SEDAR
SouthEast Data, Assessment, and Review

4055 Faber Place Drive #201
North Charleston SC 29405

Phone (843) 571-4366
Fax (843) 769-4520
www.sedarweb.org

# SEDAR 49 Gulf of Mexico Data-Limited Species:

# Red Drum, Lane Snapper, Wenchman, Yellowmouth Grouper, Speckled Hind, Snowy Grouper, Almaco Jack, Lesser Amberjack

## Assessment* Terms of Reference

## January 2016

### Data Workshop Terms of Reference

1. Review stock structure and unit stock definitions.
2. Review, discuss, and tabulate available life history information.
   - Provide estimates of central tendency and variability (CV) of the following, as available. Use proxies if warranted.
     - Natural Mortality
     - Length at 50% and 95% maturity
     - Von Bertalanffy parameters (t0, k, Linf)
     - Von Bertalanffy K parameter
     - Von Bertalanffy Linf parameter
     - Length-weight relationship
     - Maximum age
     - Steepness
   - Evaluate the adequacy of available life history information for conducting stock assessments and recommend life history information for use in population modeling.
   - Evaluate and discuss the sources of uncertainty and error.
3. Consider measures of population abundance that are appropriate for stock assessment.
   - Review and develop (as needed) all available nominal abundance indices from relevant fishery-dependent and -independent data sources.
   - Discuss the degree to which available indices adequately represent fishery and population conditions.
   - Select a single abundance index that reliably represents population abundance for use in assessment modeling. Choose sensitivity indices if needed (i.e. if no single index can reliably represent population abundance due to changes in fishing practices, survey methods etc.).
4. Provide estimates of harvest (in weight) from the following data sources:
   - Commercial landings, by gear (e,g. vertical line, longline, trap, etc.)
   - Recreational landings, by fishing mode (e.g. for-hire, private anglers, etc.)

- Evaluate and discuss the adequacy of available data for accurately characterizing harvest by species.
- Evaluate and discuss the sources of uncertainty and error, and data limitations (such as temporal and spatial coverage) for each data source.

5. Provide estimates of discards (in weight) from the following data sources:
    - Commercial discards, by gear (e,g. vertical line, longline, trap, etc.)
    - Recreational discards, by fishing mode (e.g. for-hire, private anglers, etc.)
    - Other bycatch as appropriate
    - Review and/or develop release mortality estimates by fleet and gear. As needed, apply release mortality to obtain estimate of dead discards (in pounds).
    - Evaluate and discuss the adequacy of available data for accurately characterizing discards by species.
    - Evaluate and discuss the sources of uncertainty and error, and data limitations (such as temporal and spatial coverage) for each data source.
6. Provide length and/or age distributions for both landings and discards if feasible.
    - Evaluate and discuss the adequacy of available data for accurately characterizing length/age composition, by species.
7. In cooperation with stakeholders and fisheries experts, develop estimates of the central tendency and variability (CV) of the following, as feasible:
    - Length at first capture and full selection
    - Current stock depletion
    - Depletion over time (e.g. as derived from trends in effort).
    - Evaluate and discuss the adequacy of available data for accurately characterizing these estimates.
    - Evaluate and discuss the sources of uncertainty and error.
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 Process Terms of Reference

1. Develop population assessment models that are compatible with available data and document input data, model assumptions and configuration for each model considered.

2. Provide estimates of population benchmarks or management criteria consistent with available data, applicable FMPs, proposed FMPs and Amendments, other ongoing or proposed management programs, and National Standards (e.g. OFL, ABC) or other indicators (e.g. trends in F or Z, probability of overfishing) that may be used to inform managers about stock trends and conditions?

3. Characterize uncertainty in the assessment and estimated values.

- Consider uncertainty in input data, modeling approach, and model configuration.
- Provide appropriate measures of model performance, reliability, and 'goodness of fit'.
- Provide measures of uncertainty for estimated parameters.

4. Provide recommendations for future research to improve stock assessment (e.g. sampling, fishery monitoring, methodological enhancements.)

5. Prepare an Assessment Process report providing complete documentation of workshop actions and decisions in accordance with project schedule deadlines (Section III of the SEDAR assessment report)

## Review Workshop Terms of Reference

1. Review any changes in data following the Data/Assessment workshop and any analyses suggested by the workshop. Summarize data as used in each assessment model. Provide justification for any deviations from Data/Assessment Workshop recommendations.
2. Evaluate the data used in the assessment, including discussion of the strengths and weaknesses of data sources and decisions, and consider 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?
3. Evaluate and discuss the strengths and weaknesses of the methods used to assess the stock, taking into account the available data, and considering the following:
   a) Are the data-limited methods scientifically sound and robust?
   b) Are the methods appropriate given the available data?
   c) Are the data-limited models configured properly and used in a manner consistent with standard practices?
   d) Are the quantitative estimates produced reliable? Does the method produce management metrics (e.g. OFL, ABC) or other indicators (e.g. trends in F or Z, probability of overfishing) that may be used to inform managers about stock trends and conditions?
4. 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.
5. 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 future assessments.
   - Provide recommendations on possible ways to improve the SEDAR process.
6. Consider whether the stock assessment constitutes the best scientific information available using the following criteria as appropriate: relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation, and peer review of fishery management information.
7. Provide guidance on key improvements in data or modeling approaches that should be considered when scheduling the next assessment.
8. Prepare a Peer Review Summary summarizing the Panel's evaluation of the stock assessment and addressing each Term of Reference.

* This assessment will follow a Benchmark approach.