

SAFMC ORCS Subcommittee

The SAFMC SSC reviewed the "ORCS" committee report in November 2011 and directed that a subcommittee convene to consider modifications to the ABC control rule. Subcommittee members, including Luiz Barbieri, Chip Collier, and Eric Johnson, met via conference call in February 2012 to discuss the ORCS concepts and their application to the SAFMC ABC control rule. John Carmichael provided staff support to the group. Marcel Reichert was unable to attend the call and was instead briefed on the discussions.

The Committee discussed the ORCS report and possible application to the ABC control rule. General findings are summarized in the first series of bullets. Specific preliminary recommendations, addressing how the method may be applied, are contained in the second series.

Committee Findings:

- The SAFMC ABC includes a tiered approach that is consistent with ORCS recommendations.
- Determination of ABC for the assessed stock tiers is similar between the ORCS approach and the current ABC control rule.
- The ORCS approach uses a structured decision table of Attributes to classify what is known about the exploitation level of unassessed stocks. Values are assigned to each metric and used to derive an overall score for each stock.
- The ORCS approach is an extension of the "Method" approach which has been discussed by the SSC in prior meetings.
- The ORCS Attributes table (Table 4 in the Report) is a possible replacement for the ad hoc decision tree added to Tier 4 of the SAFMC ABC control rule.
- Varying standards of proof may be considered for establishing scores in the Attributes table.
- Some metrics in the Attributes table reference similar concepts. For example, schooling morphology, and refugia may all generally reflect susceptibility to capture.
- Decisions to be made after stocks are scored include the appropriate catch statistic and scalars of that statistic to derive OFL and ABC.
- Applying catch scalars involves an element of risk, especially given that this method applies to catch only stocks. Since the Council is responsible for establishing overall acceptable risk levels, Council guidance should be considered in selecting scalars.

Committee Recommendations:

- The ORCS approach can be applied to SAFMC unassessed stocks.
- The ORCS attributes table, with modifications noted below, should be considered as replacement for the Tier 4 decision tree.
- Possible Attributes Table modifications:
 - Evaluate exploitation using indicators derived from current SAFMC species groupings where possible.
 - Evaluate M across species groupings when comparing to 'dominant species' as suggested in the Attributes table, rather than considering dominant species across an entire FMP FMU.

- Group related content to avoid confounding criteria and overweighting of limited known information. Use averages across the group to deal with anticipated data deficiencies.
 - Group bycatch, rarity, and desirability metrics as measures of overall fishery interest or degree of targeting.
 - Group schooling, morphology, and refugia as measures of susceptibility. Consider using MRAG-PSA scoring efforts to provide a quantitative measure of susceptibility.
- Consult life history research to evaluate M for unassessed stocks.
- Develop trends of landings to evaluate the trends metric.
- The SSC should provide a score based on the Attributes table.
- The SSC should consider a range of scalar values for each Attribute category.
- The Council should discuss risk tolerance and select the actual scalar values.

ORCS Attributes Table

Table 4. Table of attributes for assigning stock status for historical catch-only assessments.

Overall scores are obtained by an unweighted average of the attributes for which scoring is possible, although alternative weighting schemes could also be considered. An initial assignment to a stock status category is: mean scores >2.5 —heavily exploited; stocks with mean scores 1.5 - 2.5 --moderately exploited; and stocks with mean scores <1.5 --lightly exploited. When the attribute does not apply or is unknown it can be left unscored.

Attribute	Stock status		
	Lightly exploited (1)	Moderately exploited (2)	Heavily exploited (3)
Overall fishery exploitation based on assessed stocks	All known stocks are either moderately or lightly exploited. No overfished stocks	Most stocks are moderately exploited. No more than a few overfished stocks	Many stocks are overfished
Presence of natural or managed refugia	Less than 50% of habitat is accessible to fishing	50%-75% of habitat is accessible to fishing	$>75\%$ of habitat is accessible to fishing
Schooling, aggregation, or other behavior responses affecting capture	Low susceptibility to capture (specific behaviors depend on gear type)	Average susceptibility to capture (specific behaviors depend on gear type)	High susceptibility to capture (specific behaviors depend on gear type)
Morphological characteristics affecting capture	Low susceptibility to capture (specific characteristics depend on gear type)	Average susceptibility to capture (specific characteristics depend on gear type)	High susceptibility to capture (specific characteristics depend on gear type)
Bycatch or actively targeted by the fishery	No targeted fishery	Occasionally targeted, but occurs in a mix with other species in catches	Actively targeted
Natural mortality compared to dominant species in the fishery	Natural mortality higher or approximately equal to dominant species ($M \geq \bar{M}$)	Natural mortality equal to dominant species ($M \approx \bar{M}$)	Natural mortality less than dominant species ($M < \bar{M}$)
Rarity	Sporadic occurrence in catch	Not uncommon, mostly pure catches are possible with targeting	Frequent occurrence in catch
Value or desirability	Low value ($< \$1.00/\text{lb}$, often not retained ($< 33\%$ of the time))	Moderate value ($\$1.00 - \2.25), usually retained (34-66% of the time)	Very valuable or desirable (e.g., $> \$2.25/\text{lb}$), almost always retained ($>66\%$ of the time).
Trend in catches (use only when effort is stable)	Catch trend increasing or stable (assign score of 1.5)	Catch trend increasing or stable (assign score of 1.5)	Decreasing catches