Mid-Atlantic Fishery Management Council

Scientific & Statistical Committee

OFL CV Sub-Group

Draft Edits to the OFL CV Guidance Document

March 2023

Background:

In 2019, the SSC developed, and the Council approved, the Overfishing Limit (OFL) Coefficient of Variation (CV) guidance document which is intended to provide a clear, consistent, and transparent process in documenting SSC conclusions regarding the scientific uncertainty of the OFL estimate. The current guidance document identifies nine different decision criteria to be considered to help define an appropriate OFL CV when setting new or revised ABC recommendations. The guidance document was designed to be a living document and would get updated periodically as new scientific information becomes available and as the SSC learns, adjusts, and refines its decision process. Changes to the OFL CV guidance document were last approved in 2020.

The OFL CV sub-group (P. Rago, M. Wilberg, J. Boreman, S. Gaichas, O. Jensen, T. Miller) was tasked with reviewing the current document and providing recommendations to update and revise the document to help provide greater clarity and direction to the SSC and stakeholders for future application. To inform their discussions and recommendations, the sub-group considered new and existing research findings, comments and issues identified by the SSC from 2021-2023, and a review of all OFL CV decisions made by the SSC since 2017.

Since the last update to the full SSC in September 2023, the sub-group met on three occasions (11/6/23, 1/12/24, and 2/27/24) to continue their review and develop draft recommendations. Included for SSC review is a marked-up version of the OFL CV guidance document that displays the suggested edits and revisions currently identified by the sub-group. This document provides additional information, context, and rationale for the more substantive edits.

March 2024 SSC Meeting and Next Steps

At the March meeting, the SSC will review and provide feedback on the suggested edits and recommendations developed by the OFL CV sub-group. Based on SSC feedback, the sub-group will make any additional edits and revisions to the guidance document and a final draft document will be brought back to the SSC in May for review and approval. The final draft

document will then be presented to the Council at their June meeting for approval. If/once approved, the SSC would utilize the criteria, process, and information in the revised guidance document when making ABC recommendations at the July SSC meeting.

Draft Recommendations:

The sub-group identified three primary areas for modification within the report: review of current OFL CV bins, dropping certain existing criteria, and a new criteria tiering process to determine OFL CV value. The marked-up version of the guidance document also contains other text edits to improve the flow, provide clarity, or reflect current processes and information.

Some additional information and details for each primary area discussed by the sub-group is included below. Please see the marked-up guidance document for specific edits relevant to each area.

Review of current OFL CV bins

- Given the results of some new research, the sub-group considered if potential revisions to the OFL CV bins (60-100-150) was warranted. Empirical and theoretical results, from national and international assessments, suggest that a 60% CV may be overly optimistic.
- Ultimately, the sub-group did not recommend, at this point, a change in the CV bins. However, the sub-group did recommend adding some additional language to the document summarizing the recent research in context with the MAFMC SSC current uncertainty considerations and clearly articulating that a 100% OFL CV will be the default and achieving a 60% OFL CV may be more challenging.
    - Additional context and rationale for this is highlighted under the "criteria tiering process to determine OFL CV bin" where data quality will be a key factor in determining the OFL CV.
    - Many examples in region with a range of changes that can cause uncertainty – recreational data, changes to assessment lead, changes to assessment model

Dropping certain existing criteria

- After reviewing SSC comments/areas of uncertainty raised over the last few years for each criterion and the approach and process for evaluating each criterion, the sub-group is recommending three existing criteria be dropped for explicit consideration/scoring when making an OFL CV determination. Components of these criteria could be considered in the relevant criteria remaining.
- **Criterion #7 – Informed by prediction error**
    - This criterion has generally been looking at error across assessments and show uncertainty (projections compared to next assessment estimates).
        - Using an analysis conducted by Paul to historically inform this criterion.
        - Lots of external drivers influencing final determination – analyst change, model change, peer review composition, M change, changes to MRIP etc.

    - The SSC hasn't really used this criterion and/or used as intended and don't have an updated analysis to inform this criterion.
        - Maybe a future project and utilize information as some point.
- **Criterion #8 – Assessment accuracy under different fishing pressures**
    - The intent was to consider whether or not the fishery has some measurable impact on the population and if not, then a stock assessment may be more uncertain.
    - This criterion has been confusing to interpret and apply and may set up perverse incentives – i.e., need to fish more to understand stock dynamics and get a lower OFL CV bin.
- **Criterion #9 – Informed by simulation analysis or full MSE**
    - This criterion has been minimally used by the SSC to date (see table below) and has primarily been aspirational.
    - If relevant analyses or MSE is available, use in appropriate criteria considerations.

Criteria tiering process to determine OFL CV bin

- In evaluating the criteria and their application over time, the sub-group noted there are higher priority, more important criteria that tend to carry more "weight" than others (i.e., criterion score tends to correspond to the final OFL CV score).
- The sub-group also noted the value to the SSC and stakeholders in going through and deliberating the merits and issues associated with each criterion, but also recognized the need to streamline some of the discussion and efficiency in the process.
- The sub-group identified an alternative approach to evaluating the criteria and recommends using a 2-tiered criteria approach that would use most of the existing criteria. Tier 1 criteria are the most important/critical criteria when evaluating uncertainty and need to be considered each time a stock assessment is conducted and/or updated. Tier 2 criteria are less critical but can be important factors when considering overall uncertainty and, depending upon frequency, may/may not need to be considered each time an assessment is conducted or updated.
    - **Tier 1** would include the following criteria:
        - Data quality
        - Model appropriateness and identification during the assessment process
        - Informed by retrospective analysis
    - **Tier 2** would include the following criteria:
        - Model estimates informed by comparison with empirical or experimental analyses
        - Informed by ecosystem factors or comparisons with other species
        - Informed by appropriate stanzas in recruitment (primarily affecting the accuracy of forecasts)

- As noted in the section above, three currently used criteria would be dropped and are not explicitly included in the tiered approach.
- Tier 1 criteria would be evaluated first and would set the floor for the overall OFL CV determination (i.e., if the OFL CV from the Teir 1 evaluation is 100%, the overall OFL CV can not be lower than 100% when evaluating and including the Tier 2 criteria).
- Additional details, including the process by which this evaluation would take place by the SSC, will be further developed should the SSC support this approach.

			Decision Criteria									
Species	Assessment Type	Year	Data Quality	Model Appropriateness	Retro Analysis	Simpler Analyses	Ecosystem Factors	Trends in Recruitment	Prediction Error	Accuracy with Different Fishing	MSE	Final OFL CV Bin
Atlantic Mackerel	Benchmark	2018	**	**	**	**	**	**	NA	**	**	100
Atlantic Mackerel	Management Track (MT)	2021	100	60	100	100	150	100	150	150	NA	150
Butterfish	Management Track	2020	100	100	100	100	100	100	100	100	NA (100)	100
Butterfish	Research Track/MT	2022	100	150	60	100	100	100	60	150	NA	100
Summer Flounder	Benchmark	2019	**	**	**	NA	NA	NA	**	NA	NA	60
Summer Flounder	Management Track	2021	60	60	60	60	100	60	100	60	NA	60
Summer Flounder	Management Track	2023	60	60	60	60	100	100	100	60	NA	60
Scup	Management Track	2019	60	100	60	100	100	100	100	60	NA	60
Scup	Management Track	2021	60	100	60	100	100	60	100	60	NA	60
Scup	Management Track	2023	60	100	100	100	100	60	100	60	NA	100
Black Sea Bass	Management Track	2019	100	60	150	60	100	100	100	60	NA	100
Black Sea Bass	Management Track	2021	100	60	150	60	150	100	100	60	NA	100
Bluefish	Management Track	2019	100	100	100	100	100	100	100	60	NA	100
Bluefish	Management Track	2021	100	100	100	100	100	100	100	60	NA	100
Bluefish	Research Track/MT	2023	100	100	60	100-150	100	100	100	60-100	NA	100
Atlantic Surfclam	Benchmark	2018	**	**	NA	NA	NA	**	NA	**	NA	150
Atlantic Surfclam	Management Track	2020	60	100	60	60	150	100	150	100	100	100
Ocean Quahog	Benchmark	2017	NA	**	NA	NA	NA	**	NA	**	NA	100
Ocean Quahog	Management Track	2020	60	100	60	100	150	100	100	150	100	100
Golden Tilefish	Management Track	2021	100	100	60	150	150	100	100	100	NA	100
Spiny Dogfish	Update	2018	**	**	**	**	**	**	**	**	**	100
Spiny Dogfish	Research Track/MT	2023	100	100	60	100	150	100	150	60	NA	100

** - criterion considered but not formally given an OFL CV level

NA - criterion was not considered

OFL CV evaluation conducted before current process was fully implemented by SSC