



Gulf of Mexico Fishery Management Council

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

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The Great Red Snapper Count Evaluation Terms of Reference DRAFT: February 17, 2021

Background: The Great Red Snapper Count (GRSC) study provides an absolute abundance estimate of age 2+ red snapper in the U.S. waters of the Gulf of Mexico. The primary objective of the review is to determine whether the absolute abundance estimate and its variance is reliable and consistent with input data and population biological characteristics. The review is divided into three parts and specifically does not address the tagging components of the GRSC.

1. STUDY DESIGN AND SAMPLING APPROACHES

- Evaluate study design used for developing a composite estimate of absolute abundance by habitat type, depth, region, and age.
 - Assess the sufficiency of spatiotemporal sampling by study strata.
 - Does heterogeneity in sampling by strata affect estimates of absolute abundance and variance around that estimate?
 - Evaluate assumptions and biases inherent to the design, and the directionality of those biases.
- Sampling approaches
 - Are sampling approaches collectively appropriate for determining an estimate of absolute abundance for red snapper in the Gulf?
 - Are different sampling techniques effectively calibrated to each other for generating the absolute abundance estimate?
 - Are the biases and limitations of each approach effectively addressed?

2. STATISTICS AND DATA ANALYSIS

- Evaluate the statistical methods used to analyze the data, and to construct the absolute abundance estimate and its variance.
 - Is the statistical variance appropriate for habitat-specific, regional and Gulf-wide estimates?
 - Are potential sources of uncertainty effectively incorporated into variance estimates?
 - Are imputations made for unsampled regions appropriate, and what are the potential implications for the direction of biases in the estimates.

3. RESULTS

- Is the estimate and its variance reliable, consistent with input data and population biological characteristics, and useful as an estimate of absolute abundance of age 2+ red snapper?

- Assumptions and biases inherent to the methods:
 - Are assumptions made appropriate, given study design considerations?
 - Describe the magnitude and directionality of any biases.
- Do you think the data presented can be combined with age-specific composition information for generating an age-specific estimate of abundance?

4. DELIVERABLE

- Prepare a Peer Review Summary summarizing the Panel's evaluation of the abundance estimate and addressing each Term of Reference. Complete and submit the Peer Review Summary Report in accordance with the project guidelines.