



Gulf of Mexico Fishery Management Council

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

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Gulf of Mexico Gray Triggerfish Operational Assessment Scope of Work DRAFT: May 4, 2023

1. Evaluate and revise the SEDAR 43 Gulf of Mexico gray triggerfish base model, with data through 2024, where possible. Employ assessment best practices and necessary revisions in order to provide a model that describes the population dynamics of the stock and is capable of producing management advice.
2. Explore the appropriateness of an age-based, length-based, and hybrid (age- and length-based) approaches for describing fleet and survey selectivity.
3. Use the Marine Recreational Information Program's Access Point Angler Intercept Survey and Fishing Effort Survey to inform catch and effort for the recreational sector. Consider state-specific catch, effort, and discards from state surveys as applicable (Florida: State Reef Fish Survey; Alabama: Snapper Check; Mississippi: Tails 'n Scales [effort]; Louisiana: LA Creel; Texas: TPWD Creel).
 - Describe any annual differences in the magnitude of landings from the previous assessment greater than 10%, with assistance from the NOAA Office of Science and Technology.
4. Evaluate and document the following specific changes in input data or deviations from the previous assessment model.
 - Re-evaluate estimated spatial distributions in recruitment.
 - Consider continuity model stratification and data structure, and suggest any recommended revisions.
 - Review ageing validation and ageing structures studies, and consider their appropriateness for inclusion in the assessment model.
 - Explore the use of a combined video index from the FWRI, Pascagoula, and Panama City video surveys (e.g., GFISHER).
 - Evaluate the start year and initial F_s used in the assessment model.
 - Explore shrimp bycatch magnitude and age-structure, if data are available (e.g., SEAMAP Summer and Fall Groundfish Trawls).
 - Explore fleet-specific length compositions and remote sensing data for sargassum coverage as a potential index of recruitment.
 - Consider recent discard mortality studies and analytical results, and incorporate updated discard mortality rate(s) as appropriate.
5. Document any revisions or corrections made to the input datasets, and provide updated input data tables. Provide commercial and recreational landings and discards in numbers and weight (pounds). Describe the fraction of catch by fleet that is discarded.

6. Generate model parameter estimates and their variances, estimates of model uncertainties, and estimates of stock status and management benchmarks. In addition to the base model, conduct sensitivity analysis to address uncertainty in data inputs and model configuration and consider runs that represent plausible, alternate hypotheses about key parameters.
 - Use the following status determination criteria (SDC):
 - MSY proxy = yield at F_{MSY} or proxy ($F_{30\%SPR}$, Amendment 48)
 - Provide model outputs using alternative MSY proxies as justified by the life history and data available for the stock.
 - If overfished, MSY proxy = $F_{Rebuild}$
 - $MSST = 0.5 * SSB_{MSY}$ (Amendment 44)
 - $MFMT = F_{MSY}$ and $F_{Rebuild}$ (if overfished)
 - $OY = 90\%$ of MSY or proxy (Amendment 48)
 - 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

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

Topical Working Group

Topical working groups **are** recommended for this assessment. An in-person multi-day workshop **is** recommended to discuss the following topics:

- Recreational catch, effort, and discards evaluation
- Life History: Ageing, Recruitment (SEAMAP, length compositions, sargassum)
- GFISHER index development
- Shrimp bycatch
- Discard mortality