basically peak and exhibit a steady size limit, until later in the season, when they start to move back offshore, or back out of the smaller creek, and the white shrimp start to come in.

We compared those rates with previous studies on brown shrimp growth from the Gulf and the Southeast in different habitat types, and we found that our growth rate estimates of one to one-and-a-half millimeters a day, and those were collected in, again, different habitat types, using different methods, and our estimates of growth, during that May to June period, aligned pretty nicely, right, and so one to one-and-a-half millimeters a day of growth in the tidal creek, across the general range of these animals, seems to be a good estimate, and this is important, because these can be used down the line, in population dynamics models, to look at, you know, how long is an animal that's been in a tidal creek -- How big is it going to be when it leaves that system, and moves offshore, or moves into the open-water estuarine habitat nearby. Again, this is just sort of an example of the type of work that we're doing for the estuarine phase of these species.

Again, just to wrap-up, we've got a number of projects going on associated with this larger collaborative effort focused on the estuarine phases of shrimp, and, again, please reach out if there's any interest in engaging with us directly, if you have specific questions about research ideas that we might be interested in pursuing, or that you all think should be pursued, and we would love to hear and chat about those, and you might see us out in the field. We've got team hats, and t-shirts, and Bryan has got some of those to give to our participants in the interview process, and there's my contact info, and I'm happy to take any more questions, if there are any.

MR. MERRIFIELD: Thank you, Robert. That was a lot of information there.

MR. DUNN: Yes, it was a lot, and thanks for having me. I tried to make it as high-level as possible, but I realize there's a lot of detail there.

MR. VOGELSONG: Well, one quick question though, Robert. Are you all getting grants to do the studies, or is this your, you know, basic job for weekly pay?

MR. DUNN: That's a good question, and so, yes, this is a grant-funded project. This is a three-year award through -- It's ultimately funded by NOAA, and I have a lot of other day-to-day aspects of my job, but the graduate students associated with this project are funded almost entirely on this grant, and so their master's research, or PhD dissertation, is highly dependent on the grant to support it.

MR. VOGELSONG: Yes, but the thing that it is -- Like, okay, I get everybody there has got a degree and went to school to do this type of thing, but, you know, hands-on experience is, I find, more beneficial than reading something in a book, but, I mean, I get that you're getting out there, and you're doing it, and that's great, but have you all ever thought about bringing on, you know, people that have experience in the industry, that do this type of work, to go with you all?

MR. DUNN: We have done that, to a degree. We work with a couple of local guys on the north coast of South Carolina that come out, and have come out, on our trawl sampling days with us, and we're happy to engage more in some of that collaborative research, if you've got specific contacts for us.

MR. VOGELSONG: Yes, and I was just curious, you know, because, I mean, you couldn't just pick somebody off the street and tell them to come out here and drag around. I mean, yes, they can probably follow a plot line, but, you know, having, I guess, an instinct on, you know, how these things would move, and how they would react, and also in setting your equipment. That has a lot to do with these things, too.

MR. DUNN: Yes, for sure. I mean, we worked pretty extensively with experienced folks, working either from the DNR or from the USC Marine Lab, who have been pulling trawls in these creeks for forty or fifty years, and so we're doing our best, but we're happy to, you know, interact with anybody who knows what they're doing, for sure.

MR. MERRIFIELD: Okay. Thanks again. How are we doing on time?

MS. IBERLE: I think we're good, and I don't want to cut off discussion, but I am not seeing any other hands online, and, if you're good to break for lunch, and then I don't know -- It's up to you guys for how long of a lunch you want to take, because I know you have a hard stop at 5:00, and I want to make sure we get in the rest of the items, and so it's up to you, Chair.

MR. MERRIFIELD: Okay. Let's go ahead and a lunch break. Can we do an hour? Is everybody okay with an hour for lunch? Okay, and so we will take a break for lunch, and we'll be back at 1:00. All right. Thank you.

(Whereupon, a recess was taken.)

MR. MERRIFIELD: Okay. We're going to go ahead and get started, a few minutes late, but we're going to proceed with the giant manta ray biological opinion by Jennifer Lee.

MS. IBERLE: All right, Jenny. I'm going to pull your presentation over, really quick. How does that look?

MS. LEE: That looks good. Thank you.

MS. IBERLE: You can just lead me through, if you want.

MS. LEE: All right. Excellent. Probably the first thing I should do is just point out that hopefully no one was too alarmed by the description there in your briefing material there, or agenda, and I'm not leading you through an actual new biological opinion on manta rays, and so I just wanted to

make sure that no one thought that. What this is is an update on our reinitiation of the shrimp biological opinion, because of some triggers for giant manta ray and sawfish, and so the focus here is just to kind of catch you up on some information.

I will just walk you through what I'm going to do. I'm going to just remind you of your 2021 biological opinion, explain why we reinitiated, some of the requirements and background there, give you a little information about giant manta rays, the species, because it's, you know, relatively new, in terms of being a listed species, and we've been learning a lot, and I'm not sure sort of how much background you have about that species.

We're going to then focus on getting into the giant manta ray with respect to trawl effects, and so the bycatch data, the new information, and you do know more about smalltooth sawfish, I think, but we'll have one slide as just kind of a catch-up on some basic information about sawfish, and then we'll proceed with a summary, or I want to give you a feel for some of the new information on smalltooth sawfish that we have, that wasn't considered in the bi-op, and then we'll just talk about next steps and timing, and then I just have a little slide as far as the release condition, and so that's kind of what you can do now.

I do want to note that this is -- We reinitiated, or we discovered the need to reinitiate, back in really last summer, and so the South Atlantic Fishery Management Council got a presentation in September. The Gulf had a presentation in the month before, and we talked in October, and then again in March, with the Gulf Shrimp AP, and so you're kind of in a unique position here, in terms of we're coming to you now to catch you up on this information, if you haven't been following it, and then we also -- I have updated this presentation with some of our newer information, and so you're sort of the last in the cycle, but also the first in terms of some information.

All right, and so let's get started. This is just, again, a reminder that we do have a 2021 biological opinion that's comprehensive, and it analyzed the effects of the TED regs and the authorization of Southeast shrimp fisheries under the Magnuson-Stevens Act. It determined the proposed action is not likely to jeopardize the continued existence of sea turtles, sturgeon, giant manta ray, and smalltooth sawfish, and then we issued an incidental take statement with that, specifying the amount of anticipated incidental take for listed species.

We did that over a five-year monitoring period, and I'm highlighting for you here just the giant manta ray and smalltooth sawfish five-year takes, because that's what we're focused on here, and so these estimates were highly uncertain. The smalltooth sawfish were extrapolated from seventeen sawfish captures over twelve years, and we assumed a 50 percent mortality rate. The giant manta ray take estimates were extrapolated from eight captures in a single year, and then we had no giant manta ray mortalities were anticipated at the time, because there weren't any lethal records at that time.

I am hoping that most of you are familiar with what a Section 7 consultation is, and, you know, it's our documented exchange of our action, and how it's impacting listed species, and that biological opinion that I described, again, was the comprehensive most recent biological opinion, which is that end product of a Section 7 consultation, and so here I have some reinitiation requirements, and this just explains why, or when, we need to go ahead and revisit a biological opinion, and work through the process again, and so there's really four basic reasons.

There is the amount, or extent, of take specified in that incidental take statement is exceeded, new information reveals effects of the action that may affect listed species, or critical habitat, when designated, or to an extent not previously considered, the identified action, and so kind of your fishery management actions, are subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in the last biological opinion, and then, if we have a new species that's listed, or critical habitat designated that may be affected by the identified actions, and these are all reasons why we might revisit the process.

SERO has determined, or the Southeast Regional Office, that at least one, and, actually, really two of the four conditions requiring reinitiation of formal consultation have been met, and so first up is the amount, or extent, of the taking specified in the incidental take statement is exceeded, and so I had mentioned -- The reason why I wanted to give you that background on the 2021 shrimp opinion is that, since that opinion was completed, we do have giant manta ray mortalities that have been observed.

The lethal takes have only been confirmed in the Gulf of Mexico, but we also do have records in the South Atlantic region that include giant manta rays caught where we didn't know the disposition, and so we are recognizing the need to look at the entire scope of the bi-op, and not just say the Gulf, but it's Gulf and South Atlantic that we're looking at.

Then the second part is that new information reveals effects of the action that may affect listed species in a manner or to an extent not previously considered, and so, here, again, that recent take data in itself may constitute new information, revealing effects of the Southeast shrimp fisheries on giant mantra rays not considered, because, you know, now we're realizing that we do have mortalities, but we also just have a new publication that contains information that we feel reveals effects of the Southeast shrimp fisheries on giant manta rays and smalltooth sawfish that weren't considered in that 2021 shrimp biological opinion.

One thing I do want to make sure to point out is that, at this time, we don't have any triggers met, at this time, for any of the other species, and so, right now, we're limiting our consultation to addressing only the giant manta ray and smalltooth sawfish and their management under the Gulf and South Atlantic Shrimp FMPs and implementing regulations, and so that means we're not, right now, revisiting sea turtles, for example. We're still monitoring the take, and following our incidental take statement, of course, but we haven't triggered where we need to redo analyses at this point.

I said that I wanted to just share a little bit about giant manta rays, and I don't know how much you know about them, and they're actually pretty fascinating, and we've been learning a lot, and so adults typically have a wingspan that reaches about thirteen feet, and so four meters. The larger animals have been reported up to twenty-nine feet, and female manta rays are believed to reach sexual maturity at about eight to ten years old.

They tend to give birth only once every two to three years, and they have a pregnancy that lasts about twelve to thirteen months, and so they have a long lifespan, and time to maturity, and they have low reproductive rates, and so meaning that a female will be able to produce only five to fifteen pups in their lifetime. We do know a little bit about at least a couple of their nursery areas, one in the Flower Garden Bank National Marine Sanctuary and then off coastal southeast Florida.

They were listed due to significant declines in abundance, particularly from overutilization in the IndoPacific and the eastern Pacific portion of its range. We listed them back in 2018, and so, again, overfishing and bycatch were major threats contributing to their decline, and then we just talked about how they have low reproductive output, and so making them inherently vulnerable to depletions, with low likelihood of recovery.

In terms of what we know about their population, we have a global population of the size of giant manta rays is difficult to assess. In most regions, giant manta ray populations appear to be small, maybe less than a thousand individuals, and we do have three published regional total abundance estimates, and that's in Mozambique, with 600, 1,875 in Raja Ampat, and 22,000 in Ecuador and Peru, and so those are, you know, our larger populations. Ecuador is thought to be the home of the largest population of giant manta ray, with large aggregation sites within the waters of Machalilla National Park and the Galapagos Marine Reserve.

If you're wondering about, you know, here, we do -- We don't have any published estimates. We have some preliminary relative abundance estimates for giant manta rays in the northwest Atlantic and Gulf of Mexico U.S. that might suggest an abundance ranging from approximately 5,000 to 14,000 individuals, but that is not -- Again, it's not accounting for available bias, and so preliminary satellite tagging returns from nine individuals suggest that manta rays in the Southeast may spend a median of 14 percent of their time within depths where we can see them, or aerial observers can, and so, when you adjust for that bias, it might be on the order of more like 50,000 to 121,000, just to give you a feel, but, again, it's preliminary, and, you know, all of this we're still learning about.

A little bit about their feeding, and they are filter feeders. They primarily consume organisms such as copepods and the shrimp, and there are some studies that show smaller-sized fish, but they have really cool and unique feeding strategies of barrel rolling, creating feeding chains, and they aggregate in various locations in groups, usually ranging from a hundred to a thousand, and these, we believe, function as feeding sites, cleaning stations, or sites where courtship interactions take place.

They use a wide -- They have wide use of the water column, and so it includes feeding at the surface and, at night, descending down, from 200 to 450-meter depths, and they're actually capable of diving to depths exceeding a thousand meters, and so, again, just wide use there of the potential to interact.

As far as their distribution and movements, they are distributed in tropical, sub-tropical, and temperate oceans. They have a low degree of interchange between ocean basins. They are commonly observed offshore, in oceanic waters, but also in nearshore highly-productive coastal areas, and those water temperatures generally are between twenty degrees and thirty degrees Celsius, and, really, they're moving corresponding with zooplankton abundance, current circulation, seasonal upwelling, seawater temperature, and possibly mating behavior, and they have a high degree of plasticity, in terms of their use of depths within their habitat. I know that was a lot of fast facts, but there really is some really interesting information about them.

Now we're going to try to focus a little in on specific to trawl effects, and so the giant manta ray are obligate ram-ventilators, and that's just the simple process in which they swim forward with their mouth open, taking in that water passing over their gills, and so you're familiar with sharks,

and that requires them to -- Or some sharks, it requires them to constantly swim forward, to pass that water, and so captures in trawls can severely restrict their movement, naturally, and these are large animals, and it can result in asphyxiation, and, as far as the stress resulting from capture, it can directly influence their ability to survive post-release.

You know, I've seen video where basically they get compacted against the netting, or like back against the TED, by the weight of the catch, and then that, coupled, again, with that impaired respiration, decreases the likely survival post-release, and so certainly some -- Again, we do -- Actually, I will just stop there, but I guess post-release mortality is unknown, but these factors do make it a concern.

I realized that I just show you the slide with the data, and I do want to point out that, because observer coverage is less than 2 percent, and I actually think that I was going to edit that a little for you, and so it's generally around 2 percent, but keep in mind that that's across, you know, all of the fishing, as opposed to not just within your region of the South Atlantic, and so this is a slide that I have updated with the most recent data available, and so you can see we're now up to pushing five years of information. We have twenty-six giant manta ray that have been released alive, four mortalities now, and seven unknown, and that takes up to a total of thirty-seven, twenty-nine in the Gulf and eight in your region.

As far as -- I think I already -- Just to highlight it again, and so that bi-op didn't have any assumed mortality. Here, if we look at -- You know, just kind of doing the simple math, we're at 10.8 percent immediate mortality, based on that approximately five years of data, and then, in terms of looking at the spatial and temporal observations of the bycatch records that we have, the Gulf of Mexico interactions are occurring -- The vast majority right now are offshore of Louisiana, and we've got twenty-six. We do have a couple off of Alabama, and one off of Texas.

Then the North Atlantic interactions have occurred off of Georgia, and we don't know exactly where, based on the information we have, and we don't have coordinates, and then off the east coast of Florida. Most interactions have occurred in spring and fall, and we do have multiple interactions occurring on a single trip and at night, and then the majority of the interactions are at depths of less than a hundred, and so, for example, the depth breakdown is, in the Gulf, we had fourteen between fifty and a hundred feet, eleven less than fifty feet, and four more than a hundred feet. Then, in the Atlantic, all eight were in less than fifty feet.

The next slide is you can see for yourselves, and here is our information that shows where bycatch records have -- It's a little tricky to read, because they overlap some of the records, and so you can't count the dots on this map, but you can see the trend, as far as the numbers with respect to fall, spring, summer, and winter.

This is your region, and I should point out the importance of shore and nearshore Georgia and north-central Florida, due to the -- The offshore and nearshore Georgia and north-central Florida is an important area for giant manta rays. A seasonal aggregation of adult manta rays visits the Atlantic coast of central Florida each spring, and, while this aggregation has been largely overlooked by scientists until recently, anglers actually have been long aware of these manta rays, and they actually use them to find cobia, in the cobia fishery.

Manta rays migrate in large numbers to northeast Florida, from March to May, and they can be found there throughout the year though, and just, for example, we've got a recent aerial survey that documented sixty-four manta rays in a single trip, and historical surveys documented more than a hundred in a trip. Recent surveys have also documented courtship behavior and mating scars, again showing that this area could be used for reproduction and foraging.

You have six interactions occurring off of Georgia, again, and two interactions off of northeast Florida, and I guess another thing that I want to point out is I'm telling you a lot about the importance of this area as a nursery, and some other information that I just shared, and it might not match up necessarily with what you're looking at, in terms of the eight records, and I do want to just point out that the lack of more interactions could be a function of the very low observer coverage in the South Atlantic region, because, based on what we know about abundance and migratory areas, we would anticipate more takes than necessarily what we're seeing here.

The seasonal occurrence is consistent with observations and predictions described in Farmer et al. 2022, and so Farmer et al. 2022 integrates decades of sighting and survey effort data from multiple sources in a comprehensive species distribution modeling framework, and it does that to evaluate the distribution of giant manta rays off the U.S. east coast and Gulf of Mexico, and so, based on the model's predictions, we have improved insights on where, when, and how many mantas are likely to occur in the Atlantic and Gulf of Mexico waters.

I will read a little bit more, just because I think it might be slightly misleading, but so, in the Gulf of Mexico -- I guess it doesn't say "Gulf of Mexico" preceding that bullet, and so, in the Gulf of Mexico, the highest nearshore occurrence was predicted around the Mississippi River Delta from April to June, and again from October to November, and the highest nearshore occurrence, again, tends to be off of northeastern Florida during April. As temperatures warm from June to October, the distribution of manta rays extends northward along the shelf edge, with higher occurrences north of Cape Hatteras, North Carolina. Then, as temperatures cool, from November to March, manta rays are more prevalent south of Savannah, Georgia.

Really, the point being here is just that what I was just sharing, as far as bycatch estimates, it does correspond with the seasonal occurrence and locations of this paper, and so the predictions are consistent with this Farmer et al. 2022.

All right, and so now I'm going to switch to sawfish, and thank you, and I know that's a lot of information, and I'm really glad that I have this opportunity to share it with you. I am sorry, I should add, that I am not there in-person, and I really wanted to be, but I had two work trips, and I just couldn't make it work.

MR. MERRIFIELD: Jenny, can I interrupt you?

MS. LEE: Sure.

MR. MERRIFIELD: I think I have a question about -- Or a comment about the manta ray, and so I wanted to take that before we get into the sawtooth.

MS. LEE: Sure.

MR. MERRIFIELD: Go ahead, Marilyn.

MS. SOLORZANO: Okay, and so, basically, everything you just said is an opinion or a guess, a guesstimation, and I can tell you this. In thirty years of fishing, 200 days a year, four nets at a time on the bottom, 96,000 nets, I've caught one manta ray, and that was caught off of Texas, and zero smalltooth sawfish, and so I don't agree, for one second, with your numbers. Now, your study of where they live, and how they live, and what they do, is one thing, but the manta ray that was caught went back in the water alive, because it's going to get dumped back out the mouth of the net, and they swim back off, and so I'm not in agreement with any of your study at all. I've got 96,000 nets, and I've never caught one.

MS. LEE: I appreciate you sharing your individual experience. I just will say that I think the information I'm presenting, just to be clear, is not an opinion, but rather it's our observer data, and what we have for bycatch records, and then I'm sharing some of just the facts we know about the species and a little bit of, you know, again, about the biology and what we think, and so I appreciate that.

I certainly understand that that's been your experience, but I just wanted to clarify that, because I know we talked about -- Just to let you know that this was not a biological opinion that I am sharing here, and I am actually letting you know that we have do a biological opinion, and here's the information that we have that will be assessed in our opinion, and so I appreciate that a lot, and, also, it's probably a good opportunity for me just to make sure we're all on the same page.

MS. SOLORZANO: That's fine.

MR. MERRIFIELD: Go ahead.

MR. FLUECH: I'm sorry if you said this, but the observations, the ones that happened off of Georgia, was that over a four-year period? I guess I didn't see over what time period that -- That wasn't one season or --

MS. LEE: It wasn't one season. Let me just double-check here for you.

MR. FLUECH: It was off of Jekyll, I think, and I think it was like the Jekyll/St. Simons area.

MS. LEE: Yes, and that is where I noted too that we didn't have -- Let's see, and so I'm trying to look quick, and I don't know -- I can follow-up with you, and I don't know that I can quickly tell you exactly what years, from just the way I presented this information, and so --

MR. FLUECH: I just wasn't sure that --

MS. LEE: The dots off of Georgia were not -- We did not have the very specific coordinates there, and so we placed that so that I could tell you that we have take off of Georgia, but it's not specific to that location, and is that helpful?

MR. FLUECH: Sure, yes, and I was just trying to get a better grasp of the time scale. That observation, was that over a five-year period, or a ten-year period, and I didn't know if you had said that or not.

MS. LEE: I was reviewing all the data we had from basically 2019 through today, and I know I can find that detail, but I just right now am not finding it super quick, and so let me get back to you on that detail, and is that all right? When I say get back to you, like before I'm -- You know, while you're giving questions, I will search for it, but I don't want to get too lost here in my moving forward.

MR. FLUECH: Thanks.

MS. LEE: Thank you. I appreciate it.

MR. MERRIFIELD: Any more questions or comments about the manta rays, before we go on to sawtooth? Anything else?

MS. SOLORZANO: So you mentioned that the overfishing was foreign and not American. If you got -- How do you know what's going on in these foreign countries? Do you have observers that you're getting your information from on in boats in foreign countries?

MS. LEE: We did a full status review when we were considering listing the species, and I can share that. I am going to follow-up with some additional information, to help folks that, you know, want to dive a little deeper and look at some of this information themselves, and so, yes, I don't want to sort of speak off-the-cuff, because I want to make sure that I am correct in everything I say, and it's been a little while since I've looked at all the details of that status review, but I just kind of wanted to give you an idea of, in general -- It's the type of species that, when manta ray and fishing overlap, then, you know, bycatch is a problem, is probably just the simple way of presenting that. That's why that is a risk, and a problem, for this species, and so, in areas where there has been fishing, and there has been manta ray, that's where we've -- You know, when you're looking globally at different places, that's where, you know, where you're seeing those declines.

MS. SOLORZANO: Again, these are biological opinions and not facts.

MS. LEE: This is not a biological -- Just to be clear, this is not a biological opinion that I am sharing with you now. What I was referring is we did a status review that summarizes the best scientific and commercial information available on the species, and there are determinations associated with listing, and I don't really want to debate those here, just because I think that's going to distract from what we're talking about, which is looking particularly at information relevant to you and your fishery and trying to share that with you, but I would love to follow-up, and this is, again, why I'm so sorry that I'm not in the room, because I would love to be able to just go and talk to you after this, and I am always available, and maybe we can -- Just give me a call, and we can talk more about it.

MR. MERRIFIELD: Okay. That's fine. Since there are no more comments, let's go on to sawfish.

MS. LEE: All right. I appreciate that you guys wanted to take a couple of questions there.

MR. MERRIFIELD: I think it's important to know too, like Allie just said, that this is a federal requirement, according to ESA, I believe, that you have to do these reviews, and these biological opinions and the reviews, every so often on these species, correct?

MS. LEE: Yes, and, I mean -- Yes. Under the ESA, once you list a species, there is something called a five-year status review, which you revisit and look at the information, and then what I'm doing, or talking to you about, is a different part of the act, under Section 7 of the Endangered Species Act, which is where federal agencies have to look at their actions and consult on them for their impacts, to make sure that what they're doing isn't making things worse off, basically, for species, is like the simplest way to say it.

MR. MERRIFIELD: Okay. Thank you.

MS. LEE: No problem. Let me regroup here. Now we're going to switch to smalltooth sawfish, and so we're going to be much quicker with sawfish, in terms of the background, because, again, you know, I know you've had presentations before, and are probably pretty familiar, but, just real quick, in terms of life history, some key facts. They have live birth, seven to fourteen young every other year, and they have site fidelity, where moms are returning to the same birthing sites. They sexually mature at an estimated seven to eleven years and a length of twelve feet. They are relatively slow-growing, with a maximum size of sixteen feet, and they have actually a long lifespan of thirty years.

In terms of their range, they are most common between the Peace River and Florida Keys, to a depth of 120 meters, but generally Florida. As far as the status goes, we listed them back in 2003, and the original listing was based on bycatch and habitat loss, contributing to their decline, and then limited reproductive output, making them inherently vulnerable to depletions and slow to recovery. There were population declines during the second-half of this twentieth century, and, in terms of the U.S. population size, it is unknown, but is currently being evaluated.

I was just going to say that Dr. Carlson recently did a presentation that reviewed, and we're going to talk about it in a second, but his recent update, and he has -- He did a full presentation on his paper that I'm going to talk about in a minute, and so, if you want some, again, more details on the life history, and what we know and don't know, that's a good place, but let me not throw myself off here.

We started this all with saying, you know, that we had new information that warranted revisiting the biological opinion, and so now I'm just going to talk a little bit about what some of that new information is, just to give you an idea of what wasn't considered in the last biological opinion, and so we have a Graham et al. 2022 that was not available when we last consulted. It highlights trawl threats, and, for the first time, it makes a specific recommendation to mitigate bycatch mortality, and some of the suggestions that were in that paper were a year-round closure of shrimp trawling of much of southwest Florida, increased observer coverage, electronic monitoring, and two time restrictions, and then we received a letter from the recovery team voicing concerns of sawfish interactions in the trawl fishery. Again, we think it's warranted that we are looking at more information and revisiting that biological opinion.

There are also three genetic papers, and two are noted here, and one is going to be on the next slide, only one of which was available last time we consulted. They did parental reconstructions using genetics of all the juveniles caught in surveys between 2000 and 2015, and the data indicate that only 126 individual females have birthed the majority of juveniles that are caught in sampled nurseries between 2000 and 2015.

Smith 2021 is a dissertation, and that specifically looked at the effect of population size and number of breeders, through genetic analyses, and the effective population size is the number of individuals contributing genes to the next generation, and so it's really just a genetic-based tool that compared effective population sizes across two generations, looking at 2005 through 2008, versus 2012 to 2015, and they showed the effective population size is actually growing through time, despite high variability in the results, and the slide shows the effective population size that they have of 650 individuals and the number of breeding individuals.

Carlson basically relied on all of the results of these studies to rerun his population viability analysis that he had originally conducted back in 2015. If you're not familiar with population viability analyses, they evaluate the population's ability to recover in the context of ongoing bycatch and consider uncertainty in the initial population size, reproductive periodicity, bycatch mortality, and other key parameters.

Essentially, they considered -- You know, Carlson 2023 considers multiple scenarios looking at population response to bycatch threats. Bycatch risk for smalltooth sawfish is significantly higher for the Southeast shrimp trawl fishery than other fisheries assessed. It considers those -- I think I have that twice, but it considers multiple scenarios of bycatch threats, and then, of course, I want to make sure that you hear this, that there's high uncertainty in a lot of the scenario outcomes, and, really, this model highlights the importance of improving our understanding of sawfish life history, improving our understanding of captures in the fishery and their associated post-release mortality.

I had started to say this earlier, but I put a link there, so you can see -- Dr. Carlson did present that paper recently, and so you can review that presentation at your leisure, if you want, and he did include some history on the original listing, and what we knew, versus the evolving information recently.

I guess I left off that I had added onto the slides before that, in addition to the publications, there's also an ongoing sawfish mortality event that is new information to us. You are probably aware of it, because, actually, it's been in the national news, and there's been a lot of press on it, but there has been strange sawfish behavior and deaths in the lower Florida Keys since late January. A lot of the sawfish have been actually on the Atlantic side of the Florida Keys.

The reports are of smalltooth sawfish swimming erratically, thrashing in the shallows, beaching themselves, and, again, there is some video out there, but it's affecting sawfish that are larger juveniles and adults, generally ranging in size from around ten to fourteen feet, and, as of April 23, and so that's only two days ago, and this is very new information here, but we're aware of 199 unique sawfish reports, with forty-three confirmed as mortalities, and confirmed means these are necropsied, and so the total mortality is expected to be higher, significantly higher.

The cause is currently unknown, but under investigation, and so, given the concern for the high mortality of sawfish, we have been working with our partners. We developed a rescue and rehabilitation effort, and they made the first rescue on April 5, which was a sawfish that was transported to Mote in Sarasota, where it is receiving care, and so, I guess, just on that, really just stay tuned, and, you know, the information will probably continue to evolve and be out there in the press.

Really, the big takeaway with all of what I just shared, as far as smalltooth sawfish information, was not to get you in the weeds of the particular data that I was giving you, I guess, a quick synopsis of, but the big takeaway is that there is a bunch of new data, and, also, despite all of this new information, we still have limited information and data needs, and so, you know, we really -- You know, I can't stress enough the importance of us continuing to get good information, through the observer data, through all the work you're doing trying to get good effort data, and it's really important for us, as we're trying to assess protected resources.

All right, and so, again, where are we, because, again, there was a little confusion over where we were in the process, and so we have acknowledged that we have the need to reinitiate. We are trying to make sure that, when we do conduct that consultation, we have all the information to have the best scientific available information on which we then do make our opinion, and so the initial target for having all of the information that we need to complete what I am referring to as the initiation package, and conduct a consultation -- We initially told folks that we thought it would be April, and, admittedly, you know, part of this is getting updated bycatch estimates, meaning they're extrapolated out, and what I shared was just the bycatch records.

Shrimp effort data availability, as you all know, takes a while, and we didn't quite factor that into our initial estimates, and so we have requested bycatch estimates and analyses, based on effort data through 2022, which is now available, by June. Then, when that 2023 effort data is available, we will also consider that.

PRD is going to evaluate the new data, once received, and I note here that, anytime we're doing a consultation, it's still on the proposed action, and so any proposed Shrimp FMP driven actions that are going on, or any shrimp actions, the Gulf and South Atlantic take into consideration the key data that we are getting, and sharing, as it becomes available, and that needs to be also, you know, part of that opinion that we're doing.

The bottom line, with respect to next steps and timing, is just that, you know, I'm here talking to you, because we're going to continue to share that information with the councils and APs, as it becomes available, and we're trying to be very transparent, and we, you know, want to make sure that our partners, the council, is getting that information, as we're getting this up, so that we keep you all informed, and so I don't have -- You will note that I didn't put, on my next steps and timing, a date, like saying the bi-op will be completed by blank, because, again, it's really -- It is an evolving process, but I can say that, you know, we're going to keep you informed every step of the way.

The next slide is just a reminder, really, that we do have some release guidance for giant manta rays and smalltooth sawfish. They are now in English, Spanish, and Vietnamese, and so I posted the link there, and we are always looking for information, and, in addition to any required reporting, you can always share data, through our sawfish line, through emailing, or getting in touch with our giant manta ray coordinator, Calusa Horn, and then, of course, I'm always here for you too, and, any time you want to reach out and discuss any of this, or share information, please just get in touch, and I will leave you just with the last slide, which is just a picture of that guidance.

I know I threw a lot at you. You know, it was -- This presentation, and the information, because, again, of sort of where your Shrimp AP meeting occurred in time, it's been growing, right, because

we have been, you know, getting more information as we're moving forward here and getting ready and working to conduct this consultation, but that does conclude my presentation.

MR. MERRIFIELD: Thank you, Jenny. One thing that we've discussed a lot at this meeting is the reduction in effort, and so that's certainly going to be in favor of less interactions, and it also -- Regarding observers, it's a higher percentage of coverage by the observers, because we have fewer trips, fewer participants, and so the economy has kind of helped us, in this manner, to reduce the interactions.

MS. SOLORZANO: Well, I think it's pretty obvious that, in the last few weeks, or maybe month or so, couple of months, and you've had all these sawfish acting crazy in the South Atlantic Keys area, that it wasn't from shrimping, and so the trawl nets didn't cause that, because no one was working in there. There's been very little effort on that area, and so I think we can rule that out as the reason that those sawfish were acting strange.

MS. LEE: Yes, and, actually, I do want to just make sure that you all know that we are not in any way suggesting that you shrimpers have anything to do with that. That is just, you know, something -- It's unprecedented, really, and it's a new mortality event. You know, looking back, there hasn't been anything similar to what's going on, and so, you know, it's an important piece of new information to share with you that is about sawfish, but it was not to at all -- You know, when I said that the reason, or the -- You know, that it was under investigation, and we didn't know what was going on, and, yes, it is not a bycatch event.

MR. MERRIFIELD: Do you know if they were able to rehabilitate the one that -- I'm sorry.

MR. WILLIS: Jenny, we have no -- Do they have any ideas of what is causing the sawfish issue? Is it chemical, or is it --

MR. MERRIFIELD: It's not just sawfish. Go ahead, Jenny.

MS. SOLORZANO: It's probably nature.

MS. LEE: The best thing that I can do -- I can even share some links, and, maybe in your break, you can check. I know there's some really good press out there, and I cannot, for the life of me right now -- I am not the point of contact on this whole event. Adam Brame is, and he would, off the top of his head, know the word that I can't think of that is the suspected thing, but I don't want to sound like an idiot, and so I'm just going to pause on that and get back to you on what we do know.

MR. MERRIFIELD: That's fine. It's just interesting to note though that it's not just sawfish, and it's happening to several species down in the Keys.

MS. LEE: Correct.

MR. MERRIFIELD: Like yellowtail snapper.

MS. LEE: If you Google it, and I know that sounds silly, but I just looked at FWC, and there's some really good press information out there. It's been on national news, and so they've had some

stories, and I do encourage you to do that, so you can really learn what we do know, because it is under investigation, and so, you know, the information that we have is out there.

MR. MERRIFIELD: Any other comments?

MS. SOLORZANO: I don't think we can say that this has never happened before. I just think that, because everyone has a cellphone, and everyone is on the water, and there is so much videoing and things going on in the past fifteen or twenty years, that you're now getting recordings of things. These things probably occurred in the history, in the past, naturally.

You just didn't see it like you see it today, and so there are all, again, just opinions, and you don't know what's happening with the sawfish down there, or why, or the sailfish or any of the other strange phenomenal things that everyone catches on video now that maybe have always occurred, but you just didn't see them. You don't know how many sawfish were there a hundred years ago. Nobody has a number, and so you can tell me that they've declined, based on what? Opinions? Like this whole stuff is getting -- I'm done.

MR. MERRIFIELD: Okay. You bring up a good point, that we do have a social media network now that is incredibly vast, and it catches just about everything. You can't do anything anymore without getting caught on video, and just know that for a fact.

MS. LEE: I guess, when I was saying unprecedented, I mean, we're looking at -- Dr. Carlson was just looking at, of the available data, and looking at what we have for past mortality events, you know, we didn't -- When we were looking at the information that he was reviewing, we didn't see any other, you know, similar events of mortality, and so that's a better way of saying it.

MR. MERRIFIELD: Thank you, Jenny. Any other comments or questions? I think we're good. Everybody online is good?

MS. IBERLE: Yes. No hands.

MR. MERRIFIELD: Okay. Thank you very much, Jenny.

MS. LEE: All right. I really appreciate it, and I'm sorry I'm there, and please reach out. I'm happy to talk to anyone.

MR. MERRIFIELD: Okay. Thank you.

MS. IBERLE: Thanks, Jenny. Now we'll switch to Shrimp Futures.

MR. MERRIFIELD: Yes. Shrimp futures.

MS. IBERLE: All right. Give us a minute to switch these around.

MR. MERRIFIELD: Okay.

MS. GERVASI: Good afternoon, everyone. My name is Carissa Gervasi, and I am here on behalf of the NOAA Fisheries Southeast Fisheries Science Center to present to you what we're calling

the Shrimp Futures Project, which is currently a collaboration between the Southeast Center and the Gulf States Marine Fisheries Commission, and I have a really short presentation today. We don't have any results yet, because the project has just been initiated. We haven't started it yet, and we really wanted to bring all of you into this from the very beginning, so that we can ensure that what comes out of this project is very useful for the fishery.

Before I jump into the project details, I just wanted to give a quick overview of what we do at the Science Center and how this project -- Where this project fits in, and so we sort of have our two branches here. On the left is our science and operations, where we conduct a lot of our scientific research, and then on the right is all of our council services and what we do to inform management, and that includes our stock assessments, the support for assessments, and then our commercial and recreational monitoring and surveys, and, on the top-right there, and it's a little hard to see, but we have our social science research group, which really informs all of the information that we provide to the council for management, and that is where this project is housed, within the expertise of our social science researchers.

As we've been discussing today, and yesterday, a lot of the issues facing the shrimp fishery are socioeconomic in nature, and so we're relying on the expertise of those individuals who have the human dimensions research experience.

I don't have to tell all of you that the current state of the fishery is pretty dire. There are a lot of stressors that are impacting the fishery, and the future existence is in jeopardy, due to a whole slew of issues, but it remains of really vital cultural and economic importance to the region, especially for -- Particularly for some people in underserved, historically underserved, communities.

There are several ongoing projects at the Science Center related to shrimp, one of which is the Gulf of Mexico brown, pink, and white shrimp research track assessment that's ongoing right now, and, because it's a research track assessment, there's a little bit more flexibility to include additional information into the stock assessment, and so I know the assessment scientists are working on including some socioeconomic and ecosystem-related information into that assessment.

Then the NOAA Fisheries equity and environmental justice group has recently held several focus groups, throughout the Gulf and South Atlantic, with underserved communities, and many of those are shrimping communities, and the goal is to figure out what are the needs of those communities, and how NOAA can better serve them, and then, finally, here, we have the climate, ecosystems, and fisheries initiative, and it's a national initiative that will help this project, because the goal of it is going to be to link climate models to impacts on fishing communities.

The Shrimp Futures Project is going to consist of a series of workshops with shrimp stakeholders throughout the Gulf and South Atlantic, and our goals are to, first, characterize the current state and major challenges that exist in the fishery, and then to develop short, medium, and long-term visions for the fishery, and I know, when there are so many pressing issues, it can be hard to sort of think long-term, but we want to try to get that long-term vision, so we can figure out where the fishery needs to go and what kind of interventions might be helpful to achieve those visions, and then, finally, again, to identify and address major pathways, impediments, and uncertainties towards achieving those visions.

We have sort of four different project actions that will help us achieve those goals. The first thing we'll start with is conceptual modeling, where, during workshops, we will collaboratively develop a conceptual model that encompasses all of the economic, social, biophysical, and regulatory factors that are currently impacting the southeastern U.S. shrimp fishery, and this will serve as a foundation for all of our subsequent discussion.

Then we will plan to do a vision identification exercise, where we'll develop both short-term and long-term visions for the future, specifying some key conceptual management objectives that stakeholders would like to have, and then we'll do an uncertainty analysis, where we'll identify some of the critical factors that are influencing the fishery and put together a list of the short and long-term uncertainties, things like climate change, economic factors, et cetera, and the crux of this project is really what we think we'll get the most out of here, is a scenario planning, where we'll be developing short and long-term scenarios for the fishery, taking into account these uncertainties.

These scenarios will include climate-informed forecasts of both the resource and the environment, as well as projections of community demographics, port infrastructure, et cetera, and we'll be contrasting a sort of no-action alternative, that, if we do nothing, you know, this is what we think would happen into the future, versus some key action points, and so interventions that we can take that might change the future outcomes. Overall, we hope to result with an action plan that we can present to managers and decision-makers both inside the National Marine Fisheries Service and outside the service.

We need a lot of partnerships in place to make this study successful. As you all know, NOAA Fisheries can't solve all of the current issues that are facing the fishery, and so I know we've mentioned before this whole-of-government approach, which is easier said than done, but what we plan to do, as the Fisheries Service, and with this project, is to see if we can identify who those partners could be and what agencies are able to make the decisions, and make the changes, that could actually result in benefits for the fishery.

Currently, we're working with the National Seafood Strategy, the Gulf States Marine Fisheries Commission, and their Future of Gulf Seafood initiative, and we hope to get support from the councils, as well as any additional partnerships with agencies that would like to be involved in this project, and, specifically, we need help identifying stakeholders that would participate in these workshops. We want to make sure that we're getting the full range of opinions heard and that these workshops are occurring, you know, at times and in locations that would be most beneficial to the industry.

Finally, I just wanted to touch on some key opportunities that we hope to identify and communicate to the stakeholders. We know that, in the short-term at least, a lot of shrimpers are in really dire straits, and they need some immediate assistance, and so, as part of this project, we want to identify some of these programs, like the Port Infrastructure Development Program by DOT, and Sea Grant has a Young Fishermen's Career Development Program, that fishermen may be able to take advantage of.

We've given this presentation to the Louisiana Shrimp Taskforce, as well as the Gulf of Mexico Council Shrimp AP meeting, and so we're hoping to get as much involvement in this as possible,

and that's all I have, and so I would love to hear your thoughts, and opinions, on the project and how we can make this successful, and so thank you.

MS. SOLORZANO: So this is Louisiana and the Gulf of Mexico, and you're actually asking the South Atlantic Fishery Management Council to join in on trying to solve that, and that's what you're doing today? I'm a little slow at catching on.

MS. GERVASI: Exactly, yes, and we would love to get some participation from the South Atlantic Council as well, and other agencies, like Sea Grant and anyone else who is willing to be involved.

MS. SOLORZANO: Okay. Interesting.

MR. MERRIFIELD: I know, in the past, grant money has been very difficult to apply for, or to qualify for, and so I know there's some attempts now to try to change that, and I know, in the State of Florida, we're changing the Stan Mayfield Working Waterfronts Act, and they're making some -- They're making some changes to that. Hopefully, if that's passed, it will make easier.

Because I have a lease at the port, I don't qualify for a lot of things, and so the port has to actually apply for a lot of those grants, and I can't, and so -- I think they're -- She is attempting to make changes in that, so that I can -- It used to be strictly for infrastructure, in terms of your building or your bulkhead or things like that, and she's expanding that to include equipment and things like that, which is great, and that will help a lot.

I know I've talked to the port about the Port Infrastructure Development Program, and there are certain grant programs that they won't apply for, due to the requirements of the programs, and I don't know if that's one of them or not, but there are some grants that they just won't go after, because of the reporting requirements, and some of the other requirements that are required, and so we're always looking for where is there ways that we can improve the working waterfronts, that we can maintain the working waterfronts, and I think that's important for the future. I don't know what else you're looking for from us, in terms of --

MS. GERVASI: I think the premise of sort of doing this scenario planning, and thinking about the future, a vision for the fishery, and do you all feel that this a useful exercise, and what do you think would be sort of the best -- The most important things that we would want to get out of that, I guess.

MS. SOLORZANO: I think one of the most important things would being able to have the people buying interest into the shrimp, the domestic shrimp, versus the imports. I mean, that's probably one of the biggest goals that most of us would like to see. We would also like to see a little subsidies on fuel, if fuel is not going to become more affordable, that comes into the range of working with the current price.

I'm sure you're hearing all of this from Louisiana and the Gulf of Mexico, and it's the same thing. We all have the same similar concerns going on, and I don't think the shrimping industry, or any fisheries industry in the United States, is really a dying industry, as some people like to say, and I think that there's a lot of people working to make it that way, but there are those of us who are fighting tool and nail to see it passed on to future generations and to keep it alive and to feed the people. We truly love doing what we do, and we want to do what we do, and we want to work,

but it has to be made affordable to do so, and I believe that's probably unanimous in every fishing industry across America.

MR. GEER: No pun intended about dying, because somebody already mentioned this, that we have, you know, graying of our fleet, in a lot of cases. In Virginia, 73.4 percent of our fishermen are over fifty years old, and only eight-and-a-half percent are under thirty, and so we're seeing this, and so programs like the Young Fishermen's Career, and we've been working with VIMS, and we just started -- Our agency started an apprenticeship program, with the goal of 125 young people getting involved, and the two programs are totally different, where VIMS is doing like teaching about fisheries management, teaching about science, teaching them how to balance their checkbook, how to run a business, and the one we have at VMRC is like how to weld, how to repair an engine, those kind of things, and so they're working in complement with each other.

You know, there's a lot of things wrong, and we talked about this a little bit earlier, where, you know, part of is that, you know, the young people can't get into the fishery, because of the cost of getting involved, but, you know, we've got to start looking at that as well.

MS. SOLORZANO: Well, young people overall don't want to go to work, and that's we the parents' fault, and not mine. My boys went to work, and they do it, and they're damn good at what they do, but I see it with my grandsons, and my grandchildren. They don't think they have to physically work. They don't mind using that phone, or that computer, or that AC'd room, but they don't want to physically work, and I think that's the problem with the people under thirty, is that we, the parents and grandparents -- Because they have told me this.

You know, I'm with these young kids, and they say, you all made us this way, and it's true. We wanted to make it easier for them, and we've made it so easy that they don't want to take these physical jobs anymore, and then, you know, you've got this open border, and all these people flooding in, yet you can't hire any of them. You know, we've got so many regulations against us hiring a person, and we're allowed 25 percent crew. Well, on a crew of four to five people, that's one person that you can have that is here on a working visa.

They have to be a citizen, and so we've had boats that are cited for this issue, and this is crazy. You've got so much of America that is filled with migrant workers, and you can't hire them to come work in the fisheries, and they're willing to do the job, but you can't utilize that. Young Americans are like -- You know, you want them to work, god forbid, twelve hours, when I want them for twenty hours, you know, and they don't want to do it. Nothing against you, because you're young, and you're here working, but -- And you're in this nice little AC'd room. When I was your age, I was sweating on the back deck, running down the crack of my butt, but that's how it rolls, you know, and we've made it easy for the young people, and they don't want to do this job. It's not that it's not available, and it's not that -- They just throw their hands up and run to mom and dad or grandma.

MR. MERRIFIELD: Did you have a --

MS. SHIRLEY: I was just going to say that we went over a lot of the things that you're looking at yesterday, and I like your presentation, where you said, if we take action, what does it look like, and, if we don't take action, what does it look like, what does the future look like, and I think there

is, obviously, value in what you're looking to do here, and I guess my question to you is how can we help, and that -- Let's try to proceed with a study.

MS. GERVASI: Thank you for that, and I think, at this point, what we really need help with is setting up these workshops, again, and identifying who all needs to be involved, what stakeholders need to be involved, and so all of you have contacts with shrimpers in your areas, and so we need to, you know, get those people involved, figure out when and where these workshops need to be held, so that we can, you know, make sure we're getting that diversity of opinions from everybody, and so I think that's kind of the main things that would help us out at this point.

MS. SHIRLEY: So will you spearhead that? I mean, are you going to be our point of contact, if we have stakeholders that we would like to refer to you for this project? Are you our point of contact?

MS. GERVASI: Yes, and you can certainly reach out to me. I know, in the Gulf, we are working with the Gulf States Commission to do that, and we're hoping that we can work with another agency, because, you know, NOAA -- We're the scientists, right, and that's our strength, is doing the research, whereas some other agencies, like potentially Sea Grant, or, you know, maybe other agencies on this side of the Atlantic that I'm not aware of, but they, you know, might have more strength in sort of scheduling these things, and so, depending on how many partners we can get involved, it will kind of dictate how long this project takes, you know, how many of these workshops we can do, et cetera, but, yes, definitely for now, I can be a point of contact, and we can get you contacts for other people at the center as well, and so, if you do have names, you know, information, we can kind of funnel that all together.

MS. IBERLE: I'm always here to help too, and I can --

MR. MERRIFIELD: So is this similar to what's going on in Baton Rouge next week? So that's the type of thing that you're looking to put together?

MS. GERVASI: Yes, exactly, and so it would be a stakeholder-driven workshop, where we do these conceptual modeling sort of exercises together, and so that's the National Seafood --

MR. FLUECH: So we're not -- Next week is not modeling, but it's getting industry reps to meet with NOAA reps, and also USDA, because I think a big thing we've heard is what can NOAA, and what can't they do, because, I mean, it's kind of like yesterday and asking what the council can do.

You guys have these lanes, but then looking at the USDA, when it comes to school programs, buying program, and are there other federal partners, private partners, and I think that question came out of the disaster response, of just looking at other models out there, like what FEMA does, how they respond, or the ag industry. If they have a disaster, you know, how are they able to get funding back, and so looking at different aspects, but that's part of next week's, is just looking at getting a better understanding of who has what assets. You know, in some cases, NOAA might be the best option, and, in others, it might be the USDA, and I think that's why we're trying to make sure we have a facilitated conversation between the industry and some of the federal agency reps.

MS. GERVASI: I think that's important, especially when we do the scenario planning, right, and we say, okay, this particular intervention might do this, or this might do that, and then we want to be able to identify like who has power over that intervention, right, and it might not necessarily be NOAA Fisheries. It might be some other agency that can have some sort of impact, but I think, you know, showing those scenarios, and showing what interventions will have the most benefit, might be able to help drive those changes.

MR. MERRIFIELD: Because you've really got an interesting mix here, because you've got developing industries, developing fisheries, in shrimp, in Maryland and Virginia, and they're more boutique, and smaller, and probably easier to manage, and then you've got existing large-scale industries, and so I mean, these are very proud food-producing people. They're very proud to be a part of supplying food to the nation, but we're being blocked out of that, and so we've got to get these agencies together.

This whole-of-government thing is very important, because you need to be involved with some of the other agencies that can actually do something about this, the USDA, and maybe the Trade Commission, and I don't know who, but that's where this needs to go, because you need the boutique stuff, and that's really great for the local area, but you also -- If you want the food to go into the nation, you've got to get these bigger entities, agencies, involved to facilitate that and try and try to figure out how to make that work, because I don't think we want that to go away. I don't think the country, if they knew, would want that to go away.

MS. SOLORZANO: America doesn't have a healthy eating habitat, and we kind of know that, and they need to be educated more on eating healthy, wild-caught, natural foods, be it vegetables, be it shrimp, be it oysters, be it whatever, and they're just not knowledgeable enough to understand healthy lifestyle.

MR. WILLIS: Have you looked at -- Because I know a couple of U.S. senators who are very much for local-grown stuff, and also for, you know, naturally-caught -- They're backing that, and, I mean, it seems like the way you may want to do this -- Because they're going to do it -- These agencies are going to do it based on the law, and I think what you -- It's almost something where maybe the council looks at getting one or two of these --Either from the Senate or the House, and look at them adding or tacking one of these onto a budget amendment, a budget bill they're doing, or something like that.

I mean, one of the ideas I have, and I'm going to go back to North Carolina, and I know Phil Berger, who is like kind of the most powerful political -- I'm going to say, look, why don't you put one of your rules on one of these things that says, if you're selling a fish -- If a restaurant is doing -- If they say they're selling natural fish, or natural, local seafood, then it has to be, and, I mean, that's easy.

It seems like we kind of forget the commonsense behind this, and we try to overcomplicate it. I mean, you know, we spent a lot of time yesterday talking about how -- What was happening with the industry, and you just validated everything we said, and so I think it's time to get off the pot and do something about it, quite candidly, and, I mean, that's what has got to happen, and I think maybe the council really needs to look at it from the political side of things, or at least educating them. I don't know how that's done or not done, and, I mean, this is my first meeting, and so I'm just -- I may be barking up the wrong tree, but it just seems frustrating to me.

MR. GEER: That's sort of a question I had. You know, we're looking at this from the council and the federal government, but what can the states do? Can the state go ahead, and can the states, the Ag Department or the Board of Health, you know, pass a bill that says what you just said, and it's like point of origin, and where is your seafood coming from.

MR. FLUECH: So Louisiana did finally pass something, and, to my knowledge, nothing has been enforced, but, I mean, you know, you've got COOL laws here, and so it's country of origin labeling, and that's for your retail. It does not apply to your restaurants, and I know that has been -- In Louisiana, they finally did pass that, and what it does is, whether it's farm-raised or wild-caught, country of origin, and I know there's been some efforts in other spots, and I know there's been issues locally, but, when it does come to like food safety and stuff, that's where you're going to start getting -- You know, is a local, or a state, going to be able to supersede FDA, when it comes to the food safety side, and so some of that stuff is going to have to happen, but, as far as the labeling laws, I mean, that potentially could be changed, but that's been at an individual level, so far.

MR. GEER: That's exactly what I was thinking about the labeling laws within the state, I mean, because all know they will ship it from overseas and call it Alabama shrimp, because it was processed in Alabama, and I'm just using an example of something I've seen personally.

AP MEMBER: Gulf shrimp.

MR. GEER: Yes, and it goes both ways.

MR. FLUECH: If you look at the labeling laws, and don't quote me on that, but what they are allowed to say, as far as where it's been processed, versus -- Yes, that is something, the way the rules are currently written at the federal level, what they can claim as, you know -- Because, a lot of times, you will see even things that are caught, I don't know, somewhere else, but then processed in the United States and stuff, and so, yes, I think, as far as changes in the way the labels are done, maybe it could potentially help.

MS. IBERLE: I did just want to remind everybody that, as far as the council goes, the council is kind of really stuck in the lane of recommending management measures to NMFS. The political side is -- The political is outside of that lane.

MS. SOLORZANO: I've been coming to the council meetings since the South Atlantic Fishery Council met in St. Augustine in 1996, and I've been to a lot of them since, and it seems like, often, we're fighting the same old battles, and not a lot gets done by the management councils, other than to manage us, and we don't want to be managed, and I can tell you that.

MR. FLUECH: But that falls under the industry, as far as getting to the legislators, and that's where -- Because they can't lobby. NOAA can't lobby, and the states can't lobby, and so that's where your fishing associations have to take on that role, and, you know, this past year, with all the flooding, and, I mean, that's why you're seeing the resurgence of new groups that are really -- Which, if anything good has come out of that, and this is just my opinion, I'm glad to see that there is organization happening, because they are trying to sit at the table, with their state legislation, to try to get some actions happening, and so I hope that momentum keeps going.

MS. GERVASI: I will just add, real quick, that NOAA -- You know, we can't lobby on your behalf, or things like that, but like what we can do, with this kind of research, is we can compile everything that you've said, right, and we can compile all of these issues, and concerns, and we can do these analyses, and write up these reports, that we can then share with hopefully those people who can actually make the decisions that, you know, make a difference, and so that's kind of what we're trying to do here.

MS. SHIRLEY: I just want to add one more thing about the labeling, and that's -- You know, in Florida, we had an issue with grouper, and they were selling every other fish besides grouper and calling it grouper in the restaurants. Somehow, they were able to get it on restaurant menus that you had to -- There was a test available, that you could test to see if it was truly grouper or not, and the local media took off with it. I mean, that's the kind of stuff that we need to do with shrimping, right, is that it needs to be local, wild-caught shrimp, and not imported farm-raised, and how do we get to that level, but that would be extremely helpful.

MR. FLUECH: There are assays out there that you can, but just keep in mind that there's nothing illegal about having imported shrimp, and so a restaurant -- There's nothing -- But that's where when you get like the mix, and people all of a sudden say, no, it's -- That's why I think, in Louisiana, what they were trying to do is clarify that, okay, maybe this is local, but, if it's not -- You can't say we serve local shrimp, and it only maybe be one little thing, when everything else is -- That's where it starts getting really blurry.

You know, even like we were talking about yesterday, like pictures of your dock, when they don't -- You know, that implicit and explicit bias, and, yes, there's a lot of little mis -- I think people automatically walk into a store going, oh yeah, it must be local shrimp from northeast Florida, and we're like, no, not necessarily, and so there are a lot of little loops, but there are tests out there, but whether it's on a large scale -- That I don't know.

MS. SHIRLEY: I'm just saying the grouper industry did a good job making it known to the public, and so I think it's just a public perception and making sure that, you know, we're doing what we can.

MR. VOGELSONG: You all have got me worried here, and I'm afraid to go get me a damn hamburger from Five Guys, because, you know, that might not be real hamburger meat.

MR. MERRIFIELD: Is there anything else on that? Carissa, thank you very much.

MS. IBERLE: We're ahead of schedule.

MR. MERRIFIELD: That's good. Okay, and so, if there's nothing else to talk about on that, we'll go into Other Business, and there was a couple of items that we had under Other Business, the first being submerged cables, and I just wanted to bring that up, because, every year, or not every year, but about every other year, I get a representative of a cable company -- Anyway, he comes around and gives me charts, and I have little USB things that you can plug into your computer, and it basically shows you all the charts. It charts all the cables, the submerged cables, and the main interest of this, obviously, is that we're not going to snag them, because they're very expensive cables, and repairing them is a big deal, because they're on the bottom of the ocean.

For the most part, trawling is not going to catch them, and the main way that you're going to catch them is anchoring, and so I don't know -- I have charts of Florida, and I know there is some that come off of North Carolina, and, the further north you go, the more you get, and so you might want to look into that, just to make sure that everybody knows where the cables are, so that they are not using those areas as anchoring spots.

MS. IBERLE: This past Friday, I had a meeting with Steven, from Sea Risk Solutions, and we talked a little bit about the submarine cables, and he definitely said that there was less interaction from the shrimp fishery and that the main concern, again, was snagging the cables, but a lot of where the cables aren't buried is outside of the depth that even the rock shrimp fishermen are trawling, and he did give me a website that has a lot of PDFs, that have maps and coordinates, for the -- I want to make sure that I'm saying this acronym right, and so it's the North Atlantic Submarine Cable Association.

If you just Google that acronym, "NASCA.org", you will not get that website, but, if you put dashes in between the letters, and so "N-A-S-C-A.org", that will get you to the website that has a little bit more of a comprehensive list of the PDFs, more than just Florida, and so a lot more resources there.

The Sea Risk solutions information is listed on this flyer, and you have two flyers in your briefing book that have information to get in touch with them, and the other contact here is Globe Net, and that's one of the cable companies, and so that's more on the actual cable owners, whereas Sea Risk Solutions provides materials for fishermen, and it's kind of more of a -- I don't want to say a middle-man, but a resource for the fishermen, and so, if you want me to write down that website for you, or I can include it in the list of materials that we'll send out after this meeting, so that everyone has that source.

MR. GEER: What may be even more interesting is, as some of these wind energy projects come up, and these shore-based cables are coming in -- We've already seen that, you know, in Virginia Beach, where the proposed area -- Fortunately, our little shrimp fishery, there is already something there already, and so they've been avoiding it, but, as more of those are coming ashore, that's going to be in state waters, and we're going to have to address that.

MR. MERRIFIELD: Okay. There was only one other item that I wanted to bring up, and that was a Coast Guard National Commercial Fishing Safety Advisory Committee, and this actually came down from the marine side of OSHA, and it's National Ocean Safety -- I don't know, but it comes down from that side of the CDC, and they were trying to look at incidents at-sea and analyze, you know, ways to reduce incidents at-sea, and so the proposal was to require merchant mariner cards, certification cards, and I know our -- The association that I'm involved with, we sent in a comment that was against this, because I think, if we do that, we're going to lose -- I mean, they wanted it on basically on all the captains in the fishing fleet, plus they wanted to do -- They wanted to test the crew members as well. I think that -- I don't know where this has gone since then, and I know we put in comment, and I think somebody said you guys --

MS. SOLORZANO: I was there, and talked with the people there, and it was unanimously voted, of those that voted, not to do anything at that time, and that was in Fernandina, like two weeks ago, maybe.

MR. MERRIFIELD: Okay.

MS. SOLORZANO: Yes, and it was unanimous by all, and now not necessarily your government, and your Coast Guard people were not voters on it, but all the people that showed up to that, and I think there were like fourteen people, three of them being government, and the eleven fishermen that voted are the people that were there from Alaska, Maine, Washington, Louisiana, and they were from all over, and New Jersey, and they all voted to do none of this, and it was pretty much a unanimous decision not to follow through with any of that training or that ridiculous stuff they were asking for.

MR. MERRIFIELD: I've talked to a lot of Coast Guard, and retired Coast Guard members, and nobody is in support of it. First of all, they say it's really unenforceable, but, second of all, it would devastate the fleet. Yes, sir.

MR. GWIN: This was brought up at the Mid-Atlantic Fishery Management Council, and one of the questions I asked was how much it would cost, and the cost would be -- Just for one person to get their -- Like their hundred-ton license, it was a lot, and that wasn't counting the crew, but the good thing is one of the commercial fishermen that was there -- His comment was they tried to do this before, and it was shot down, and he has a feeling that it will probably get pushed under the rug again, and that's what we're hoping.

MR. MERRIFIELD: These are the kind of things that, when we're talking about whole-government, that -- I mean, we need to raise these up to the council, when you see these things, because we need them to weigh-in on these matters, and so they need to at least be able to give comment on these kinds of federal programs that they're trying to implement.

MS. IBERLE: Yes, and we'll definitely bring this to them, and then what I can do for you guys is keep track of where that is going and provide you guys updates, as we know information. We can keep an eye on that.

MR. MERRIFIELD: Is there anything under Other Business that we would like to bring up?

MR. FLUECH: This was mentioned earlier, about the Young Fishermen's Development Act, and I know, earlier, people were asking about grants, and the deadline -- This is something fishing associations can apply for, and I know, Pat, you referenced it, and so there was another call, and I guess each project can be up to $400,000, but it is for training, and so the next deadline, or the deadline, for proposals is May 2, but I know, up in the Northeast, you've had fishing -- Like industry groups actually get the award, and so it can be state agencies, Sea Grant programs, and the council can't apply. Sorry, but, if anyone is a part of fishing associations, you guys are eligible, and so, if anyone does have any questions, you can -- Even if you just Google that "Young Fishermen Development Act Grant", it should pop-up. Otherwise, I'm happy to share information, but it looks like there was a million dollars for FY 2024 for fishermen training programs.

MR. WILLIS: On this young fisherman thing, Trish, are we doing anything in North Carolina on young fishermen? I haven't heard anything, and maybe it's a dumb question, but I'm wondering if there's a way we can do that, do more of it.

MS. MURPHEY: We're not really doing anything that is at young fishermen, per se, but North Carolina Sea Grant does host a fish camp, which is a day, or it may be a couple of days, where you can come, and you'll hear presentations on, you know, the science, how stock assessments work, and stuff like that. You may actually know more, as Sea Grant.

MR. FLUECH: Yes, and so we have a current Young Fishermen Development Act grant between North and South Carolina and Georgia, and part of that is working with Carteret Community College to develop an apprenticeship program for the region, and so, right now -- We do have an advisory board, made up of industry reps from each state, and it's not just shrimpers, but you guys have a lot more diversified fisheries than we do in Georgia, but they are slowly working on curriculum for that course, and then part of the grant would fund for stipends, both for the potential students and then for the current fishermen, because we realize that's -- You know, so there is money for that.

The idea is to start the pilot apprenticeship program next year, but South Carolina Sea Grant has a separate project, which they've also been doing a pilot project apprenticeship program, which they've been doing their training for the past few weeks, and so exactly what you just mentioned about the fish camp though, which is really cool, because that's a week-long program, and it's not just -- I know they go to DMF to learn about management, but they bring in financial advisors to talk about money management, and it's everything from that to just mending nets, and so I know Sara Mirabilio, the fisheries specialist, she's trying to build off that.

We're also working a lot more with the Alaska Marine Safety Fisheries Association, to develop more train the trainers here in the region, because a lot of the trainers we have -- Like we used to have a couple of trainers, and, actually, Nancy was one, and so we're trying to get more port-based trainers in our region, who actually work in the industry, who know -- Because, I mean programs were developed for the Northwest, and, you know, they are trying to tailor it for this, and trying to build up.

I know we've got some proposals even for fishermen first aid and CPR, and this is going back to the aging fleet, and this is something just to build up, to make sure that we have people in the industry that have those skills that can train future generations, and so there's a lot of stuff that's happening on the ground, but it's going to take a little bit of time to implement.

MS. MURPHEY: Just to also add, and folks around the table probably know about this better than me, but MREP, and it's the Marine Resource Education Program, and I think that's a week long too?

MS. IBERLE: Yes, and they combined the science and the management.

MS. MURPHEY: So there's something else, and, you know, there's that too, and I think it's free, and you just apply.

MS. IBERLE: Kim Iverson is the contact, the council staff contact, that can enroll you in that MREP program, and it's a really great -- It's kind of like the federal fisheries management, you know, in a nutshell course. I personally have been, and it was amazing to meet a lot of people, and, when I went, it was a mix of Gulf and South Atlantic, and so you'll learn a little bit about the management, both on the council side and then when things leave the council, and what happens

then, which I think is really important, as things come down the pike, and so, if you want to start with me, I can put you in touch with Kim.

MS. BROUWER: (The comment is not audible on the recording.)

MS. IBERLE: Thank you. Myra said there's a button on our website that takes you straight to the application.

MS. SOLORZANO: I think, as being a vessel owner, you're not going to learn -- You can teach them all your management stuff, and this resource crap that you want to do, and what we need is people that are young and willing to go out on a boat and work, and you're not going to teach that. They've got to go out there, and each boat -- The safety on each boat, and where your position -- That captain, and the older crew members, they're going to teach you how to be safe, or you're not going to survive. You won't last, and so it's -- It's going out and learning at-sea. This management fishery resource crap that you all are trying to educate these people on, what good is that going to do you if you're a deckhand?

MR. MERRIFIELD: You've got two programs going on.

MR. FLUECH: Yes, and they're two different things.

MR. MERRIFIELD: You have the young fishermen, but the MREP program is if you want to learn the management side of it, and it takes you through how they develop the science, and how the management process progresses, and that's if you want to know what's going on behind this scene right here. If you want to go out on the water and learn how to be on the water, that is --

MR. FLUECH: It's completely separate.

MR. MERRIFIELD: They're trying to find ways to motivate young people to get into fishing, and that's what the young fishermen's program is about, but --

MR. FLUECH: The other thing about the MREP, and I've had to tell industry, is you're not going to walk away and -- The purpose, honestly, is not that you walk away being a scientist. It's the networking, and, at the end of the day, and as we said earlier, you can't be in this industry anymore without -- Whether you agree with management or not, you know, being able to communicate, and so at least having some basic fundamental understanding, when they're talking about stock assessments.

Hell, I walked away from it not even knowing everything, and it's a lot, but, at the end of the day, the fact that you actually get to meet face-to-face with the Regional Administrator, and take advantage of it from the networking, because, again, when it comes to a lot of these fisheries issues, it's being able to pick up that phone call, and so that is one thing, and I admit there's not as many shrimpers that tend to go that, and, at least in the Gulf and South Atlantic, it does tend to be reef fish heavy, but I know, in trying to get some of the people from Georgia, just beyond the technical information, take advantage of the networking, and not just among the other industry members, but particularly with your administration, because at least -- I'm not saying anything is going to change tomorrow, but at least building up those relationships is a key piece of that.

MR. GEER: Just to add to that, you can look at some of the very effective council members, and ASMFC commissioners, that have gone through that program, and they will all tell you how much they've benefited from it. You know, sitting at that table, and, if you walk in there, and if you're cold, it's tough. If you've had that class, it makes a big difference when you're sitting there, and you're going head-to-head with the stock assessment people, and you're understanding what they're talking about.

MS. SOLORZANO: Yes, but that's not your typical deckhand and your crewmate and --

MR. GEER: It's not for everybody, but the fishermen need to be involved.

MR. MERRIFIELD: If you want to be on the council, or be involved in the council process, that's an eye-opener, and I haven't been to it, but I know people that have, but it tells you the processes and the things that are required by -- Things that they're required to do in order to make these management decisions and how that process works all the way through to being published.

MR. WILLIS: I understand your point. However, I think what we need is we need to find the new captains from that, and that's the reason why I raised the issue, is they need to -- They will never be an expert, but they need to understand the language, and know who to call, and when to call. I mean, Trish, and I will pick on her again, and she was talking about my friend Larry, and he used to call her all the time about why is this closed, and why is that not closed, okay, as a shrimper.

If you don't go and do that type of stuff, it's not going to be successful, and so what I'm trying to -- I would love to find, in each state, a hundred future leaders, or future captains, and most deckhands, because I was deckhand once, years and years and years ago, and, crap, after a summer, I never went back, because of how hard you work, but what we want is those people who can go to that next level, and I think they've got to understand. They need to understand it, because the game is up. It's higher than it used to be on that situation, and that's why I raised it.

MR. FLUECH: It's a fantastic point, because -- I completely understand what you're saying, and it's a lot of details, and you're right that your average person would say that I walked away going huh, but at least understand the process. The other thing, and, again, this isn't just one or the other, because like the young fishermen's stuff is really just -- Safety was the first thing we heard. When we started talking to industry members, first thing first, and especially a seasoned captain. Like, if I'm going to take someone who is that green, they need, I mean, basic stuff, and so just starting there was a big thing, but the leadership aspect, too.

You know, if you look at the agriculture industry, and you look at their connections with legislation, agriculture has lots of leadership programs early on, and often, so they know how to make those legislative connections, and they have influence, and they're starting -- MREP is a good start, but you are starting to see -- I know Louisiana Sea Grant now -- I think they just went through their first cohort, just trying to understand and get even industry leaders to understand who are your legislators. I mean, at the end of the day, how is -- You know, at a local level, a state level, a federal level, and so it's going to be multi-pronged, but they're trying to get that -- To educate the next generation of leaders, so that they have that voice at the state and federal level on the hill.

MS. SOLORZANO: Well, I know, as a woman, having ran shrimp boats, I never took any of these courses or classes or anything, and I never got anybody hurt, and I never killed anybody, and I always got the boat back home, and so I don't know. I never took a class.

MR. FLUECH: The other thing too is you're seeing a lot more fishermen's wives associations, because those tend to be the business owners and the -- I mean, so that's kind of cool too to see around the country, a lot of these other associations, and I think that's another thing too, is we're also trying to do some cross-learning, because it's one thing if I'm telling you that, oh, do X, Y, and Z, but the other thing that I know is, like in South Carolina, they took some of their industry members up to Rhode Island, to say look at the industry associations and how they're working and hear from other fishermen.

So that's -- Yes, I think learning from each other is a huge asset, and I think there needs to be more capacity on that, because you have knowledge and experience that I would give my left leg for, and I do think that's a valuable piece, but trying to find the capacity, because you're probably working fulltime, and that's the other part to, is how do you develop these associations when everybody is already stretched to the limit.

MS. SOLORZANO: My youngest son made a comment to me, not long ago, and I told him, why don't you take your kids shrimping with you, that are little, and he says, I can't do that, and I can't run the boat and watch them, and I said, well, I did with you, and he goes, well, you must not have took very good care of me, and you must have left me crying, and I said that you turned out pretty good after all that mental angst you got, you know, and so I said, well, I did it, and I can run the boat and raise kids and tote babies. He said, how did you check the oil, and I said, you survived, and here you are complaining that you were neglected, but, no, you weren't.

MR. MERRIFIELD: Okay. Any other Other Business? Then I guess we go into comment?

MS. IBERLE: Yes, if there is any.

MR. MERRIFIELD: Are we looking for comments around this table or just from outside of the room?

MS. IBERLE: Outside of the room.

MR. MERRIFIELD: Okay. Are there any comments from anybody not at the table here?

MS. IBERLE: If you're online, and you have a comment, go ahead and hit that raise-hand button, and we'll see it, and then we can unmute you. I will give it a minute.

MR. MERRIFIELD: Okay. We have no comments. Yes.

MR. GWIN: I just want to thank everybody, staff and AP members, for allowing me to come to this meeting. It's really educational, as being a newbie in the shrimp fishery, and I can't wait to get home and tell everybody what I learned. Thank you.

MS. IBERLE: I know I'm a newer face, but please reach out anytime. I'm here to answer your questions and help you all with the council side of things, and so don't hesitate to reach out.

MR. MERRIFIELD: With that, I would like to thank everybody for coming, and thank everybody that put this together. I know it's a lot of effort to do this, and I appreciate the opportunity to give our two-cents into the process. Thank you very much, and the meeting is adjourned.

(Whereupon, the meeting adjourned on April 25, 2024.)

- - -

Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
June 28, 2024

Attendee Report: April 2024 Joint Shrimp and Deepwater Shrimp AP Meeting

Report Generated:

04/29/2024 11:55 AM EDT

Webinar ID	Actual Start Date/Time
409-018-051	04/24/2024 01:23 PM EDT

Last Name	First Name
Council	South Atlantic

Last Name	First Name
Beyea	Taylor
Brouwer	Myra
Brunson	Jeff
CARMICHAEL	JOHN
Curtis	Judd
Dukes	Amy
Geer	Pat
Hadley	John
Helies	Frank
Jones	Nancy
Jones	Bryan
Klasnick	01Kelly
Klibansky	Lara
Mehta	Nikhil
Menegolo	Jean Paul

Merrifield	MIke
Murphey	Trish
Putman	Nathan
Schmidtke	Michael
Solorzano	Damien
Thompson	00Laurilee
Travis	Michael
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Duration	# Registered	# Attended
3 hours 40 minutes	32	26

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Attendee Report: April 2024 Joint Shrimp and Deepwater Shrimp AP Meeting

Report Generated:

04/29/2024 11:56 AM EDT

Webinar ID	Actual Start Date/Time
409-018-051	04/25/2024 07:44 AM EDT

Last Name	First Name
Council	South Atlantic

Last Name	First Name
Bloom	Jeffrey
Brouwer	Myra
Brunson	Jeff
Byrd	Julia
CARMICHAEL	JOHN
Curtis	Judd
Fordham	Sonja
Geer	Pat
Gervasi	Carissa
Hadley	John
Helies	Frank
Iberle	Allie
Jones	Nancy
Jones	Bryan
Klasnick	01Kelly

Klibansky	Lara
Lee	Jennifer
Mehta	Nikhil
Merrifield	MIke
Murphey	Trish
Neer	Julie
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Note: Laurilee Thompson appointed to SAFMC 2021

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shrimp AP 4/24/24

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