Meeting Report
ABC Control Rule Workshop

October 27 - 28, 2014
Crowne Plaza
4831 Tanger Outlet Boulevard
North Charleston, SC 29418
Workshop Objectives
The objectives of this workshop were to consider how the current ABC control rule has performed and how continuing advances in assessments, particularly methods for data-limited stocks, can best be incorporated.

Time and Place
The workshop was held Oct. 27 through Oct. 28, in Charleston, SC.

Planning and Organization
The SSC requested that a workshop be held in October 2014, immediately prior to the SSC meeting, to consider revisions to the ABC control rule. A subcommittee was formed in October 2013 to develop a timeline and topic suggestions. Members include Steve Cadrin, Luiz Barbieri, and Marcel Reichert.
Documents:

Attachment 2. ABC_ContRule_Revise_1111: Current SA SSC ABC Control Rule.
Attachment 3. Pstar_Values: Contains all the P* values assigned by the SSC to date, including the assigned Tiers from each dimension and the frequency of occurrence of each Tier.
Attachment 4. SA_Stock_Info_2014: Contains information regarding stock status, fishing level recommendations, assessment information, sampling level, and level of landings for all South Atlantic stocks.
Attachment 5. Bentley&Stokes_2009a: Contrasting Paradigms for Fisheries Management Decision Making: How Well Do They Serve Data-Poor Fisheries?
Attachment 7. Carruthers_etal_2012: Evaluating methods that classify fisheries stock status using only fisheries catch data.
Attachment 13. MRAG_EWGPSA_SAresults: Annual catch limits report from the Lenfest expert working group and the results for the South Atlantic stocks of the MRAG PSA analysis.
Attachment 15. MRAG_PSA_GULFResults: Results for the Gulf of Mexico stocks of the MRAG PSA analysis.

Attachment 18. Gulf_ABC_Control_Rule: Current Gulf of Mexico SSC ABC Control Rule.
Attachment 19. MAFMC_ABC_Control_Rule_and_Risk_Policy: Current Mid-Atlantic SSC ABC Control Rule and Risk Policy.
1. Introduction

The SSC ABC Control Rule Workshop meeting was called to order at 1:00 pm, as scheduled. The agenda was adopted without change. The SSC Chair reviewed the agenda and outlined meeting format and process.

2. Workshop Terms of Reference

TOR 1. Evaluate the performance of the ABC control rule based on recent assessments, i.e., benchmark vs. subsequent update. What was the realized performance of the control rule for avoiding overfishing and achieving the expected yield when applied to different assessments?

TOR 2. Evaluate the current ABC control rule, considering whether it achieves the original objective of scaling uncertainty catch level adjustments (i.e., buffers) relative to assessment uncertainty, and whether it provides adequate categories and resolution given the types of available assessment information now encountered.

TOR 3. Evaluate the scoring criteria of each of the factors within control rule dimensions and consider whether criteria should be revised based on performance, as considered in TOR #1 and #2, or in light of new scientific information. For example, recently published analyses demonstrate that fixing steepness is equivalent to choosing a spawner-per-recruit proxy.

TOR 4. Discuss revamping of the scoring system to be more Tier-specific, allowing more refinement of the dimensions used to provide the adjustment in ABC for each tier.

TOR 5. Evaluate use and application of the PSA score. Consider whether to keep, remove, or modify the role of PSA scores in the control rule.

TOR 6. Draft a report containing recommendations for potential modifications to the ABC Control Rule for presentation to the Council.

3. SSC Discussion and Recommendations

TOR 1. Evaluate the performance of the ABC control rule based on recent assessments, i.e., benchmark vs. subsequent update. What was the realized performance of the control rule for avoiding overfishing and achieving the expected yield when applied to different assessments?
The SSC thought it was difficult to address this TOR since few SAFMC-managed stocks have had benchmark assessments followed by a subsequent update. Further, none of the stocks that fit this criterion have had ABC values set according to this control rule (i.e., their ABC setting process preceded implementation of the control rule). Nevertheless, the Committee discussed some examples of stocks that although outside the ABC control rule framework had ABC recommendations that later were considered inadequate. For example, blueline tilefish was originally assigned an ABC value based on the decision tree approach (ABC control rule Level 5). A subsequent benchmark assessment determined that ABC to be too high. Conversely, wreckfish had a DCAC-based ABC (ABC control rule Level 3) much lower than the SCAA-derived ABC value obtained through a subsequent stock assessment.

Despite these issues, the SSC pointed out a dearth of objective, empirically-based information to properly evaluate the efficacy of the control rule. For example, should the Committee focus on evaluating differences in $P^*$ values across similar species/assessments or differences in buffers resulting from the combination of $P^*$ and uncertainty? Further, what metric should be used to evaluate these differences? Therefore, after much discussion the SSC felt that although the ABC control rule needs to be cleaned up there isn’t enough evidence indicating the current rule is not working properly.

**TOR 2.** Evaluate the current ABC control rule, considering whether it achieves the original objective of scaling uncertainty catch level adjustments (i.e., buffers) relative to assessment uncertainty, and whether it provides adequate categories and resolution given the types of available assessment information now encountered.

During discussion of this TOR the SSC reinforced the idea that the basic ABC control rule performance cannot be properly evaluated at this time and, therefore, the Committee should not attempt to adjust or re-weigh control rule dimensions at this workshop. Nevertheless, the SSC discussed potential issues with the current control rule and explored possible scenarios for control rule adjustments. For example, the MAFMC increases the CV on the pdf of OFL because they don’t feel their assessments truly capture uncertainty in all the input data (e.g., recreational landings, age-length keys, etc.). Suggested modifications included:

- Revamp the control rule to address 3 main categories of analysis:
  1. Analytical assessments supporting $P^*$ (BAM, Production Model, etc.)
  2. Analyses supported by other approaches (DBSRA, DCAC, etc.)
  3. Analyses applied to unassessed, data limited stocks (ORCS, Decision Tree, etc.)
Use the main types of uncertainty characterization techniques currently associated with assessments to group stocks/assign tiers within the Uncertainty Dimension. For example:

- Monte Carlo-based approaches: Tier 1
- Simpler bootstrapping approaches: Tier 2
- Just use of sensitivity analyses (no bootstrapping): Tier 3

Further, the Committee discussed the importance of evaluating what is included in the characterization of assessment uncertainty. For example, how many parameters are fixed vs. freely estimated? How often are CV’s assigned or ‘borrowed’ rather than calculated or estimated as part of the assessment framework?

The SSC recognized that there is a general lack of understanding of the current use and formulation of the control rule by the Council and stakeholders. The Committee suggested running several SAFMC-managed species through other Councils’ ABC control rules to see how they fall out in comparison to the current SAFMC approach (be sure to use several very different life history characteristics when choosing stocks for comparison).

**TOR 3.** Evaluate the scoring criteria of each of the factors within control rule dimensions and consider whether criteria should be revised based on performance, as considered in TOR #1 and #2, or in light of new scientific information. For example, recently published analyses demonstrate that fixing steepness is equivalent to choosing a spawner-per-recruit proxy.

The SSC recommended a revamping of the control rule’s Levels 2 and 3 to be less prescriptive in the methodology to be used. Also, the Committee discussed whether ‘overfished’ should have more weight than ‘overfishing’ when evaluating stock status (Tier 3 in the control rule’s Level 1). Some SSC members felt that the ‘overfished’ status is more important but that it is already addressed by rebuilding plans or specific language in NS1. Also, although the ‘overfishing’ status represents a range (i.e., the degree of overfishing the stock is under) the SSC already has the ability to take this into account when assigning values to that control rule dimension.

Regarding the issue of fixed steepness the SSC pointed out that it already takes that into account by assigning those assessments to Tier 2 under Dimension 1 to capture that, rather than Tier 1. However, the Committee suggested that language under this control rule tier should be revised to indicate this applies specifically to fixing steepness (the current language is not explicit about this issue).

The SSC also discussed the fact that in the current structure of tiers under Dimension 1, Tiers 4 and 5 would never be used since the analyses assigned to those tiers would not result in a P* analysis (i.e., no pdf of MSY can be generated).

By taking out some of the Tiers, the weightings must be redistributed.
By leaving it as is, it is biased because can never have a 10% or 7.5% penalty.

- Another approach is to have triggers, with each trigger pulled, decrement another amount (ex. h fixed, -2.5%; single M across ages, -2.5%; etc.)
- Also leave flexibility for unforeseen/misc. uncertainties

**TOR 4.** Discuss revamping of the scoring system to be more Tier-specific, allowing more refinement of the dimensions used to provide the adjustment in ABC for each tier.

- Single value in lowest tier for catch statistic seem very risk prone
- Carruthers paper shows the higher the catch the higher the prob of overfishing
  - Also assumes a directed fishery, which is not the case for many Tier 4 and 5 stocks
- Only use 3rd highest if, by expert judgment, the increase or continued landings at that level is not expected to result in overfishing
- Also must remember ABC is a cap, not a target
  - Setting ABC as mean or median landings means half the landings over that time period resulted in overfishing and future catches are going to be held below that mean/median level
- For data-poor stocks, drastic swings in landings (on commercial side) may be due to changes in market conditions, which is currently not considered in the Control Rule
- Can modify Dimensions 1 and 2 to be Tier specific, since will have different types of info available within the different Levels

**TOR 5.** Evaluate use and application of the PSA score. Consider whether to keep, remove, or modify the role of PSA scores in the control rule.

- For assessed stocks, assessments usually incorporate the characteristics of the PSA analysis explicitly within the modeling framework
- May be informative for the data poor species
- In practice, most stocks used on fall within the high, possibly moderate, susceptibility category
- Double-counting depends on how it is used
  - Less prod species in model as higher M, etc.
  - Does not increase CV about OFL, but PSA in Control Rule does
• Susceptibility aspect is only place in Control Rule that brings in tech aspects of how fishery is prosecuted

• Sock status is also questioned because it is more related to risk rather than uncertainty
  o Other jurisdictions use status to help inform risk tolerance

• Since the SSC is providing advice to the Council, including the P*, then it is appropriate to include dimensions that deal with management risk/uncertainty as well as scientific uncertainty

• Dimensions 1 and 2 deal with scientific uncertainty, Dimensions 3 and 4 deal with management uncertainty/risk

• Draft a report containing recommendations for potential modifications to the ABC Control Rule for presentation to the Council.
  - Prob not ready for Council by Dec Council meeting
  - Draft report and recommendations will be developed by planning committee and Council staff, then distributed to the SSC as a whole for review
  - Draft revisions to the Control Rule to the SSC for the April meeting, if possible

Comments

• Can develop TORs to SSC asking to consider type of assessment/analysis appropriate for a particular species and available data
  o SEDAR currently provides for alternative assessment methodologies
  o Requires the AW to look at available data from DW and decide on most appropriate method to use
  o External assessment process has the proposal process

• SSC can give guidance to the Council on what is available and what can be done to help inform the Council’s prioritization process

• Council being involved in choosing P* is one way of relaying level of risk and is Council’s prerogative to be more involved in setting the level of risk