



## **SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

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Jessica McCawley, Chair | Mel Bell, Vice Chair  
Gregg T. Waugh, Executive Director

### **MEMORANDUM**

7/30/2019

LN# 2019-55

TO: Clay Porch

FROM: John Carmichael

SUBJ: Scope of Work for 2021 SAFMC assessment requests

At its May 2019 meeting, the SEDAR Steering Committee directed that SEDAR Cooperators provide scope of work information for 2021 assessments to the SEFSC by August 1, 2019. This information is provided so that SEFSC can evaluate the assessment workload prior to finalizing the 2021 SEDAR schedule at the September 2019 SEDAR Steering Committee meeting.

Enclosed are the Statements of Work for the requested SAFMC 2021 Operational Assessments of Black Sea Bass and Red Grouper. Please feel free to contact me if there are any questions about these items.

cc: Gregg Waugh, Julie Neer & Kathleen Howington  
Jessica McCawley & Mel Bell  
Erik Williams

## **2021 SAFMC SEDAR Operational Assessments Scope of Work**

### Black Sea Bass

- Model and Additional Data Years
  - Update the South Atlantic Black Sea Bass SEDAR 56 assessment from a terminal year of 2016 to 2019/2020. (This will add 3-4 years of new data, depending on the chosen terminal year.)
  - Apply the current BAM configuration
- Data updates
  - Include any newly available information on steepness for similar species.
  - Include any new and updated information on discard mortality and life history.
  - Calculate different F metrics (other than apical F) to evaluate the status of the stock (to address shifts in the age of apical F towards the end of the assessment time series).
  - Evaluate whether recruitment has shifted due to regime/ecosystem changes and if so, incorporate those changes in the projection (forecast) analyses.
  - Consider sensitivity analyses to address SSC concerns with selectivity differences between Chevron traps and cameras used to create the CVID index.
  - The SSC noted there were no fishery dependent indices in the latter part of the time series because of management measures that likely affected catchability. Recommend an analysis to compare abundance index trends in fishery dependent and fishery independent data sources during all time periods to verify changes in catchability due to management.

### Process

- Convene a panel of several SSC representatives to meet via webinar to review model development and provide guidance.

### Red Grouper

- Model and Additional Data Years
  - Update the South Atlantic Red Grouper SEDAR 53 assessment from a terminal year of 2015 to 2019/2020. (This will add 4-5 years of new data, depending on the chosen terminal year.)
  - Apply the current BAM configuration.
- Data updates
  - Include any new and updated information on life history, discard mortality, and steepness.
  - Evaluate whether recruitment has shifted due to regime/ecosystem changes and if so, incorporate those changes in the projection (forecast) analyses.
  - Consider information on stock structure (genetics and/or tagging) as well as transport of larvae and adults to the South Atlantic region from the Gulf of Mexico, and its impact on stock assessment results.
  - Calculate different F metrics (other than apical F) to evaluate the status of the stock (to address shifts in the age of apical F towards the end of the assessment time series).
  - Explore using appropriate CVs for the landings data to capture the uncertainty in the model results.

### Process

- Convene a panel of several SSC representatives to meet via webinar to review model development and provide guidance.



**UNITED STATES DEPARTMENT OF COMMERCE**  
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National Marine Fisheries Service  
Southeast Fisheries Science Center  
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August 13, 2019

**MEMORANDUM FOR:** John Carmichael  
South Atlantic Fishery Management Council

**FROM:** Clay E. Porch  
Science and Research Director  
Southeast Fisheries Science Center

**SUBJECT:** Scope of Work for 2021 SAFMC assessment requests

The SEFSC has reviewed proposed Scope of Work (SOW) for the 2021 SAFMC assessment requests concerning South Atlantic Black Sea Bass and Red Grouper, SAFMC Memo dated 7/30/19]. While much of the SOW is appropriate, several items appear inconsistent with the SEDAR SOPs for operational assessments:

- 1) Request to consider information on stock structure for Red Grouper. We are unaware of any new research at this point in time that would indicate a need to revisit the current stock definition for Red Grouper. If such research existed and indicated that stock structure needed to be reconsidered, than we suggest this be done through a Research Track assessment as the extent to which it would affect the stock assessment model seems inappropriate for an Operational Assessment.
- 2) Request for both Black Sea Bass and Red Grouper to evaluate whether recruitment has shifted due to regime/ecosystem changes. As is done with every assessment, forecast projections are evaluated in terms of the best estimates for future recruitment and other factors. While it seems apparent that both Black Sea Bass and Red Grouper have been experiencing lower than average recruitment in recent years, this alone is insufficient to make any definitive declaration of regime/ecosystem changes. Rather that type of declaration would need to come from a more comprehensive research study that examined multiple factors, and is beyond the purview of an Operational Assessment. However, consistent with past practice, the SEFSC will provide management advice based on two or more alternative scenarios of future recruitment.
- 3) Recommendation for an analysis to compare abundance index trends in fishery dependent and fishery independent data sources to verify changes in catchability due to management seems. The general trend in advancement for fishery data collection is away from fishery dependent abundance indices toward fishery independent. In the case of Black Sea Bass the fishery independent data for computing an abundance index is some of the best information possible. A general analysis comparing fishery dependent to fishery independent abundance indices could be completed as an independent research project outside of SEDAR, although the value of such an analysis would be unclear since the state of the art is to move toward fishery independent data sources..

The remaining items in the scope of work for Black Sea Bass and Red Grouper can be accommodated by SEFSC staff. The request to calculate different F metrics, other than the commonly used apical F, can be accommodated in an Operational Assessment. Measures such as the fraction of the population removed by fishing have been used by other Councils (including the GMFMC), and could easily be computed here. Nevertheless, it will be important for the SAFMC to consider how these new metrics will then be adopted into future management. A potential change like this would affect multiple stocks and might be a good topic for a SEDAR best practices workshop



## Florida Fish and Wildlife Conservation Commission

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## MEMORANDUM

8/02/2019

TO: Clay Porch

FROM: Luiz Barbieri

SUBJ: Scope of Work for 2021 Mutton Snapper Benchmark Assessment

At its May 2019 meeting, the SEDAR Steering Committee directed that SEDAR Cooperators provide scopes of work information for 2021 assessments to the SEFSC by August 1, 2019. This information is provided so that SEFSC can evaluate the assessment workload prior to finalizing the 2021 SEDAR schedule at the September 2019 SEDAR Steering Committee meeting.

Enclosed is the Statement of Work for the 2021 Mutton Snapper SEDAR Benchmark Assessment to be conducted by the Florida Fish and Wildlife Research Institute.

Please feel free to contact me if there are any questions about these items.

cc: Jessica McCawley, Gil McRae, Dustin Addis  
John Carmichael, Julie Neer

## Statement of Work for 2021 Mutton Snapper Assessment

**Assessment Process:** The Florida Fish and Wildlife Research Institute (FWRI) will be conducting a Benchmark SEDAR stock assessment of the South Atlantic and Gulf of Mexico stock of Mutton Snapper in 2021. We are referring to this assessment as a Benchmark due to the fact that FWRI plans on delivering management advice at the end of the process.

The process will consist of a Data Workshop, a series of assessment webinars, and a Review Workshop. Panels would be convened for all stages of the process.

**Model Type:** We anticipate conducting this assessment in Stock Synthesis (SS3). This is a change from the model used during the original and update assessment for this stock (Age Structured Assessment Program, ASAP). However, we might consider proceeding with an ASAP model if a viable SS3 model cannot be obtained.

**Terminal Year:** 2019 or 2020, depending on where the assessment fits within the larger SEDAR schedule.

**Data Requirements and SEFSC Support:** As this will be a benchmark assessment, and we will be undertaking an entirely new modeling approach for this species, FWRI would request the following types of fisheries data:

- Headboat survey: landings, discards, length compositions for landings
- SEAMAP survey data (although probably few observations available)
- Commercial data: landings, TIP length compositions
- At-Sea Observer Programs: discard lengths, release dispositions
- RVC data: densities, length compositions
- Recreational data: MRIP adjustments, landings, discards, total catch, length composition for landings
- Coastal Fisheries Logbook Program data: catches, discard estimates, discard proportions, indices, effort by gear

FWRI would also request that SEFSC personnel familiar with these data sets attend the Data Workshop to provide support.



# Gulf of Mexico Fishery Management Council

*Managing Fishery Resources in the U.S. Federal Waters of the Gulf of Mexico*

4107 W. Spruce Street, Suite 200, Tampa, Florida 33607 USA  
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August 8, 2019

Dr. Clay Porch, Director  
Southeast Fisheries Science Center  
National Marine Fisheries Service  
75 Virginia Beach Dr.  
Miami, Florida 33149

006793 AUG 20 19

Dear Dr. Porch:

At its May 2019 meeting, the SEDAR Steering Committee directed that SEDAR Cooperators provide scope of work information for 2021 stock assessments to the Southeast Fisheries Science Center (SEFSC) by August 1, 2019. This information is provided so the SEFSC can evaluate the assessment workload prior to finalizing the 2021 SEDAR schedule at the September 2019 SEDAR Steering Committee meeting.

Enclosed is the scope of work for the requested Gulf of Mexico (Gulf) Fishery Management Council (Council) 2022 Benchmark Assessment of West Florida Hogfish, with a terminal data year of 2020, to be conducted by the Florida Fish and Wildlife Conservation Commission with support from the SEFSC. The SEFSC has already received scope of work for the 2021 operational assessments for Gulf and Atlantic scamp. The scope of work for the 2021 operational assessment of Gulf gray snapper will be submitted after the September 2019 meeting of the Gulf Council's Scientific and Statistical Committee. Please feel free to contact me if there are any questions about these items.

Sincerely,

A handwritten signature in blue ink that reads "Carrie M. Simmons".

Carrie M. Simmons, Ph.D.  
Executive Director

cc: Council Members / Council Staff / Shannon Cass-Calay, Ph.D. / John F. Walter, Ph.D. / Larry Massey, Ph.D. / Theo Brainerd, Ph.D. / Luiz Barbieri, Ph.D. / Dustin Addis / Julie Neer, Ph.D. / John Carmichael





# SEDAR

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### **West Florida Hogfish Benchmark Assessment Scope of Work**

**DRAFT: June 2019**

#### **Data Workshop Terms of Reference**

1. Review stock structure and unit stock definitions and consider whether changes are required.
2. Review, discuss, and tabulate available life history information.
  - Evaluate age, growth, natural mortality, and reproductive characteristics.
  - Provide appropriate models to describe growth, maturation, and fecundity by age, sex, or length as applicable.
  - Evaluate the adequacy of available life-history information for conducting stock assessments and recommend life history information for use in population modeling.
3. Recommend discard mortality rates.
  - Review available research and published literature.
  - Consider research directed at these species and similar species from the SEUS and other areas.
  - Provide estimates of discard mortality rate by fishery, gear type, depth, and other feasible or appropriate strata.
  - Include thorough rationale for recommended discard mortality rates.
  - Provide justification for any recommendations that deviate from the range of discard mortality provided in the last benchmark (SEDAR 37) or update (SEDAR 37 Update).
4. Provide measures of population abundance that are appropriate for stock assessment through 2020 as practical.
  - Consider and discuss all available and relevant fishery-dependent and -independent data sources.
  - Document all programs evaluated; address program objectives, methods, coverage, sampling intensity, and other relevant characteristics.
  - Provide maps of fishery and survey coverage.
  - Develop fishery and survey CPUE indices by appropriate strata (e.g., age, size, area, and fishery) and include measures of precision and accuracy.
  - Discuss the degree to which available indices adequately represent fishery and population conditions.





- Recommend which data sources are considered adequate and reliable for use in assessment modeling for each index considered.
  - Rank the available indices with regard to their reliability and suitability for use in assessment modeling.
5. Provide commercial catch statistics, including both landings and discards in both pounds and number through 2020.
    - Evaluate and discuss the adequacy of available data for accurately characterizing harvest and discard by species and fishery sector or gear.
    - Provide length and age distributions for both landings and discards if feasible.
    - Provide maps of fishery effort and harvest.
    - Ensure characterization of any changes in CPUE resulting from changes to the regulatory environment.
  6. Provide recreational catch statistics, including both landings and discards in both pounds and number through 2020.
    - Evaluate and discuss the adequacy of available data for accurately characterizing harvest and discard by species and fishery sector or gear.
    - Provide length and age distributions for both landings and discards if feasible.
    - Provide maps of fishery effort and harvest.
    - Ensure characterization of any changes in CPUE resulting from changes to the regulatory environment.
    - Document changes in MRIP data, both pre- and post-recalibration, in terms of the magnitude of changes to catch and effort.
  7. Provide recommendations for future research in areas such as sampling, fishery monitoring, and stock assessment. Include specific guidance on sampling intensity (number of samples including age and length structures) and appropriate strata and coverage.
  8. Prepare the Data Workshop report providing complete documentation of workshop actions and decisions in accordance with project schedule deadlines (Section II of the SEDAR assessment report).

### **Assessment Workshop Terms of Reference**

1. Review any changes in data following the Data Workshop and any analyses suggested by the Data Workshop. Summarize data as used in each assessment model. Provide justification for any deviations from Data Workshop recommendations.
2. Develop population assessment models that are compatible with available data and document input data, model assumptions and configuration, and equations for each model considered.
3. Provide estimates of stock population parameters, if feasible.
  - Include fishing mortality, abundance, biomass, selectivity, stock-recruitment relationship, and other parameters as necessary to describe the population.

- Include appropriate and representative measures of precision for parameter estimates.
4. Characterize uncertainty in the assessment and estimated values.
    - Consider uncertainty in input data, modeling approach, and model configuration.
    - Provide a continuity model consistent with the prior assessment configuration (SEDAR 37 Update), updated to include the most recent observations. Alternative approaches to a strict continuity run that distinguish between model, population, and input data influences on findings, can be considered.
    - Evaluate and characterize differences in model performance as it relates to the characterization of uncertainty.
    - Consider other sources as appropriate for this assessment.
    - Provide appropriate measures of model performance, reliability, and 'goodness of fit'.
    - Provide measures of uncertainty for estimated parameters, and justification for fixed parameters.
  5. Provide estimates of yield and productivity.
    - Include yield-per-recruit, spawner-per-recruit, and stock-recruitment models.
  6. Provide estimates of population benchmarks or management criteria consistent with the available data, applicable FMPs, proposed FMPs and Amendments, other ongoing or proposed management programs, and National Standards.
    - Evaluate existing or proposed management criteria as specified in the management summary.
    - Recommend and justify proxy values when necessary.
  7. Provide declarations of stock status relative to management benchmarks, or alternative data poor approaches if necessary.
  8. Perform a probabilistic analysis of proposed reference points, stock status, and yield.
    - Provide the probability of overfishing at various harvest or exploitation levels.
    - Provide a probability density function for biological reference point estimates.
    - If the stock is overfished, provide the probability of rebuilding within mandated time periods as described in the management summary or applicable federal regulations.
  9. Project future stock conditions (biomass, abundance, and exploitation) and develop rebuilding schedules if warranted; include estimated generation time. Stock projections shall be developed in accordance with the following, with  $F_{\text{Current}}$  being equivalent to the geometric mean of previous three years:
    - A) If stock is overfished (if  $MSST < 0.5 \cdot B_{\text{MSY}}$ ):
      - $F = 0, F_{\text{Current}}, F_{\text{MSY}}, F_{\text{Target}}$
      - $F = F_{\text{Rebuild}}$  (max to rebuild in 10 years)
    - B) If stock is undergoing overfishing:
      - $F = F_{\text{Current}}, F_{\text{MSY}}, F_{\text{Target}},$  or  $F_{\text{Rebuild}}$  (if overfished)
    - C) If stock is neither overfished nor undergoing overfishing:
      - $F = F_{\text{Current}}, F_{\text{MSY}}, F_{\text{Target}}$

- D) If data limitations preclude classic projections (i.e. A, B, C above), explore alternate models to provide management advice.
  - E) Annual yield projections should be completed for a five year period, with corresponding constant catch scenarios for three and five years.
10. Provide recommendations for future research and data collection.
- Be as specific as practicable in describing sampling design and sampling intensity.
  - Emphasize items which will improve future assessment capabilities and reliability.
  - Consider data, monitoring, and assessment needs.
11. Complete the Assessment Workshop Report in accordance with project schedule deadlines (Section III of the SEDAR Stock Assessment Report).

### **Review Workshop Terms of Reference**

1. Evaluate the data used in the assessment, addressing the following:
  - a) Are data decisions made by the DW and AW sound and robust?
  - b) Are data uncertainties acknowledged, reported, and within normal or expected levels?
  - c) Are data applied properly within the assessment model?
  - d) Are input data series reliable and sufficient to support the assessment approach and findings?
2. Evaluate the methods used to assess the stock, taking into account the available data.
  - a) Are methods scientifically sound and robust?
  - b) Are assessment models configured properly and used consistent with standard practices?
  - c) Are the methods appropriate for the available data?
3. Evaluate the assessment findings with respect to the following:
  - a) Are abundance, exploitation, and biomass estimates reliable, consistent with input data and population biological characteristics, and useful to support status inferences?
  - b) Is the stock overfished? What information helps you reach this conclusion?
  - c) Is the stock undergoing overfishing? What information helps you reach this conclusion?
  - d) Is there an informative stock recruitment relationship? Is the stock recruitment curve reliable and useful for evaluation of productivity and future stock conditions?
  - e) Are the quantitative estimates of the status determination criteria for this stock reliable? If not, are there other indicators that may be used to inform managers about stock trends and conditions?
4. Evaluate the stock projections, addressing the following:
  - a) Are the methods consistent with accepted practices and available data?
  - b) Are the methods appropriate for the assessment model and outputs?
  - c) Are the results informative and robust, and useful to support inferences of probable future conditions?
  - d) Are key uncertainties acknowledged, discussed, and reflected in the projection results?

5. Consider how uncertainties in the assessment, and their potential consequences, are addressed.
  - Comment on the degree to which methods used to evaluate uncertainty reflect and capture the significant sources of uncertainty in the population, data sources, and assessment methods
  - Ensure that the implications of uncertainty in technical conclusions are clearly stated.
6. Consider the research recommendations provided by the Data and Assessment workshops and make any additional recommendations or prioritizations warranted.
  - Clearly denote research and monitoring that could improve the reliability of, and information provided by, future assessments.
  - Provide recommendations on possible ways to improve the SEDAR process.
7. Provide guidance on key improvements in data or modeling approaches which should be considered when scheduling the next assessment.
8. Prepare a Peer Review Summary summarizing the Panel's evaluation of the stock d addressing each Term of Reference.

### **In-person Workshop**

Individual in-person data, assessment, and review workshops are recommended for this assessment. The nature of the work to be conducted will necessitate incorporation of an in-person workshop in tandem with webinars for the data and assessment components, with an IPT-style approach leveraged where applicable and appropriate during the assessment component.