SEDAR

SouthEast Data, Assessment, and Review

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Gulf of Mexico Gray Snapper

Operational Assessment Scope of Work

DRAFT: September 2019

1. Update the approved SEDAR 51 Gulf of Mexico Gray Snapper base model with data through 2019.

2. Document any changes or corrections made to model and input datasets and provide updated input data tables.
   - Document changes in MRIP data, both pre- and post-recalibration, in terms of the magnitude of changes to catch and effort.
   - Use the SEFSC's "best practice" approach for estimating commercial discards.
   - Include available length frequency for the commercial fleet(s).
   - Update life history data (e.g. growth, reproduction, mortality) if warranted.

3. To the extent possible, the following should be considered for potential inclusion in the model:
   - Consider potential effects of red tide on gray snapper, with consideration of past red tide events through 2019.
   - Consider potential for improvements to the parameterization of gear selectivity, retention, and discards for the recreational shore mode.
   - Given the changes in commercial data inputs (see item 2), consider potential for improvements to the parameterization of gear selectivity, retention, and discards commercial fleet(s), including potential for discards above the size limit.
   - Consider the inclusion of age data in the stock assessment model.
   - Consider whether growth parameters should be estimated.
   - Consider SEDAR 51 recommendations for reproduction:
     - Use the female weight-length relationship to calculate spawning stock biomass, with the size at which 50% of individuals are sexually mature set at XXX mm FL
   - Consider combining available relevant video indices for the Gulf to allow for the greatest sample size across the longest potential time period. Consider weighting alternatives for these surveys, as necessary.
   - Evaluate uncertainty in natural mortality (i.e. M between 0.13 and 0.17)
   - Consider whether steepness can be estimated, with or without a prior. If steepness is fixed, evaluate the sensitivity of that assumption (e.g., by fixing steepness between 0.81 and 0.99, based on the range considered in the SEDAR 15 Update assessment of mutton snapper).

3. Update model parameter estimates and their variances,

model uncertainties, estimates of stock status and management benchmarks, and provide the probability of overfishing occurring at specified future harvest and exploitation levels. Provide commercial and recreational landings and discards in pounds and numbers.

- Use the following status determination criteria (SDC) proposed in Amendment 51:
  - MSY proxy = yield at F_{MSY} or $F_{Rebuild}$ (if overfished)
  - MSST = $0.5*B_{MSY}$
  - MFMT = F_{MSY} or $F_{Rebuild}$ (if overfished)
  - If different SDC are recommended, provide outputs for both the current and recommended SDC.
- Unless otherwise recommended, use the geometric mean of the previous three years' fishing mortality to determine $F_{Current}$. If an alternative approach is recommended, provide justification and outputs for the current and alternative approach.
- Provide yield and spawning stock biomass streams for the overfishing limit and acceptable biological catch in pounds:
  - Annually for five years
  - Under a "constant catch" scenario for both three and five years
  - For the equilibrium yield at F_{MSY}, when estimable

4. Develop a stock assessment report to address these TORS and fully document the input data and results of the stock assessment model.

<u>In-person Workshop</u>

An in-person data and assessment workshop **is** recommended for this assessment.