

Scientific and Statistical Committees
Scope of Work
March 7 – 9, 2023
Tampa, Florida

Agenda Item IV: Selection of SSC representative for the April 3 – 6, 2023 Gulf Council Meeting, to be held in Gulfport, MS

Action: Information

Committee input and next steps: Dr. Nance will provide a summary to Council Committees, answer questions and provide insight into the SSC deliberations from this SSC meeting.

Agenda Item V: Review of Shrimp Effort Estimation

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Alan Lowther (Southeast Fisheries Science Center [SEFSC]) will present information regarding the discussions of the recently held shrimp effort estimation workshop. This will include proposed modifications to the shrimp effort estimation model. The SSC should consider the information presented and make any recommendations as appropriate.

Agenda Item VI: Review of New Shrimp Assessment Models

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Molly Stevens (SEFSC) will present an update on the development of empirical dynamic models for predicting brown and white shrimp abundance in the Gulf of Mexico (Gulf). This will be discussed in the context of the Southeast Data, Assessment, and Review (SEDAR) 87 research track assessment, which will focus on brown, white, and pink shrimp in the Gulf. The SSC should consider the information presented and make any recommendations as appropriate.

Agenda Item VII: Review of Royal Red Shrimp Landings

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Molly Stevens will briefly summarize the 2021 landings of royal red shrimp, relative to the annual catch limit (ACL). The SSC should consider the information presented and make any recommendations as appropriate.

Agenda Item VIII: SEDAR 87 Gulf of Mexico Shrimp TORs, Schedule, Participants Approval

Action: Information, recommendations, volunteers

Committee input and next steps: SEDAR 87 will be a research track assessment to develop newly proposed models for penaeid shrimp in the Gulf. Tentatively, the Data Workshop will be held from September 18 – 22, 2023; the assessment process will be conducted via webinars between April and July in 2024; and the Review Workshop will be conducted in January 2025. The SSC should review the proposed terms of reference and recommend edits as necessary. The SSC should also consider the proposed schedule, and solicit volunteers for participation in SEDAR 87 from its membership.

Agenda Item IX: Review of SEDAR Schedule and Planned Interim Analyses

Action: Information, recommendations

Committee input and next steps: Council staff will review the proposed SEDAR schedule as discussed at the SEDAR Steering Committee meeting in February 2023. Council staff will also review the proposed schedule of requested and/or planned interim analyses. The SSC should review these proposed schedules and offer recommendations to the Council as appropriate.

Agenda Item X: Review of Red Grouper OA Terms of Reference, Participants

Action: Information, recommendations, and volunteers

Committee input and next steps: Council staff will review the proposed terms of reference for the upcoming SEDAR 88 operational assessment of red grouper. This assessment will also consider the State of Florida's State Reef Fish Survey (SRFS) landings data for the recreational private vessel fleet, and updated red tide mortality modeling. Council staff will also request volunteers for the topical working groups (TWGs), which will specifically address the incorporation of SRFS and new red tide data, respectively. The SSC should review these proposed terms of reference and offer recommendations to the Council as appropriate. SSC members interested in participating in the SEDAR 88 TWGs should volunteer; these TWGs will meet virtually between the fall of 2023 and the spring of 2024.

Agenda Item XI: Solicitation of Volunteers: SEDAR 74 Red Snapper Research Track Review Workshop

Action: Information, volunteers

Committee input and next steps: Council staff request volunteers for the Review Workshop (RW) for the SEDAR 74 research track assessment for red snapper. The Review Workshop will be held in-person at the Council Office in Tampa, Florida, from July 31 – August 4, 2023. The Council requests three volunteers to serve on the RW: two reviewers, and one Chair. If more than three SSC members volunteer, the Council Chair and Executive Director will select participants from the list of volunteers.

Agenda Item XII: Public Comment

Action: Information

Committee input and next steps: Members of the public will be able to address the SSC directly with respect to the topics discussed during this webinar meeting, and other matters, as time allows.

~~**Agenda Item XIII:** Discussion: Economics of Allocation~~

~~**Action:** Presentations, discussion, and recommendations~~

~~**Committee input and next steps:**~~

Cancelled.

Agenda Item XIV: Scamp/YMG Updated Projections within Shallow-water Grouper Complex

Action: Presentations, discussion, and recommendations

Committee input and next steps: Dr. Skyler Sagarese (SEFSC) will present updated projections for the Council's shallow-water grouper complex, which includes scamp, yellowmouth grouper, black grouper, and yellowfin grouper. Scamp and yellowmouth grouper were recently assessed in SEDAR 68, which examined both species together as a complex, and found the species to be healthy. The Council did not express interest in creating a new share category for scamp and yellowmouth grouper; therefore, the SEFSC was requested to update the projections for the entire shallow-water grouper complex, which necessitated calibrating historical landings for black grouper and yellowfin grouper to the Marine Recreational Information Program's Fishing Effort Survey data units, to match the data units with those used for scamp and yellowmouth grouper in SEDAR 68. The species in the shallow-water grouper complex do not use sector allocations. The SSC should review the projections and make catch limit recommendations to the Council as appropriate.

Agenda Item XV: Incorporating Socioeconomic Data into Stock Assessments and its Effect on Status Criteria Determination

Action: Presentations, discussion, and recommendations

Committee input and next steps: Dr. Steven Saul (Arizona State University; Ecosystem SSC) will present on some recent work completed by his teams. During stock assessments, fishery-dependent observations are often used to develop indices of abundance or biomass from catch-per-unit-effort (CPUE) and contribute catch at size or age information. However, fisher behavior, rather than scientific sampling protocols, determines the spatial and temporal locations of fishery-dependent observations. Dr. Saul's research developed a bioeconomic agent-based model to generate simulated fishery data, which were used to populate an age-structured stock assessment. Comparison of stock assessment results with simulated fish population dynamics showed that management advice from assessment models based on fishery-dependent data could be biased. Dr. Saul's presentation will explain the simulation model structure, how stock assessment models were developed using the simulation model output, and discuss the results of the study and their management implications. The SSC consider the information presented, offer feedback, and make recommendations as appropriate.

Agenda Item XVI: Discussion of Decision Points for Evaluating Proxies for Maximum Sustainable Yield

Action: Presentations, discussion, and recommendations

Committee input and next steps: Dr. Bill Harford (Nature Analytics) will present a primer on the selection of appropriate proxies for maximum sustainable yield (MSY), applicable for fisheries in the Gulf. The SSC has contended with decision-making regarding changes to established MSY proxies for several species in the last couple years. Dr. Harford will discuss the kinds of biological and ecological factors that should be evaluated when estimating MSY or designating a proxy, with attention paid to the ultimate goals for an individual species' management. He will also review some of the generalized effects of making decisions more in favor of harvest over resilient biomass. The SSC should review the presentation and supporting documentation and ask questions, making recommendations to the Council as appropriate.

Agenda Item XVII: Public Comment

Action: Information

Committee input and next steps: Members of the public will be able to address the SSC directly with respect to the topics discussed during this webinar meeting, and other matters, as time allows.

Agenda Item XVIII: Discussion: Explicit Temporal Modeling of Recruitment Residuals from Stock Synthesis

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Josh Kilborn (University of South Florida; Ecosystem SSC) will present the use of asymmetric eigenvector mapping (i.e., temporal factors) to try to account for variability in Stock Synthesis (SS3) new recruit estimates for a number of different species. The presentation will primarily focus on some of Dr. Kilborn's work that highlights a few species that show regular periodicity in their recruit deviations, and relationships with environmental covariates that operate at those same timescales. The SSC should consider whether this work may be useful to the stock assessment models and ultimately, informing fisheries management decisions. If so, the SSC should consider, with input from the SEFSC, how this work might be incorporated into SS3 modeling or other assessment-related activities.

Agenda Item XIX: Discussion: Evaluating Bottom Fishing Seasonal Closures in the Recreational Fishery

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Dave Chagaris (University of Florida, Standing SSC) will present on modeling temporal closures in a multispecies recreational fishery, and the tradeoffs revealed associated with species seasonality and angler effort dynamics. Seasonal closures are commonly used to reduce fishing mortality in recreational and commercial fisheries, but may be less effective when effort is merely displaced to the open season or in multispecies fisheries that allow for discarding to continue while other species are targeted. Dr. Chagaris' team evaluated the utility of complete bottom fishing closures (in addition to already mandated harvest closures) that would temporarily prohibit recreational reef fishing as a means to control effort, reduce dead discards, and improve stock status of multiple species. The effect of closing any given month(s) varied across species and resulted in tradeoffs, such that some closures may result in positive effects on biomass of one species and negative effects on others. These tradeoffs were associated with seasonal availability patterns and the degree to which anglers might shift effort to the open season. The closure scenarios that were most likely to reduce dead discards without negatively impacting harvest, spawning biomass, or total effort occurred in late winter and early spring (March and April). In evaluating seasonal fishing closures, the gains in biomass and reductions in dead discards must be weighed against the socio-economic tradeoffs, in terms of lost effort-generated revenue at various spatial and temporal scales and angler dissatisfaction. The SSC should consider the work completed by Dr. Chagaris and his colleagues, and make any recommendations as appropriate.

Agenda Item XX: Discussion: Greater Amberjack Discard Mortality

Action: Presentation, discussion, and recommendations

Committee input and next steps: Drs. Sean Powers (University of South Alabama, Standing SSC) and Kelly Boyle (University of New Orleans) will summarize the findings of several recent studies focusing on discard mortality rates for Gulf greater amberjack. Findings include that swimming depth and swimming activity of greater amberjack are influenced by multiple factors, and recreational fishing discards may impart sublethal stress that results in elevated swimming activity. Based on examination of time series depth profiles, post-release mortality of greater amberjack was estimated to be $18.8\% \pm 6.9\%$, similar to the estimate used in the most recent stock assessment (SEDAR 70 2020). Results also indicate that sublegal-size fish released because of minimum size restrictions face much lower release mortality risk than legal-size fish. Lastly, results indicate that passive acoustic monitoring in conjunction with this novel method could be an effective way to monitor daily and longer-term patterns of live-boating fishing vessel presence at specific artificial sites in the Gulf of Mexico.

Agenda Item XXI: Update: Gulf of Mexico Great Amberjack Count

Action: Presentation, discussion, and recommendations

Committee input and next steps: Dr. Sean Powers will summarize the ongoing work in the Gulf to estimate the absolute abundance of greater amberjack. This collaboratively funded research project includes state, federal, and academic partners conducting a variety of coordinated research projects to generate regionally specific estimates of absolute abundance. The SSC should review the information presented, discuss, and provide any recommendations to Dr. Powers and his team as appropriate.

Agenda Item XXII: Examination of an Alternative Allocation Approach

Action: Information

Committee input and next steps: Dr. John Ward will present on an alternative approach to sector allocation between directed fleets. Economic efficiency analyses of proposed policy options have not been included as a regular part of the fisheries management process. Historically, economic, social, and ecological factors have been considered too complex to expand the focus of fisheries management based on stock assessments. However, the application of theory to the existing data collection program that exists to conduct stock assessment analysis along with other sources of publicly assessable data can be utilized to develop empirical estimates of economic efficiency as required by National Standard 5 and the definition of optimum yield. Dr. Ward will describe using a surplus production model to develop a graphical representation of the Gordon-Schaeffer-Copes model of a simplified fishery. The implications of ecosystem trophic levels are introduced into this model to demonstrate how ecosystem factors are factored into this system of equations. Social factors are also included as an example of how allocation in a suboptimal management regime can be considered. In the model, a simultaneous equation system of multiple fish stocks is developed and empirically estimated for each stakeholder group. The resulting estimated parameters indicate the importance of ecological factors in developing estimates of yield and in interpreting costs and benefits of proposed fishery

management regulations. Dr. Ward will discuss how taking the existing economic inefficiencies or market failures into consideration, a hypothetical management proposal to allocate a fish stock between two stakeholder groups consisting of anglers and fishermen is developed. While this suboptimal fishery cannot provide an optimal allocation that maximizes benefits net of costs because of the management framework, an allocation between these two stakeholder groups should demonstrate an improvement over the existing allocation system. This approach incorporates biological, economic, social, and ecological factors, and would represent a reasonable starting point for negotiations between stakeholder groups. The SSC should review the material presented, offer feedback, and make recommendations as appropriate.

Agenda Item XXIII: Review: Wenchman and Mid-water Snapper Historical Landings

Action: Information

Committee input and next steps: Mr. John Mareska (Alabama Department of Conservation and Natural Resources, Reef Fish SSC) and Ms. Donna Bellais (Gulf States Marine Fisheries Commission) will review historical wenchman landings in the Gulf. These data required unique handling due to many confidentiality issues; as such, the raw, annual data are not available for public review. The SSC should evaluate these data and determine if they are sufficient for providing annual catch advice to the Council. The SSC should also make any other recommendations regarding the management of wenchman as appropriate.

Agenda Item XXIV: Public Comment

Action: Information

Committee input and next steps: Members of the public will be able to address the SSC directly with respect to the topics discussed during this webinar meeting, and other matters, as time allows.

Agenda Item XXV: Other Business

Action: Discussion

Committee Input and Next Steps: Additional items may be brought up for discussion by SSC members, time permitting. If the SSC wishes to pursue action, it can be scheduled for a future SSC meeting.