GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

GULF SEDAR COMMITTEE

Gold Nugget Hotel and Casino & Virtual — Biloxi, Mississippi

August 21, 2024

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Ryan Rindone.....Lead Fishery Biologist/SEDAR Liaison
Bernadine Roy.....Office Manager
Carrie Simmons.....Executive Director
Verena Wang.....Fishery Biologist

**OTHER PARTICIPANTS**

Gary Borland.....SAFMC
Shannon Cass-Calay.....SEFSC
Frank Helies.....NOAA
Paul Mickle.....SSC
Clay Porch.....SEFSC

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The Gulf SEDAR Committee of the Gulf of Mexico Fishery Management Council convened at The Golden Nugget Hotel and Casino in Biloxi, Mississippi on Wednesday morning, August 21, 2024, and was called to order by Chairman Kevin Anson.

## ADOPTION OF AGENDA AND APPROVAL OF JUNE 2024 MINUTES ACTION GUIDE AND NEXT STEPS

**CHAIRMAN KEVIN ANSON:** The SEDAR Committee is Tab I, Number 1. The members are myself, Mr. Geeslin, Dr. Frazer, Dr. Sweetman, and Mr. Schieble. Item Number I on the agenda is Adoption of the Agenda. Does anyone want to -- We have a motion, and it's seconded. Any opposition? Seeing none, the agenda is adopted.

Next, that will take us to Item Number II, Approval of the April 2024 Minutes. Are there any edits, or changes, or the minutes? Seeing none, no opposition to accepting the minutes as written, we'll go ahead with Item Number III, the Action Guide and Next Steps. Dr. Simmons.

## SEDAR ASSESSMENT PROCESS CHANGES AND MODEL COMPLEXITY

**EXECUTIVE DIRECTOR CARRIE SIMMONS:** Good morning. Thank you, Mr. Chair. The first item on our agenda is the SEDAR Assessment Process Changes and Model Complexity. Dr. Shannon Cass-Calay is here, from the Southeast Fisheries Science Center, to review those proposed changes to the SEDAR process and some organizational -- Their organizational plan for addressing and implementing these proposed changes.

Dr. Cass-Calay will also discuss possible levels of model complexity which might be considered for various managed species relative to the data available for each. Dr. Paul Mickle, our SSC representative, will provide the committee with an overview of the SSC comments on this proposal, and so the committee should review this information, ask any questions, and provide feedback. Thank you.

**CHAIRMAN ANSON:** Thank you, Dr. Simmons. All right, and so that will take us to Item Number IV, the SEDAR Assessment Process Changes and Model Complexity, Tab I, Number 4. Dr. Cass-Calay. Good morning. Welcome.

**DR. SHANNON CASS-CALAY:** Good morning, everyone, and thank you for having me here. I would very much like to talk to you about some of the process changes the center is recommending to improve SEDAR, and I will also be talking a little bit about the center's ongoing efforts to improve data provision in general.

I think the need to improve the current process is probably apparent to most. Our current process features many disparate pieces of data that come from many different partners and states, federal governments, and academic partners. There are many data flow dependencies, where one data provider passes information to another for a subsequent analysis before it is passed to a stock assessment lead to put into the assessment model itself.

The environment we operate in contains a large number of panelists and public participants and features very high transparency, and this often leads to numerous meetings and to very complicated models that may take a very long time to complete. Our post-SEDAR evaluations often occur. The SSCs, or the councils, may request additional information to support management, and so it's very frequent that, after the SEDAR process is complete, we are still conducting analytical work to support managers, for many months, or even years, but there are many unassessed species, and assessments of key stocks are quite infrequent for many stocks, and the gap year between the last year of stock assessment data and the management action that must take place is quite long. It can be years.

Right now, the concern is that, even though the assessment model itself may be quite high quality, and quite reliable, the terminal year of the data is simply obsolete before the management action has to take place.

Our current process also has very limited flexibility to address any emergent need that may occur, where an SSC or council, a management body, wishes to have information about action that's taking place on the water, for example a red tide, and, of course, our resources for stock assessment at the center are not increasing, and they may in fact continue to decline, which puts us in a difficult position.

This is a timeline showing you how long SEDAR projects have taken, from about SEDAR 10, which was gag grouper, conducted many years ago, to SEDAR 85, and you will see lines, in red, that indicate one year, two years, or three years duration of a project, and so the blue parts of these bars show you the part of the project that is devoted to data provision, and the green bars typically show you the part of the project that is the assessment process itself, and the green bar, the dark green, is the quadrant where we prepared the management advice for an SSC, although there may be subsequent work that occurred afterwards.

The point of this figure is that our projects were going along and

taking about nine to twelve months for a number of years, and then there was an initial increase in their duration, to about two years in duration, and that occurred with the first adjustment to FES, from CHTS to FES currencies, and all of the additional work that was done to support that change, or to understand it, to understand that change.

Where you see the red arrows is where we've started to introduce research track assessments. Those were actually designed to improve efficiency, but, unfortunately, they actually increased the duration of projects substantially, and so the research track assessments -- Some of them have taken in excess of three years, and are yet to produce the management advice, and so that clearly did not improve the efficiency.

At this point, you know, we really need to talk about a paradigm shift, and, many times, you have seen this diagram that shows you that, if your objectives are good, fast, and cheap, it is not possible to have all three, and so I think, for a long time, we've dwelled in that diagram and said that, because it is not possible to be good, fast, and cheap, we will focus on being slow, but thorough and high-quality.

Now, that has some element of truth to it, because it's important that the work we do is of high quality, and that, you know, it is done correctly, but there are new techniques becoming available that may allow us to provide robust management advice that meets the objectives of fishery managers in a much more efficient process, and so we need to take some time, at this point, to examine these new methodologies coming onboard and determine how we could provide more timely, and more frequent, information to fishery managers that is robust to scientific uncertainty.

In order to start talking about how we move forward with SEDAR to better meet the council objectives, the center actually did sit down with members of the council staff, from both the South Atlantic and Gulf Councils, to talk about what needs to be accomplished, and I will just start with the South Atlantic Council, which said that timeliness is urgently needed, and, by that, they meant that the terminal years of our stock assessments are too old. The data are obsolete before the management action takes place, and so we need a recent terminal year.

We need flexibility to address issues that emerge, that are unexpected, and we do need to maintain, or increase, our throughput of management advice, but, by that, they mean that they need updated catch recommendations for each stock more frequently, and they did recommend that some effort take place to right-sizing of

stock assessments, meaning do the level of complexity that is warranted for that species, but do not exceed the quality of the data itself, and they wanted to make sure that stock assessments have the appropriate level of review.

The Gulf Council had very similar concerns, and this is Gulf Council staff. In addition, they discussed the need to make sure the assessments are accurate and reproducible, that we continue to improve access to data, including the fishery-independent indices, and that we improve efforts to automate data provision.

They wanted to make sure that we give long-lasting catch advice, meaning that the catch information that comes out of a stock assessment is valid for many years and can be updated, as needed, through such things as routine stock assessment updates, updates of projections, and interim assessment, and they also want to make sure that we don't abandon transparency and thoroughness in this process.

Some of the recommended changes from the Science Center is that we eliminate some of the nomenclature that SEDAR uses, including the concept of research track and operational assessment processes. This seemed to lock us into certain expectations with the SEDAR project definitions that were unnecessarily restrictive.

We also talked about eliminating the slot concept, and the reason for that is that not all stock assessments are the same. A typical age-structured stock assessment, with minimal changes, can be completed in as little as six to nine months, but some of the SEDAR projects were taking in excess of three years.

We talked about how additional features add additional time to projects, and these features include stock ID workshops, in-person data workshops, excessive number of assessment webinars, topical working groups, CIE review, and SSC rework. Now, none of these things are bad, right, and some of these things are very appropriate, and necessary, but they do add additional time to projects, and we talked about identifying key stocks of each council, and prioritizing these stocks, so that we can put them on the calendar in the priority that we believe the council has identified.

We talked about how remaining stocks, that are not identified as key stocks by a council, could be assessed using less time-consuming approaches.

What would that process look like? I'll be honest with you that we are still in negotiations with the councils to make sure that

the process looks -- That it can achieve the council's objectives as well as the center's objectives, and so this is still a little bit fluid, but I'll tell you where we are.

What we want is to create a very predictable calendar, a rotating calendar, that allows our data providers to better plan their workload and improve their timely delivery of data, because the chaos that happens sometimes with SEDAR calendars is not very productive for our data providers, and we want to create a calendar that allows us increased flexibility to address an emergent need without disrupting other SEDAR projects.

We also want to make sure that we're increasing the throughput of management advice that we provide with this approach, and that would be using the SEDAR process and as well as innovative approaches, such as interim assessments, and potentially management procedures, that are evaluated in an MSE framework.

This is a pre-decisional calendar for the Gulf of Mexico, and projects that are stock assessments that you see -- The blue squares are the data provision, the yellow squares are the assessment process, and the green square is the quarter that we would intend to provide the report of that project, and it shows you, in in the highlighted boxes, the key stocks that have been identified to-date by the Gulf Council, and so it shows you how those key stocks are assessed.

We would assess them with a SEDAR process somewhat less frequently, maybe every six years, as it shows on this calendar, but we would provide updated management advice every at least two to three years, every two years for key stocks, every three years for lesser-priority stocks, using either -- You know, using a less cumbersome approach, such as an update assessment, using the available data, or an interim approach, or a management procedure, and so you would be receiving new catch information every two to three years for the assessed stocks in the Gulf of Mexico.

Okay, and so now I would like to talk a little bit about what the center is doing to try to improve data availability for stock assessment, and so we've put a lot of time now into mapping the data flow and our data delivery timelines for stock assessment. I will talk a little bit about some of the data provision improvements, a little bit about our efforts to understand data availability for stock assessment in a gap analysis, and a little bit about appropriate assessment complexity.

This is a schematic that Vivian Matter put together, in cooperation with all of the data providers in the Gulf, and it shows you, in

this table, all of the data products that are necessary for any SEDAR project, and, in the green, it shows you the time period that that data is collected in a year. In the yellow, it shows the time it's taking, in months, for that data to be accumulated, to be processed, aggregated, and quality controlled by the data provider, by the program that actually provides that data.

In blue, it shows you when the raw data, that is QA/QC'd and aggregated, is made available for our data analysts at the Science Center to do subsequent analyses that are necessary. In that kind of brownish-tan color, it shows you the time it takes our data analysts to create, for example, the input file that's appropriate to go into the stock assessment itself, and, in red, it shows you when the data is actually available for the stock assessment analysts, and so the point of this figure is to show you that there are certain data inputs that are taking up to two years after the data are collected for them to be provided to the stock assessment process, and those are the bottlenecks that we're trying to solve.

The largest bottlenecks we have right now are in the creation of the composition data, in particularly the length and age composition data, as well as the plankton surveys, and the problem with the plankton surveys right now is that that data does need to be shipped to Poland for the larvae to be identified, and so that can be quite a time-consuming process.

The next step is so there are many efforts going on at the Science Center to improve data availability, and I am not the expert in these efforts, but Alan Lowther is here, who knows even more than I do, but there are many efforts right now to standardize, and to automate, typical processes that are used to provide data at the Science Center, and a number of these are almost complete, or they might be complete, and that includes finfish commercial landings, recreational removals, the length data, and the observer data that come from those programs, and that is nearly complete.

We also have automated documentation now that's available for many times of reports and documents that we create, and this is essentially using a programming script to draw directly from a report file, or from a data file, and create an automated report.

We are conducting a great deal of research right now to try to identify and develop advanced tech, or genomic solutions, to rapidly analyzing age composition information, and so FTNIRS is a visual and machine learning technology to age fish, using the otolith or the scales, and we are also looking into epigenetic ageing, which uses fin clips, in a non-lethal methodology, to look directly at DNA methylation to determine the age of fish, and it's

very promising. You heard a little bit about it, I think, from Will Patterson.

We're also looking at artificial intelligence approaches to identify the fish species in all of our camera surveys, and this is actually quite advanced at this time, and it's a great improvement to efficiency.

One of the processes right now that is still the bottleneck, a bottleneck, for stock assessment is the age composition data. That does require additional attention, and we are aware of it, and it's a high priority for the center.

All right. Just very briefly, we've talked a little bit about right-sizing stock assessments, and, just for your information, these links, in this presentation, and maybe not the PDF version, but they should be live, and there are many, many approaches that can be used to conduct stock assessments.

We typically use what's called statistical catch-at-length, or statistical catch-at-age, methodologies, Stock Synthesis, and these are amongst the more complex approaches that could be used. There are simpler approaches, such as index-based, data-limited approaches, as well as surplus production models and VPAs, which are probably familiar to some of you.

We did a gap analysis, now years ago, and, to some extent, this is somewhat obsolete, because we've improved information since then, but the point of this figure is that, where you see 4s and 3s in this figure, it really means that we have access to appropriate data, at this point, to use age or length-structured methodologies, and so, for most of our assessed species, the data are sufficient to be using the more complex approaches.

For many species you see on the right-hand side of the figure, the data are less high-quality, or they're less appropriate for an age-structured model, and that might be the table where you start seeing that the assessment model that's appropriate might be a data-limited methodology.

We have made a remarkable improvement recently with our collaboration with the state partners in the development of the GFISHER index, the GFISHER survey. There are many species now that we can create an index of abundance using GFISHER. Some of them are identified by the council as key stocks, and those appear in red, but, also, a number of our assessed stocks, that you see here in black, we can also create an index of abundance using GFISHER information, and we may be able to use GFISHER also as an

index for some of the unassessed stocks that you see in blue. Those could be used perhaps in a data-limited -- In a less data -- Or a data-limited approach, or a less data-intensive approach.

I did say that complex models are more the norm. We typically do use those data-rich approaches. It is likely that, for some assessments, that they may be more complex than what is supported by the available data, but, even more importantly, we need to consider the resources that are needed to support that complexity, and it can be that it might be unwarranted if the priority of the stock, or the importance of the stock, is low.

In addition, I would say that added complexity -- In general, I think most would say that it tends to improve a stock assessment, but one must also consider the timeliness and frequency of the management advice, and there is an appropriate balance between the thoroughness and the timeliness of management advice, and so, right now, we're set up to provide you with few stock assessments, infrequently, but those stock assessments, we think, are, you know, pretty high quality, but if -- You know, if the data are already three years old before the management advice can be created, that is a problem that we have to solve, right, and so that's what I'm talking about with this balance between all the investment into creating a single stock assessment, versus an approach that gives us the ability to be timely, but also give you advice that's robust.

The Science Center will have to continue to work with cooperators, and SSCs, to identify that appropriate assessment complexity and to make sure that the techniques that we intend to use are well studied and well justified.

Of course, there are other ways that we can increase throughput of management advice, and they are more procedural in nature. We could use processes that use as few as possible webinars and workshops, and so we could do it when it's appropriate, but not do it when it is unnecessary.

We can make much more frequent use of update assessments, or updated projections, and we're at a stage right now, with the data availability, where we could do updates pretty quickly with the data that are available at a particular deadline. It may be that the assessment, the update assessment, cannot use all of the most recent age composition data, but we can use the available indices, the landings data, et cetera.

We think we can do more as the data automation improvements are completed. That should allow us to have more throughput, and we

think also that we could use, more frequently, data-limited methods, interim analyses, and management procedures, particularly between the complicated stock assessments, to give you updated advice more frequently than we do today, but this does require some additional research to further define and develop, and so we are prioritizing that research right now.

There are some next steps. We will continue to talk with councils, with SEDAR cooperators, with the council staff and the SSCs, to establish and describe this improved process and to develop the standard operating procedures. We need to develop the detailed project schedules for the 2026 stock assessments. We have an agreement now of which stocks will be assessed, but the detailed project schedules need to be completed, and we need to continue the research and development activities to improve the quality and timeliness of fishery management advice.

We are conducting some of that work through desk MSEs right now, and one of them is to evaluate various management procedures and interim assessments against the council's stated performance metrics. I think that that is all, and I did want to thank you, and, if there is time, I can answer a few questions.

**CHAIRMAN ANSON:** Anybody have questions? We have a couple of questions. We have Mr. Sanchez, followed by Captain Walker.

**MR. JOHN SANCHEZ:** Thank you. This is very encouraging, by the way. I wanted to ask you about cost differences, because I was very excited to hear, you know, you're finding new methodologies to do age composition sampling, non-lethal to the fish, and are there any dramatic cost differences in that approach versus traditional, or is it cost-effective?

**DR. CASS-CALAY:** It is cost-effective. In fact, we think it will be extremely cost-effective. The initial -- There is a RESTORE Act project that's still just a proposal at this point, that the Science Center has worked with Will Patterson and Dave Portenoy to develop, and their estimates, at least, were that, even today, it's a little bit cheaper to do age composition using an epigenetic technique than to read the otolith. Those advantages, you know, will continue, once the process can be operationalized.

**MR. SANCHEZ:** Thank you. That is more encouragement. Thank you.

**CHAIRMAN ANSON:** Captain Walker.

**MR. ED WALKER:** Thank you. I just wanted to express my appreciation for the more, as you put it, throughput process of like updates

and interim analyses. Those are really helpful, rather than, you know, waiting -- Sometimes waiting for the long assessments, and, you know, we're not afraid to ask for them. You know, if they have an issue on a species, I don't feel like it's asking too much for an update, or an interim analysis, to help us make a decision on something that has changed in the timeframe of the assessment, like king mackerel or something like that, where something major has happened in between, and so I appreciate what you guys are doing, and I just wanted to let you know that.

**DR. CASS-CALAY:** Thank you very much.

**CHAIRMAN ANSON:** Dr. Sweetman.

**DR. C.J. SWEETMAN:** Thank you, Mr. Chair. I appreciate the presentation, Dr. Cass-Calay. I am -- I like this process. I think that it could just greatly increase the efficiency of some of the challenges that we're dealing with here, as it relates to timely management for some of these stocks, and so I'm wondering about -- Maybe it may need to be fleshed out a little bit more, but some of the data-limited approaches that we'll be working on there, or that you guys will be working on in the SSC, and so I guess my question there is, recently, you know, we've been kind of using interim analyses, and things like that, as kind of a go-between in between assessments.

For the most part, they've been kind of used as health checks, thus far, and so I guess I'm wondering how some of these data-limited approaches will be utilized for management advice, or catch level adjustments, and things like along those lines, and, along those lines, would those data-limited approaches not be utilized for stock status, and it's only for catch advice, and is that my understanding? Is that correct?

**DR. CASS-CALAY:** Okay, and so I want to say a few things about that. What we're calling those interim assessments, in this graphic that I have created, that could be an index-based approach, like the ones that we have used before in the Gulf, and it could be an update assessment, using the available data, just a quick update, and it could be simply updating projections with the available information we have about removals or indices, or it could be a true data-limited approach, such as iSlope, you know, some of the tools that are in the DLM Toolkit that maybe you're heard of, that are typically index-based.

You know, it could be a simple stock assessment methodology, such as a surplus production model, but what is needed right now is to actually evaluate how well each one of those approaches achieves

fishery management objectives, such as, you know, maintaining stocks in a healthy status, and preventing overfishing, while maximizing yield, and that is -- It all can be tested in a desk MSE environment, and that's -- You know, that is what we are trying to do right now with some of the research the center is supporting, is to evaluate those approaches, to determine which ones are most likely to meet the needs of fishery managers, and that actually might different between species.

There's a little bit of research to do, but I think that -- I just want to make sure you understand that interim assessments have sometimes been used as health checks in the Gulf, but we could also, for example, schedule an update assessment, if that is felt to be the more reliable source of information, and that could be done between the more complex assessments, just to look at, you know, what new information is available, in a quick update context, with available information.

**DR. SWEETMAN:** Thank you for that. Yes, that's helpful, and I appreciate the further explanation there. I just -- I know our SSC has struggled, a little bit, along those lines, relative to being comfortable making adjustments to catch level modifications based on maybe just an index-based thing, along those lines, and so I'm wondering -- Obviously this has got to be fleshed out, and it's going to be different for every species. The data that you have available for them is going to be completely different, and I know it's going to have to be fleshed out a little bit more.

How does that like independent reviewer, like a CIE review for these data, and is it going to be that same process, or is that only going to be for the key stocks? I'm just kind of wondering along those lines, too.

**DR. CASS-CALAY:** So that's a good question, and that's something that certainly I intend to discuss more with the Gulf Council staff. I think, in general, the SEDAR assessments that are scheduled would still feature either a CIE review, or, in some cases, where limited changes were made, they might go directly to the SSC for review.

The interim assessments that occur, if there is a desire to conduct more evaluation of those besides just an SSC review, then, you know, we could talk about how to schedule, for example, a procedural workshop for SEDAR that might feature an additional level of review, and that might be for establishing, you know, the scientific basis for an approach that we intend to take for one or more species.

**CHAIRMAN ANSON:** Mr. Geeslin.

**MR. DAKUS GEESLIN:** Bernie, would you pull up Slide 10, please? Thank you, Dr. Cass-Calay. I really appreciate you giving us an under-the-hood peek of what many of us -- What many of us perceive as a big old black box, and so I appreciate you doing that.

Earlier, you mentioned that, you know, traditionally, this has been a slow and thorough approach. I'm hoping that we are gaining a little more comfort in moving towards a faster and sufficient approach, and I understand there is tradeoffs associated with a more, you know, faster and sufficient approach. This slide here, there's a lot of data streams shown here, and how much of that is in your control?

**DR. CASS-CALAY:** Well, that's a very good question. In my control, none of it. Clay -- You know, a lot of this in the center's sphere. Some does come from state partners.

**MR. GEESLIN:** Understood.

**DR. CASS-CALAY:** You know, we have -- We have -- The part that's in my control is the part that's shown in the amber-orange color. That is the work that's done by the data analysts that are in my division, and so they would be actually taking a data product from a -- From a, you know, state partner, or from one of our federal laboratories, and they are doing what is needed to turn that raw data input into the data input that is put into the stock assessment, and so that might be creating a CPUE series, and it might be creating the weighted age composition data that essentially corrects for non-representative sampling, but the green and the yellow is largely in our -- It's either in our FST branch, or even within a state partner, purview.

We are working together, to a large extent, to try to improve these methodologies, and so the work that the center is conducting is actually very much in collaboration with the data providers at the state and academic partners, to try to automate, and to better standardize, all these approaches.

**MR. GEESLIN:** That was somewhat of a softball question, and I understood that much of this is out of your control, and much of this reliant upon others, right, and so we all play a part in this. We all play a role, and responsibility, in conducting these research projects and getting that data over to you all in a timely fashion.

**DR. CASS-CALAY:** Thank you.

**CHAIRMAN ANSON:** Dr. Simmons.

**EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair. I just wanted to circle back to the interim assessments that the council has asked for, and used, and, I mean, sometimes they have been health checks, and sometimes they have been used to change catch advice.

Some of the reasons for that are really because the management process has taken so long to get things implemented, and so it's not just the Science Center.

It's our side of the house too, that we're trying to work on improving, you know, regulatory streamlining and that kind of thing, and we did get some funding to look at that effort, through our Inflation Reduction Act program, and I think I gave you guys a presentation, a year or so ago, on how long things were taking, and so that is one think we are very interested in doing, and we're working with the Regional Office staff on that.

I mean, for example, lane snapper is a tiny increase, right, 60,000 pounds, and we still don't have that implemented yet, and so there's improvements on our side of the house too that have held up whether or not we can utilize the interim analysis approaches with changes in catch advice.

**CHAIRMAN ANSON:** Dr. Sweetman.

**DR. SWEETMAN:** I wasn't trying to put the blame on anyone there, and, quite frankly, it's the entire process that we have here that needs to be more efficient, and it's not just the stock assessment, and it's how we utilize that. Understood.

**CHAIRMAN ANSON:** All right. Not seeing any other questions, Dr. Cass-Calay, thank you, and thank you to you and those that work in your bureau, as well as those in the Science Center, to try to make inroads into improving the process and to be a little bit more open-minded, potentially, in trying to effect some change, and so we do appreciate your efforts, and we look forward to seeing further reports as you make progress in that effort. Thank you.

**DR. CASS-CALAY:** Thank you, and I should also thank Julie. The SEDAR coordinators have been very helpful in this process as well, and we're definitely working in collaboration. Thank you.

**CHAIRMAN ANSON:** Next, that will take us to Item IV(a), SSC Recommendations and Feedback, Tab B, Number 9(b). Dr. Mickle. Good morning.

## SSC RECOMMENDATIONS AND FEEDBACK

**DR. PAUL MICKLE:** Good morning, Mr. Chair. All right, and so Shannon, Dr. Cass-Calay, did a great job pretty much talking about the SEDAR assessment process and some of the bottlenecks, and the SSC was presented similar materials, and this is a compilation of SSC comments, and discussions, from our last meeting.

The proposal that Shannon talked about -- I just wanted to emphasize that it's the twelve/eight concept, and so twelve species every eight years, which was discussed at our last meeting, with updates between full stock assessments. The approach is to match assessment complexity to the available data and focus on key stocks and provide consistent, predictable stock assessment advice with some capacity for unseen needs, so that there's a balance there, and I think you all discussed that briefly here today.

Data sources, again, just to repeat a little bit, remember that we've got to understand that it's independent and dependent data, fishery, and then fleet-specific data and GFISHER for the Florida-centric species, of course, and the composite video survey data.

The timelines, delays in age composition, data availability, timelines for data inclusion in stock assessments, and then, for model complexity, considerations for matching assessment methods to data availability and the need to address uncertain or biased data, like we heard from with the ageing for triggerfish and those things.

Technology integration, I think everybody is at least aware, and is starting to get excited about, the capabilities of AI and the perception of how this could be of value to the stock assessment process, to improve video data processing, with incremental advancements, especially for red snapper. My institute actually is involved with that, and it's very exciting to be a part of.

All right, and so there is need to clarify expectations for management updates between assessments, and so we need to understand the steps of that, and the presentation here today was very helpful toward that. Processing time, there is a potential reduction in video survey processing with AI and an inquiry into AI application for plankton surveys, and so being able to automate that is -- You know, it actually improves accuracy, and it reduces costs, and it's not an expensive first step, like Shannon mentioned, and so some of these technologies are very affordable.

With video, it's more simpler, but, when you talk about the ageing

structures, and the hard bones and the otolith efforts, you've got to think about the steps involved with that, with cutting the otolith, right, and slicing -- Removing and cutting and laying down and mounting and reading, re-reading by a different person, and then validating, QA, and that's a lot of steps.

When you automate half of those, prices, or costs, decrease very quickly, and efficiencies increase very quickly, and so it's just a very easy concept to understand. Automating data, creation all the way to archive, is paramount, and it was discussed at the SSC meeting last time.

Let's see. Assessment pairing, reconsideration of statistical catch-at-age models to reduce processing error and enhance data collection, and then, council discussions, plans for the October 2024 -- At our SSC meeting, to discuss how to proceed with SEDAR process changes by species, and so, like Shannon said, this is an evolution in our working effort, and we will definitely be on point to provide an SSC scientific opinion on those changes.

Balancing consistency and flexibility in the actual management of the species, the question of how to balance consistency and the need for updates and changes, and that's something that I think this group is getting better at. It's just difficult to understand the balance, and so Shannon alluded to the processing and the questions here of control and the data aspects, but it's all -- I'm sorry. The question of assessment versus update and those different things.

We all want these things, and we need to understand what each change, different from update projections, and then a full stock assessment, and what it actually means, and then the cost of it, because the Science Center has to balance all of this, and the costs is an important thing to keep in the discussion.

Council representative, Tom Frazer was at our meeting, and he emphasized the need for predictable management periods, and then insight from the SSC is stable management allows for better assessment of stock response to management changes, and, you know, that's just -- You know, these stocks, they respond to fishing effort, obviously, ecological changes, things like that, but, when management changes occur, it affects the way that the models can project backwards and get consistency and strength, looking forward, to reduce and increase inference.

When you think about -- When you do a management change, or multiple management changes, it has vast effects on a long-term historical-based model, which SS is getting better at, but, when

you think about how these things work -- Like, for example, amberjack.

You all have made quite a few changes with the management strategy of amberjack over the last ten years, and so it's really good that -- The increased data efforts there, but, again, you've got to understand that, when management changes like that occur, the models struggle with projections, when those things happen, because the age structure, which it's based on, is different.

I guess that's my last slide, and so I will answer any questions, but that was the perceptions of the SSC, and I will just take my SSC hat off, or I guess nerds take out their pocket protector, but, from a perception of data automation, a lot of folks -- They don't put a lot of resources into the data aspects, and we focus in on the analytical side, like the modeling side, and I think this group has done that really well. The Science Center is just incredible. Those analysts are second-to-none, and I'm always in awe, every time I'm speaking with them, and their efficiencies as well, but, you know, other countries that do stock assessment -- They put a lot of resources into the data creation, the data acquisition, the QA aspects, and that, obviously, was a major bottleneck presented here today by Shannon.

I know it's not sexy, but focusing on the data side, in the beginning, can have massive benefits, and I will put my hat back on and answer the questions, but that was just my opinion, and I wanted to make that clear. Thank you.

**CHAIRMAN ANSON:** Thank you, Dr. Mickle. We do have a couple of questions. Captain Walker, followed by Dr. Sweetman.

**MR. WALKER:** So I wouldn't say it's off-topic here, but, a couple of times today, I've heard the plankton surveys come up, and I recognize that -- You know, I understand that they take a long time, and I didn't know -- How many species -- Do all the assessments require, or input, plankton surveys, or is it just certain ones? Is it considered like a major input? I'm not familiar with --

**DR. MICKLE:** You're talking about the plankton surveys?

**MR. WALKER:** Yes, plankton surveys.

**DR. MICKLE:** Okay. I think I misheard you in the beginning, and so just the plankton survey? I would probably refer that to the Science Center, because they're more relevant to the data streams for each stock assessment, and each species, but it's my

understanding that it's not for all the species. Does anybody want to comment toward that?

**CHAIRMAN ANSON:** Dr. Porch.

**DR. CLAY PORCH:** That's exactly right. We do use it as an index of spawning biomass for a number of species, and so the number of larvae that you're intercepting out there, eggs and larvae, are an index of how much spawning potential there is out there, but we don't have that for every species. We have it for things like king mackerel, red snapper, although, for some of those species -- - Like, for red snapper, that's not our best indicator, you know, and we have longline surveys, and video surveys, for that, but, in other species, like king mackerel, that's one of the few fishery-independent indices we have, because we don't have a way to actually assess them directly.

**CHAIRMAN ANSON:** Dr. Sweetman.

**DR. SWEETMAN:** Thanks for the presentation, Dr. Mickle, and so the stable management allows for better assessment, and not having too many changes, and I understand how that completely can change the stock assessment model, and everything along those lines, and you used greater amberjack, and so I guess I'm looking for your insight here.

We basically have thrown the kitchen sink at greater amberjack, and we can't seem to get that stock moving in the right direction there, and so, I mean, there are limitations, for us at the table here, where we need to end overfishing, and we do need to make some changes here and there, potentially, to reduce that harvest, and so I guess what I'm wondering, from your perspective, and the SSC's perspective, is how us, as council members, better balance that to -- I mean, we do have things that we need to do. Sometimes we do need to make changes, just based on Magnuson requirements along those lines, and I understand that can completely blow up the stock assessment model, and then comparing one to the other is a challenge, and so any insight there for how to better navigate that, in light of some of those requirements we have?

**DR. MICKLE:** Dr. Sweetman, a point of clarification. Are you wanting my opinion or the SSC's? They're different.

**DR. SWEETMAN:** I will take yours.

**DR. MICKLE:** Yes, and so the kitchen sink, the bathroom sink, and everything has been changed on amberjack. Amberjack is a very seasonally-focused species, and it's a good business model for the

federal for-hire fleet, and so there's a lot of interest there.

I think what got us to a point where the investment is, from what Sean Powers' shop is doing right now, with the abundance efforts, and the way, in my opinion, we've been briefed on the initial efforts of his work, it looks like it's going very well, and he's doing it the right way, where the standardization is going to provide some very valuable data, but, again, when you change more than one thing in management -- When you change two or three things, we all have to understand that that has a short-term impact and a long-term impact on projections.

Adding more data may compensate, and so I'll be optimistic in saying that the recommendation, from my personally, is to let it play out. Take like a full assessment and identify the variabilities from the management changes, really not only look at the projections, but look at the data that's going in on an annual basis, and that retrospective analysis that the center will do on amberjack will be very informative on the management changes, and that is my opinion.

When you change things retrospective, you remove one year at a time, and you start looking backwards to see how it moves and shakes, the model performs, and so, when you actually do that, it will hopefully provide a little bit of light on the management changes that this group has done, and it may show that, you know, it's working, or it may not be working, but I think leaning on the fishermen to provide public comment is huge with amberjack. It's huge. Thank you.

**DR. SWEETMAN:** Thank you for that.

**CHAIRMAN ANSON:** Thank you. Any other questions for Dr. Mickle? Not seeing any, thank you, Dr. Mickle.

**DR. MICKLE:** Thank you.

**CHAIRMAN ANSON:** That will take us to Item Number V on the agenda, SEDAR Steering Committee Summary Report, July 2024, Tab I, Number 5. Dr. Simmons.

## SEDAR STEERING COMMITTEE SUMMARY REPORT JULY 2024

**EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair, and so I have a short -- Staff has a short presentation for you, for your information, from the July 29, 2024 SEDAR Steering Committee meeting. It was a webinar. The committee should listen to the briefing, ask questions, and provide feedback to us. Bernie, could

you pull up Tab I, Number 5, please?

Again, we met via webinar on July 29, and we covered these items. We got an update on the SEDAR projects, and we received a similar presentation from the Science Center on the process changes and data efficiencies. We reviewed and requested changes to the stock assessment schedule for 2026 and beyond.

Just an update on where we are, and this is just the Gulf assessments, and not the South Atlantic, Caribbean, and Highly Migratory Species work that's also ongoing, and so, for penaeid shrimp, they're planning assessment webinars, and those are planned to start in September of this year, and go to February of 2025, and then the review workshop -- The report would be available for a review workshop in June of 2025.

For mutton snapper, that review workshop is right around the corner. That's going to be in September, and then, yellowtail snapper, we have fall -- We have several webinars, assessment webinars, for the fall, and then the SSC will review it after that, and so we are working with the South Atlantic Council staff right now to coordinate those two assessments with them, because those are jointly managed stocks, and they straddle the Gulf and South Atlantic.

For red grouper, that assessment report is also due in September, and that will be going to the SSC in October, I believe. Red snapper, the data workshop -- We're going to try a benchmark assessment, and that's going to start in December of 2024. We'll have assessment workshop webinars in April through October of 2025, and then a review workshop in March of 2026.

Some of the discussions that the committee had on the information that was presented regarding this new process is we reemphasized, you know, how the key stocks approach was going to work, and we discussed the consistent intervals for updating management advice, which you've been briefed on, and we discussed those less-data-intensive assessment techniques.

Some of the proposed next steps, from that presentation that were discussed, is they would continue to receive council feedback on the initial recommended changes, they'll work with the staff to establish and describe processes and confirm the council's assessment priorities for the age-based assessments, and we emphasized, and they emphasized, this work really needs to start in 2026, for these assessments, to get this process going. Then we discussed the project schedules for the 2026 assessments.

The green is the approved assessment schedules, and this is pretty coarse, as far as the timing goes, and I think Dr. Cass-Calay mentioned there's a lot of details that still have to be worked out with that, and the orange is pending, and the blue is requested.

The Gulf also requested that cobia be done in-house, hopefully, by the Science Center in 2025, maybe using one of those data-limited approaches, or management procedure approaches, because there wasn't a lot of changes to the model anticipated. Then the council directed us to send a request to the Science Center on lane snapper, an interim analysis, and that letter -- I think it was distributed Monday, requesting that of the Science Center. I think that's it. Any questions or feedback?

**CHAIRMAN ANSON:** Any questions? All right. I am not seeing any, and we'll move on to Item Number VI, SSC Recommendations, Tab B, Number 9. Dr. Mickle. This will be Management Strategy Evaluations Overview and RESTORE Project Update on Stock Assessment Projections.

**SSC RECOMMENDATIONS**
**MANAGEMENT STRATEGY EVALUATIONS OVERVIEW**
**RESTORE PROJECT UPDATE ON STOCK ASSESSMENT PROJECTIONS**

**DR. MICKLE:** Good morning again. This work was completed by Dr. Vaughn, a NOAA affiliate. Just for reference, this is a five-year RESTORE initiative to develop modeling strategies. It's to enhance stock assessment methods and improve overfishing limit and ABC, acceptable biological catch, decision-making in Gulf fisheries, and it's to really focus on the realism and accuracy of the projections, throughput and robustness of management advice, and then model interpretability and uncertainty quantification, to try to provide that uncertainty in a quantitative sense.

Projection is simulations for estimating reference points and short-term OFLs, and the factors considered are future fishery dynamics, ecosystem effects, selectivity-based MSY estimates, discards, and more.

Red tide mortality, we've talked a lot about it in the past, and Dr. Vaughn looked at it and applied age-specific mortality rates for gag, and a single rate for red grouper, and so, instead of just treating it as a fleet, he added the complexities there. Simulations included red tide as a discard fleet, including SSB, and then potential options is to incorporate average red tide mortality in all projections or adjust SPR, and those are proxy targets.

As far as selectivity-based MSY adjustments for different fleets and allocation changes, MSY and OFL estimates consider single-fleet projections and compare to managed allocations. It was looked at with big-eye tuna. Although that doesn't fall within the purview of this group here, it's novel enough, but it has been done before.

Discards were estimated proportional to fishing effort at OFL. Consideration of closed season discards and litigation risks from overfishing out of season, and solutions are set fleet-specific F in projections or adjust retention rates.

Management advice throughput and what's next, it's data provisioning and automation, and we've talked about it here today in multiple presentations, increased frequency and robustness of management advice through interim analyses, and, like I said before in the last presentation, understanding the interim value there of what an interim analysis provides, and not to be misleading, but to understand some directionality from a potential management change. Let's see. The importance of representative indices in handling retrospective patterns, and I mentioned that before.

Next steps is regular progress reporting to the SSC. As this is a somewhat new approach, and being able to look at these projections in a different way, it's important for the SSC to weigh-in on it. Consideration of social and economic factors in project outcomes, and that was mentioned at our meeting, and, also, further integration of discard mortality in future catch allocations, and so trying to understand that discard mortality, and it was discussed yesterday. It's a big unknown, and more research is needed. Thank you. Any questions?

**CHAIRMAN ANSON:** Any questions? Not seeing any, thank you again, Dr. Mickle.

**DR. MICKLE:** Thank you, all. Have a good week.

**CHAIRMAN ANSON:** So that takes us then to Other Business. There wasn't any other business brought up at the beginning. Is there any other business now to be discussed? Seeing none, that will conclude the SEDAR Committee.

(Whereupon, the meeting adjourned on August 21, 2024.)

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