

Report of the ABC Control Rule for Category 4 Stocks Working Group April 2021

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BACKGROUND

A Working Group (WG) of the South Atlantic Fishery Management Council's Scientific and Statistical Committee (SAFMC SSC) was formed to revise and update the ABC Control Rule for Category 4 (unassessed) stocks and bring those recommendations to the SSC for consideration at their April 2021 meeting. The SSC's ABC Control Rule currently includes a decision tree for Category 4 stocks, which includes ORCS and other ad-hoc methods when setting ABCs for data-limited stocks in the South Atlantic. The SSC recognized at their October 2020 meeting that several new studies and methods for providing fishing level recommendations in data-limited situations had been published since the ABC Control Rule was last revised that might provide more robust management advice for some stocks. Thus, this WG was asked to:

- 1) carefully explore recent literature examining performance of landings-only approaches, including, but not limited to, ORCS;
- 2) recommend potential biological and fishery characteristics (e.g. bycatch vs. directed) that would suggest the use of alternative data poor approaches;
- 3) consider, if available and adequate, effort, length, and fishery independent data;
- 4) examine correlations in landings across species, geographic location, and fisheries (e.g., recreational and commercial) at a given point in time; and
- 5) make a recommendation to the SSC for a revised Decision Tree for Category 4 of the ABC Control Rule.

SUMMARY OF ACTIVITIES

The WG met on the following dates: January 20, February 5, February 19, March 12, and March 25 via webinar. The WG began by reviewing the Statement of Work, reading and discussing recent studies on data-limited methodologies for providing catch level advice, and developing a table of data availability for Category 4 stocks (Draft Table 1) that reflected the need to begin

“establishing a complete inventory of all available data for each managed stock” (Newman et al. 2015). The WG then generated a draft list of potential data-limited methods that might be applicable for Category 4 stocks in the South Atlantic region (Draft Table 2). Finally, the WG drafted revised ABC Control Rule text for the SSC’s consideration (Recommendation #6 below). The ABC Control Rule revisions recommended by the WG reflect the most recent published literature on performance of data-limited assessment and ABC-setting methods and have been evaluated by the Working Group in light of the unique nature of fisheries managed by the SAFMC.

RECOMMENDATIONS

The WG recommends:

1. The ABC Control Rule Decision Tree for Category 4 stocks should be replaced with a new flexible process that allows the SSC more latitude in applying the most appropriate and best-performing ABC-setting methods for each data-limited stock or category of stocks given the nature of the fish and fishery in the region and the availability of reliable data. This approach should yield a better science to inform management for Category 4 stocks.
2. The overall process for ABC-setting should be:
 - a. Flexible – Wording should be general enough to allow the methods applied to a given stock to be updated as new data and better-performing approaches become available without requiring a revision to the Council’s Comprehensive ABC Control Rule Amendment (*pending*; Newman et al. 2015).
 - b. Customizable – Recent studies demonstrate that using a “one size fits all” data-limited approach does not produce robust advice for management for data-limited stocks (Wiedenmann et al. 2013, Sagarese et al. 2019). Stock-specific methods should be developed and updated as new data and methods become available.
 - c. Responsive – ABC-setting approaches derived from an OFL estimate should incorporate the Council’s stock-specific risk tolerance as described in the Council’s Comprehensive ABC Control Rule Amendment (*pending*) and outlined below (#6).
 - d. Adaptable – Empirical Harvest Strategies (EHS) or Harvest Control Rules (HCR) should be developed to accompany all Category 4 ABCs to improve the performance of data-limited methods and account for inevitable changes in the fishery, data availability and quality, and other unforeseen circumstances (Dowling et al. 2015a, Walsh et al. 2018). EHS are appropriate for stocks whose ABC is set using monitoring data (e.g., landings-only); HCRs are appropriate for stocks to which data-limited models have been applied to estimate stock biomass and exploitation. Both EHS and HCR should include provisions for deviations from the rule such as episodic events, catch estimate outliers (either anomalously high or low), and new developments in the fishery (Dowling et al. 2015a, b). The SEP should provide comment on all EHS/HCR recommendations prior to review by the SSC.
3. If the Council approves this revised ABC Control Rule (#6 below) and process for Category 4 stocks, the SSC, the SEFSC, and regional researchers and data providers should provide an

initial review of data availability for all Category 4 stocks (Table 1) and the list of potential methods for ABC-setting given available data (Table 2).

4. The SSC, in consultation with the SEP, should suggest a prioritization of Category 4 stocks or groups of stocks for review and approval by the Council. Category 4 stocks will likely be grouped and analyzed at same time if similar types of data are available for multiple stocks.
5. The SSC should request the Council's approval of a long-term working group to:
 - a. Review available data and appropriate methods for setting an ABC for each Category 4 stock or complex in the order prioritized by the Council.
 - b. Recommend an ABC and EHS/HCR for each stock or complex by applying the most appropriate method given the available data and characteristics of the stock and fishery.
 - c. Recommend updates to Tables 1 and 2 to the SSC, as needed.
6. To implement this new approach, the ABC Control Rule text for Category 4 stocks should be revised as follows:

The ABC for Category 4 stocks and complexes will be set based on expert judgment of the SSC using all available fishery-dependent and fishery-independent data. The exact method recommended by the SSC for determining the ABC will be stock- or complex-specific and depend on the quality and quantity of data available. A list of potential ABC-setting methods for stocks with varying types and quantities of reliable data will be generated then reviewed, and updated regularly by the SSC as stock-specific data changes and new innovations in data-limited methodologies become available. For some stocks, adopting a multimodel ensemble or superensemble approach to determining an OFL/ABC may be appropriate.

If a stock has adequate information to adopt a data-limited method for estimating an OFL, the ABC will be set using the Council's Comprehensive ABC Control Rule Amendment (*pending*) that explicitly incorporates the Council's risk tolerance for the stock. If an OFL cannot be estimated, an ABC will be set directly using a data-limited approach that uses monitoring data only. If the available data are adequate, methods that estimate an OFL (i.e., involve estimation of MSY or risk of overfishing) are preferred over methods that only provide an ABC (e.g. catch-only). Category 4 stock ABC recommendations should be accompanied by an Empirical Harvest Strategy (EHS) or Harvest Control Rule (HCR), as appropriate, for consideration by the Council. All methods and assumptions should be well documented and clearly justified.

All current ABC recommendations for Category 4 stocks will stand until the SSC recommends and the Council adopts new ABCs.

If the species is bycatch in another fishery, the SSC may recommend the Council adjust management of the directed fishery as well as a means to reduce interactions or mortality, if necessary.

The SSC can recommend to the Council that a stock be made an Ecosystem Species and will recommend an ABC using this Control Rule until such time as the relevant FMP is amended accordingly.

CONCLUSION

Implementation of this OFL/ABC-setting process for Category 4 stocks will require an investment of time, but should result in more responsive and robust management advice that is tailored to meet the needs and challenges of each Category 4 stock. We thank Council staff for their support of working group activities, especially in generating Tables 1 and 2.

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