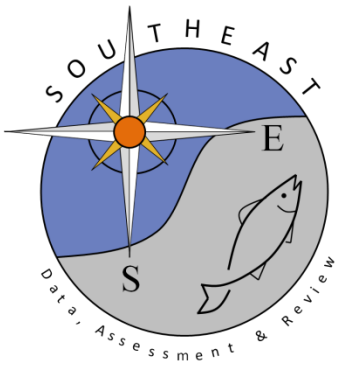
Recreational Catch Data Consideration Best Practices: SEDAR 98 Gulf of Mexico Red Snapper

SEFSC

SEDAR98-DW-04

25 October2024



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Recreational Catch Data Consideration Best Practices

- **Purpose of this document:**

  Scientific integrity of data and interpretations, including statistical analyses and stock assessment modeling, is the backbone and support for science-based fisheries management. This document establishes best practice guidance to ensure scientific integrity is maintained. Science is evidence based, and thorough documentation and peer-review are a cornerstone of establishing the necessary evidentiary support for best scientific information available.

- **SEDAR 98 Gulf Red Snapper TOR #5**: Provide recreational catch statistics by area for each fleet (private boat mode, for-hire charter vessels and headboats) including both landings and discards (for open and closed seasons) in both pounds and number. If state survey landings data are used (e.g., private boat mode), provide a fully calibrated (to a common data unit) time series as necessary.
  - Evaluate and discuss the adequacy of available data for characterizing landings and discards (open and closed season) by fleet, mode, or gear.
  - Specifically discuss the potential for bias and uncertainty in the data sources.
  - Provide length and age distributions for both landings and discards (open and closed season) where feasible.
  - Provide estimates of uncertainty around each set of landings and discard (open and closed season) estimates..

- **Deadlines**
  - The deadlines for recreational data products include all relevant data/estimates (i.e., entire time period, all strata) that are to be considered in the assessment, which should be identified in the scoping call.
  - State landings estimates and data products are due after the deadline for MRIP estimates. For SEDAR 98, these deadlines are Oct 11th (MRIP) and Nov 8th (state data).

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- **Documentation**
    - Data providers must submit a Metadata Document that provides all information needed to understand the survey design and interpret the data provided.
        - Description of survey design (i.e., strata), what type of data are collected (i.e., fields, units, etc.), and (a mathematical representation of) any relevant estimation methods. Necessary metadata include:
            - Sampling Design (i.e., sampling frequency, site selection)
            - Spatial extent of the survey
            - Any targeting of specific species (i.e., target vs. non-target groups)
            - Modes (e.g., does the survey target a specific mode or gear?)
            - Whether all anglers are included in the survey (e.g., federal vs. state-permitted anglers)
            - Catch types provided (e.g. landings, discards)
            - Any seasonality in the survey (e.g., open vs. closed seasons)
        - Current Status of MRIP certification and/or peer-review
            - Is the survey certified? When was it certified?
            - Certification documentation submitted as a SEDAR reference document
            - Has the survey been peer-reviewed? Describe the review process used.
    - Data providers must submit Working Papers that document all details needed for the SEDAR data workgroup to scientifically evaluate the species-specific data and associated estimates
        - Clear field names and descriptions of fields for each data file submitted.
        - Description of any calibrations used in generating the final time-series
            - Calibrations for MRIP estimates into state currency (1981 - first year of state survey)- see guidance section below
            - Calibrations of MRIP CHTS to FHS for charter boat estimates
            - Calibrations of MRIP CHTS to FES for shore and private estimates and APAIS calibrations for all modes
        - Details on the data and any associated QA/QC used in generating estimates

        - Date on which data were accessed (e.g., from the MRIP website)
        - Whether the entire survey dataset was used or just a subset (e.g., only used data from certain docks/ports, excluded certain fishing modes)
        - Description or comments on data nuances, trends, possible biases, or inconsistencies of which the assessment team should be aware
        - Any steps taken to correct errors (e.g., QAQC scripts) or address known biases in the survey (e.g., exclusion of initial survey years, when survey design may not have been fully finalized)
    - Appendix of any scripts (or pseudo-scripts) used in the estimation process
    - Appropriate tables/figures for diagnostics and QA/QC
        - Table/Figure of the final catch estimates and associated CVs
        - If applicable, a table of applied ratios used to produce consistent time series of estimates across time and the associated time-series to which they were applied (e.g.,CHTS to FHS, MRIP FES to state survey currency).
        - For those calibrations that cannot be summarized by a strata-specific ratio (e.g., adjustments made at the data level), a description of the calibration and tables of the two time series .
        - Comparison plots
            - Final MRIP catch estimates vs. previous assessment
            - MRIP catch estimates in different units (CHTS vs. FES)
            - Final state survey catch estimates vs. MRIP estimates
        - Sample sizes by strata (e.g., year, area, mode)

- **State Survey Time Series:** Guidance for state data providers to provide a time series of estimates in state currency starting in 1981
    - To the extent possible, standard field names should be used across all data products. Appendix includes a suggested template.
    - For those state data providers wishing to pull MRIP data themselves, MRIP estimates can be accessed from OST via their online query tool – https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries

        - The MRIP query webpage is sufficient for data providers to get their relevant MRIP time-series in most SEDARs
        - For cases where these (OST) estimates may not match those used in the assessment, the primary SEFSC adjustments made to MRIP estimates are:
            1. Domain estimation (FL), which may be needed for some assessments
            2. SEDAR-specific adjustments which may be needed in some assessments. This may include corrections to misidentified species, allocations of unidentified taxa to species, and imputations to fill known data gaps (e.g., MRIP 1981-wave1, TPWD 1981-May1983, discards back to 1981).
            3. The FHS charterboat calibration, which is irrelevant for those states that only sample private anglers. Details of the FHS calibration are discussed in SEDAR 64-RD-12.
            4. Weight estimation, which is a SEFSC process and not available through the MRIP website. Details of the SEFSC weight estimation approach are discussed in SEDAR 32-DW-02 and SEDAR 67-WP-06. There are a few options available to those states interested in generating a state survey time series of weight estimates from 1981, which are discussed below.
        - State data providers may choose to replicate SEFSC processes, which requires raw MRIP data and application of associated estimation scripts
            1. Raw MRIP data, estimates, and template programs (e.g., domain estimation) are available to download – https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads
            2. Data providers should check previous SEDAR documentation for any SEDAR-specific adjustments that might be needed
    - Alternatively, state data providers can wait for the SEFSC's GenRec (catch) estimates to be provided
        - The SEFSC catch file includes estimates for catch-in-number, landings-in-weight, and the associated CVs.
        - As stated above, preliminary/final data products including state survey data are due to SEDAR after the MRIP estimate deadline to allow enough time for state data providers who prefer this option.

- For those data providers that can supply a state survey time series of weight estimates from 1981, the following guidance is provided
    - Based on advice from OST, calibrations are recommended to be calculated from and applied to time series of catch-in-numbers (vs. catch-in-weight). Given the limited range of years over which calibration factors can be calculated (e.g., 2017+), there is concern with additional biases in (catch-in-weight) calibration factors associated with any changes in the average weight of the underlying population, which may or may not be well sampled by the survey (e.g., port sampling vs. self-reporting). Additionally, the native units of the MRIP survey are catch-in-numbers and so (catch-in-number) calibration factors are believed to be more appropriate.
    - To produce a time series of weight estimates, we recommend multiplying the state survey time series of estimates in numbers by (strata-specific) estimates of average weight. The choice of how weight estimates are calculated must be identified in the working paper, for which a number of options are available:
        1. State data providers send the state survey time series from 1981 of estimates in number to the SEFSC, who applies their weight estimation approach
            - SEFSC can estimate average weights from MRIP APAIS, TPWD, and LA BIO data, which are already included in SEFSC data flows
            - SEFSC can estimate average weights using additional size data provided by the data provider (e.g., state survey) by the raw data deadline. Note that this size data needs to be randomly collected to justify incorporation into the SEFSC estimation methodology
        2. State data providers recreate the SEFSC weight estimation approach (from SEDAR documentation) and apply it to their state survey time series of estimates in number (1981+)
        3. State data providers apply their own weight estimation approach to calculate average weights estimates and apply them to the state survey time series of estimates in number (1981+) to calculate catch-in-weight estimates.
- Resource for additional information = *** MRIP Users Handbook *** -- https://www.fisheries.noaa.gov/resource/document/mrip-data-user-handbook

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- Questions about providing historical state MRIP data in state survey currency (1981-start of state program) can be directed towards the OST contacts: Richard Cody <richard.cody@noaa.gov> and John Foster <john.foster@noaa.gov>

References

Dettloff, K and VM Matter. 2018. S64-RD-12. Model-estimated conversion factors for calibrating Coastal Household Telephone Survey (CHTS) charterboat catch and effort estimates with For Hire Survey (FHS) estimates in the Atlantic and Gulf of Mexico with application to red grouper and greater amberjack. SEDAR, North Charleston, SC. Accessed from: https://sedarweb.org/documents/sedar-64-rd-12-model-estimated-conversion-factors-for-calibrating-coastal-household-telephone-survey-chts-charterboat-catch-and-effort-estimates-with-for-hire-survey-fhs-estimates-in-the-atlantic/

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