ABC Control Rule Modifications

Discussion Document VI

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SAFMC Review Draft – December 2017

I. Background & Development Timeline

- 2008: The initial ABC Control Rule (CR) developed. It includes "Dimensions" that address uncertainty parameters and "tiers" within each dimension that provide scores based on assessment information such as uncertainty, stock status, and risk. The sum of tiers scores is used to adjust the probability of overfishing, denoted as P* throughout this document, for defining ABC. The CR was intended to be comprehensive and applicable to all stocks, including those assessed and those not assessed, as well as all SAFMC FMPs.
- 2010: The CR was modified by addenda to include a hierarchal "Tier" system including the original CR as one tier and addressing other data situations with other tiers. The first tier addressed assessed stocks (to which the initial rule applied), two intermediate tiers addressing data limited evaluations that were in use at the time (DCAC and DBSRA), and a final tier addressing stocks for which only catch information is available. Note that due to this change, the word "tier" is used differently in two places in the CR. For clarity in this document, lower case "tier" will be used to refer to the categories of Dimensions in the original CR, and the upper case "Tier" will be used to refer to the higher level divisions created in 2010.
- April 2011: The fourth Tier (catch only) was further modified by addenda to incorporate a decision tree approach for data limited stocks. The decision tree was intended to provide a consistent and objective means to evaluate data and stock conditions, and to provide a clear SSC record to support catch recommendations. At this time, the Tiers created through the 2010 modification began to be called "Levels" in some circumstances, in an effort to reduce the confusion caused by the use of the term tier in two different ways in the CR.
- November 2011: The SSC proposed a process for including the ORCS (Only Reliable Catch Stocks) workgroup recommendations for addressing unassessed stocks. The ORCS approach was added as another option for evaluating Tier 4 (aka Level 4) stocks, initially categorized as "catch only".
- October 2014: The SSC held an ABC Control Rule Workshop to evaluate performance and application of the CR. Objective evaluation of performance was hindered by a lack of assessments that provide status determinations during times when fishing levels based on the CR were in effect.
- April 2015: The SSC reviewed the report of the October 2014 Workshop. The SSC did not recommend any CR modifications at the time, although suggestions were made to add flexibility that would allow consideration of individual stock situations. An ABC Control Rule Workgroup, including a subset of SSC members, is formed to pursue the topic.

- July 2015: SAFMC implemented the ORCS approach through Amendment 29 to the Snapper Grouper FMP. Due to implementation in a SG FMP, the ORCS method is only available for stocks in that FMP.
- May 2016: The workgroup was revised to update the evaluations and consider if changes were necessary. The Workgroup reported preliminary findings to the SSC in May 2016, noting limited progress in evaluation information. The group recommended removing the stock status dimension from the assessed stocks Tier (Level) because status determination is made by the NMFS.

  Status Determination Background: Stock status is determined by NMFS. Stock assessment findings along with SSC and peer review recommendations are considered in the determination. However, because the agency determination is not made until after the SSC makes its recommendations on an assessment, the final status determination is not available when the SSC reviews the assessment and typically applies the CR. Up until the 2013 Gag update assessment (reviewed by the SSC in April 2014), agency status determinations had been consistent with those applied in the control rule evaluations of the SSC. In reviewing Gag, the agency determined that overfishing was addressed by Council actions taken between the terminal assessment year and the SSC review and control rule application. Therefore, the agency determined that gag was not experiencing overfishing at the time the determination was made. This ruling contradicted the SSC determination, based on the terminal assessment year, used by the SSC in applying the control rule.
- June 2016: Based on the ongoing discussion regarding status determinations, the Council recommended that the SSC consider removing status from consideration in the CR. The Council cited two considerations in support of this request. The first is the fact that status determinations are made by the agency, not the SSC, as noted. The second is because status is an assessment output, not a characteristic of the assessment approach or the data, and therefore status is not a component to the underlying assessment uncertainty that is supposed to be addressed by the CR. The Council considers that stock status is more appropriately considered when it, the Council, considers its risk tolerance for a stock.
  - *Council Recommendation to remove status from the uncertainty consideration.*
- October 2016: The SSC reviewed proposed revisions to the ABC control rule and provided the following recommendations:
  - *Stock status is determined by NMFS, and is a factor that the SSC considers appropriate for the Council to consider when determining the acceptable risk of overfishing. As such, the SSC recommends removing stock status from the ABC control rule.*
  - *The Productivity and Susceptibility Assessment (PSA) information is also a factor that the SSC recommends the Council should consider when determining the acceptable risk of overfishing. The SSC recommends removing the PSA consideration from the ABC control rule. However, the SSC recommends that the current PSA information should be updated and reviewed by the SSC if the Council wishes to use it to establish risk levels.*
  - *Modifications to the ABC control rule as a result of the above recommendations will require changes to the overall scoring system. The SSC requests that staff work with the SSC leadership to develop some possible options for modifying scores to maintain the range of adjustments.*

  - *The SSC recommends that P* values based on the existing ABC control rule be compared to recommendations based on the modified ABC control rule.*

- April 2017: The SSC was provided a draft of this document to review. The draft built upon the principles proposed in the October 2016 ABC Control Rule Decision Document reviewed by the SSC. It included recommendations from the Council and SSC based on earlier discussions. Because an FMP amendment, or amendments, will be required to implement ABC control rule changes, the alternatives and issues were presented in the FMP format of "*ACTIONS*" with various "*ALTERNATIVES*". Specific values and criteria were proposed for illustration and example purposes. Recommendations from the April 2017 SSC review addressing the actions and alternatives are included under each action in this draft.
  - *The SSC recommended that ABC control rule changes should be implemented through a comprehensive amendment to ensure consistency across FMPs.*
- June 2017: The Council was provided the ABC discussion document, but ran short on time during the meeting and was unable to discuss it.
- September 2017: The Council was provided an updated discussion document, but again ran short of time and did not discuss it fully. Council recommended convening a meeting via webinar, between the October SSC meeting and December Council meeting, to discuss the CR in detail. Discussion during this meeting focused on the risk tolerance alternatives (Action 3).
  - *Council supported the actions incorporating flexibility allowed under the MSA*
  - *Council supported alternatives 4-6 of Action 3 (risk tolerance specification)*
  - *In general, alternative 4 should apply to most situations. Alternatives 5 and 6 should be retained to provide flexibility for some circumstances*
  - *Concerns with alternative 3 include the precision and frequency of stock assessments. The precision, frequency of updates, and level of resolution typical of assessments of SAFMC stocks is inconsistent with a control rule that proposes definitive changes in the risk tolerance in response to changes in estimated stock biomass. Notably, the MAFMC liaison at the meeting agreed that the MAFMC approach was likely inappropriate in the SAFMC given the many stocks managed, low assessment output, and considerable time between assessments. It was also noted that ABC for stocks in rebuilding plans (B<MSST), ABC is based on the rebuilding plan and not a specific P*. Therefore, there is no need to change risk tolerance for biomass levels below MSST.*
  - *Requested convening a "Committee of the Whole" meeting via Webinar prior to the December 2017 SAFMC meeting to review ABC CR revisions in detail.*
- October 2017: SSC review.
  - *Recommended to discontinue the term "data poor", and use "data limited" where appropriate.*
  - *The SSC provided further comments on Action 1: assessment and information categorizations. Clear distinctions are elusive, and both words and number schemes can imply rankings that are not always desired.*
  - *How well an assessment estimates uncertainty (CV), and how the SSC responds to derive ABC, emerged as important traits for categorizing stocks. As a result,*

actions in Alternative 1 (stock categories) began to cross over into those for Action 4 (evaluating and quantifying uncertainty), suggesting that these actions could be combined into a single action. For this document, prior actions 1 and 4 are now combined as a new action 1.

- *The SSC reviewed alternative risk categories, and provided some guidance on determining overfishing risk.*
- *Based on prior experiences, there was a general recognition that flexibility needs to be allowed because assessments often defy strict categorization and uncertainty evaluations.*
- *The SSC noted that management uncertainty (such as the ability to prevent ACL/ABC/OFL overages) was important to overall success, and that it should receive greater evaluation and consideration.*

- November 6, 2017: SAFMC Webinar meeting: ABC Control Rule Committee of the Whole
  - *Meeting as a Committee of the Whole to address ABC CR changes. This and subsequent meetings will be Chaired by the Council Chair, with ABC CR discussions led by Dr. Michelle Duval.*
  - *Agreed to implement these changes through a comprehensive amendment*
  - *Requested an update presentation on the fishing level recommendations process (OFL-ABC-ACL)*
  - *Discussed issues with timing of ABC recommendations, given the SSC's recommendations that assessment results such as stock trajectories and volatility will affect risk decisions, and that details of some provisions (particularly carry over and phase in) should be reviewed by APs. Provided guidance that additional delay in setting fishing levels should be avoided.*
  - *Requested comparison of possible risk tolerance recommendations (P*) applied now with those likely under the CR revisions.*
  - *Recommended that alternatives be included to allow multi-year consideration of recreational catch estimates when evaluating landings against ACLs.*

II. Future Steps & Timing

Current Actions addressing Control Rule Provisions

- Dolphin Wahoo 10: proposes carry over modification (Action 7).
  - Initially scheduled for approval in late 2017
  - Placed on hold, March 2017, until revised MRIP estimates are available due to the large recreational component in these fisheries.
  - Those estimates will be available in late 2018 at the earliest; likely SSC review April 2019.
- Snapper Grouper 45 (Tilefish overfishing): Council risk tolerance specification (Actions 2 & 3).
  - Placed on hold, March 2017, pending assessment update request.
  - Council expressed intent to prioritize tilefish and keep this amendment on track while also considering a comprehensive amendment for the ABC CR.
- Comprehensive ABC Control Rule Amendment: To be considered.
  - Discussion at the March 2017 Council meeting that a comprehensive amendment may be more efficient and best avoid inconsistencies in applying control rule provisions across FMPs.
  - Brief acknowledgement of this possibility in June 2017, in response to tilefish discussions
  - *The SSC recommended taking a comprehensive approach during its review in April 2017.*
  - Ensures consistency of ABC CR components across FMPs. Also apply to an AM modifications included in the amendment
  - Reduces the number of amendments and actions required to modify the CR.
  - Avoids entangling CR modifications with issues related to any single species
  - *November 2017 Committee of the Whole: The Council recommended developing ABC CR modifications through a comprehensive Amendment.*
- Council Review – December 2017

III. Summary of Potential Actions:

(Note renumbering of alternatives as compared to prior documents, beginning with #4)

1) Simplified control rule with uncertainty, including how uncertainty is evaluated and ABC is derived for each category
2) Allow Council to establish risk tolerance
3) Criteria for establishing risk tolerance

(Alternatives for Action 4 are moved into Action 1)

4) Multi-year ABC specification
5) ABC phase-in
6) Carry-over of unused ABC
7) Rebuilding stocks clarification
8) Deviation allowance
9) Accountability Measures

Actions 1 – 3 are related: These provide the primary revisions to the overall ABC control rule approach.

Actions 4 – 6 are general provisions addressing flexibility allowed under the NS1 guidelines. These actions can be applied to the existing rule or a modified rule.

Actions 7 and 8 clarify existing practices and flexibility.

Action 9 addresses recreational Accountability Measure revisions.

The Council can consider adding additional actions to address other issues and concerns

IV. Definitions and Abbreviations – NEW INFO

Table 1. Definitions and Abbreviations.

Allowable Biological Catch (ABC)	Required by the MSA; recommended by the SSC based on provisions of the Control Rule. ABC is reduced from the OFL to account for assessment uncertainty.
ABC Control Rule (ABC CR)	Required by the MSA; developed by the Council in consultation with the SSC, specifies how risk tolerance and assessment uncertainty are evaluated to determine ABC.
Accountability Measure (AM)	Required by the MSA; defines how the Council responds when the ABC is exceeded.
Annual Catch Limit (ACL)	Required by the MSA; specified by the Council, addresses management uncertainty, may not exceed ABC
Annual Catch Target (ACT)	Recommended by the MSA; can be used to further address uncertainty or other management concerns, and to provide guidance on setting management actions to achieve ACL.
Buffer	Informal term often used by the SSC when referring to the difference between OFL and ABC. Related to the level of assessment uncertainty. May be expressed in absolute values or as a percentage of OFL.
Coefficient of Variation (CV)	Standardized statistical measure of uncertainty, reflecting the dispersion (i.e. spread) of a probability distribution.
Overfishing Level (OFL)	Required by the MSA; annual level of yield provided by the Maximum Fishing Mortality Threshold (MFMT). Determined by the MFMT and the annual stock size.
Maximum Fishing Mortality Threshold (MFMT)	Required by the MSA; Specified on the basis of MSY, typically equal to the fishing mortality rate that provides MSY or its proxy.
Maximum Sustainable Yield (MSY)	The maximum amount of harvest (yield) expected from a stock under assumed equilibrium conditions; actual year to year yields will vary with changes in stock size and characteristics.
Probability Density Function (PDF)	A function that can be used to determine the likelihood of a particular value. In ABC CR use, it can provide the yield associated with a given P*.

The following figures illustrate the relationships between reference points and how OFL and ABC are derived from the yield distribution and the chosen risk tolerance (P*).

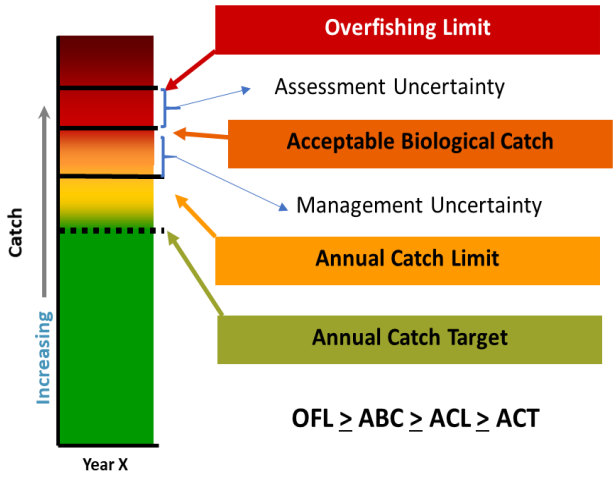


Figure 1Illustrated general relationship between OFL, ABC, ACL, and ACT. The difference between OFL and ABC addresses assessment uncertainty, while the difference between ABC and ACL addresses management uncertainty.

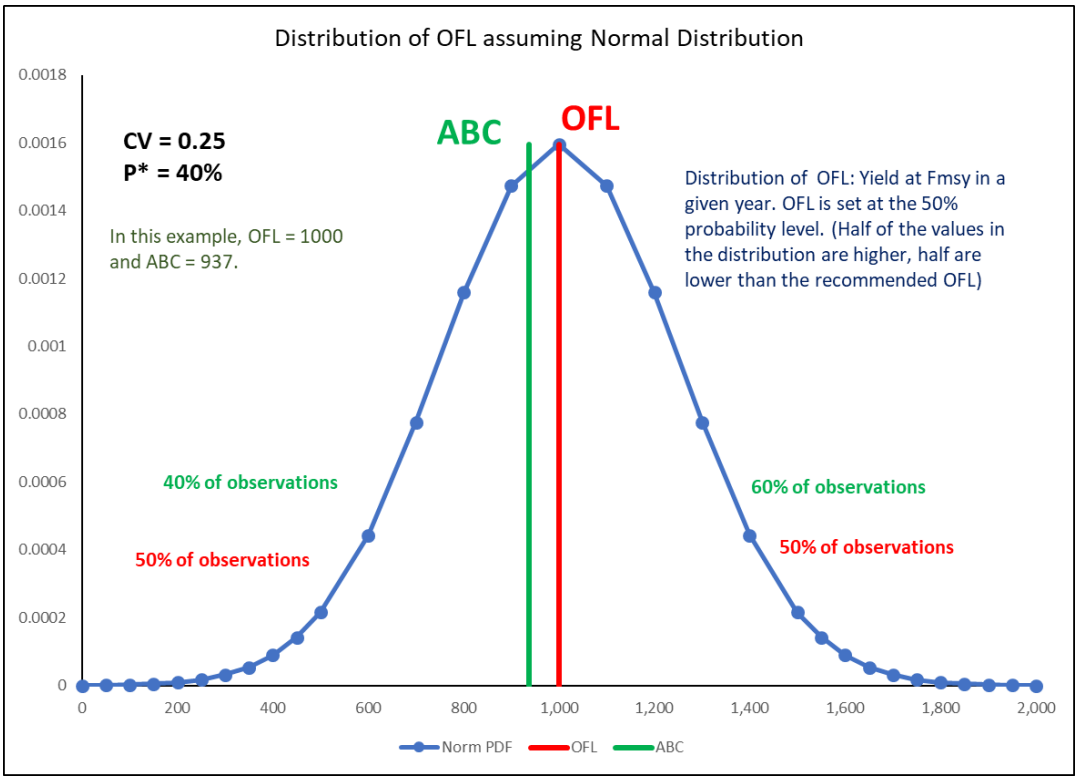


Figure 2. Example distribution illustrating OFL and ABC for a hypothetical stock with OFL=1000 pounds, a chosen risk tolerance or P pf 40% (40% chance that overfishing occurs), and an assessment CV of 0.25.*

How is ABC derived for assessed stocks under this rule? NEW INFO

Three basic items are required to derive an ABC from a stock assessment:

1. Estimates of productivity (i.e. MSY and OFL) and stock assessment uncertainty.

These are products of an assessment and inputs to the ABC Control Rule. Various proxies can be used for unassessed stocks, such as SPR (spawning potential ratio) levels, or Fmax.

a. Estimated yield (OFL) and, ideally, a distribution of its uncertainty or a PDF.

b. Assessment CV that can be applied to the OFL distribution

2. A risk tolerance for overfishing (e.g., P*).

This is set by the Council, as guided by the ABC Control Rule.

4. A method for applying the risk tolerance to the assessment results.

This is addressed by the SSC, guided by the ABC Control Rule, and forms the basis of the ABC recommendation.

a. Direct approach: distribution of OFL used to derive ABC

The P* is applied to the distribution (PDF) of the estimated overfishing level (OFL). MSY or the OFL is based on the midpoint (50^{th} percentile) of the estimated stock yield at FMSY. ABC is based on a different percentile, determined by the P* value. For example, if the risk of overfishing is 30%, P*=0.3 and ABC is determined by the 30^{th} percentile of the OFL yield. The difference between ABC and OFL will vary across assessments, and will depend on the observed OFL distribution.

This is the approach used most often for assessed SAFMC stocks.

(To come: some example OFL distributions)

b. Indirect approach: CV and assumed distribution of OFL used to derive ABC

If the distribution of OFL is not available, or not considered adequate for determining ABC, the ABC can be derived from a measure of assessment uncertainty (CV) and an assumed distribution of OFL. The type of distribution assumed (e.g., normal or log-normal) determines its shape. The CV determines how widely the distribution spreads. Thus, high CV distributions are broad and flat, encompassing many values; while low CV distributions are narrow and steep, encompassing fewer values with many more values centered closely around a mode or median.

Once a CV and type of distribution is decided, the buffer between ABC and OFL can be determined for any risk level. In fact, the buffer can be determined in advance for any combination of CV, distribution, and risk tolerance (P*). To derive ABC, the buffer calculated by the CV, distribution, and P* is applied to the OFL. For example, if a CV of 0.5 and a log-normal distribution of OFL are

assumed, the ABC buffer will be 53%. If the OFL were 100,000 pounds, the OFL would be 47,000 pounds.

V. Proposed Purpose and Need

PURPOSE: Revise the ABC Control Rule and recreational accountability measures for SAFMC FMPs.

NEED:

ABC Control Rule

- Rule is overly prescriptive and formulaic with regard to assessed stocks, Tier 1, thus preventing the SSC from adequately addressing uncertainty differences across stocks or from responding to new methods and techniques.
- Rule is too prescriptive with regard to Tiers 2 and 3 (unassessed stocks), calling upon specific methods, which have in some cases been surpassed by recent developments.
- Some assessment information factors of Tier 1 (assessed stocks) are not appropriate for the stocks addressed under the current rule's Tier 1, and overlap with stocks assigned to other tiers (e.g., includes an adjustment for 'scarce or unreliable catch records' that is inappropriate now that the rule includes tiers addressing catch-only stocks)
- The current rule mixes uncertainty evaluation (an SSC responsibility) with risk tolerance (a Council responsibility); and relies upon the SSC to make recommendations with regard to both components.
- The current rule considers both overfishing and overfished status as a factor in determining risk tolerance
- The current rule relies heavily on a PSA analysis for establishing risk levels, conducted by an outside body (MRAG), which is becoming out of date; aware of no plans to update.
- Rule is becoming out of date. In particular, it does not recognize advances in data limited methods and is not flexible enough to address future advances
- The rule has become inconsistent and potentially contradictory, due to several addenda over the years to address advancements and emerging science.
- Language and definitions have become unclear over time, particularly with multiple use of the word "Tiers".

Accountability Measures

- Accountability measures are inconsistent across FMPs
- In-season adjustment of recreational measures is impeded by data delivery delays and overwhelming lack of confidence in preliminary (partial year) estimates.
- Some existing AMs impose a level of management precision that is incompatible with current data precision.
- Accountability measures do not account for uncertainty in catch estimates.

VI. Potential Actions and Alternatives

(MODIFICATIONS FROM THE NOV 6 WEBINAR VERSION HIGHLIGHTED)

Action 1. Modify the ABC Control Rule to derive ABC based on available information and the level of uncertainty evaluation.

Alternative 1: No Action: Retain existing ABC Control Rule.

Alternative 2: Establish 4 assessment categories based on information available and uncertainty evaluation. (NOTE: THIS ALTERNATIVE IS SUBSTANTIALLY MODIFED)

- Category 1: The stock is assessed and uncertainty is fully evaluated. ABC is derived by applying the risk tolerance (P*) to the assessment OFL distribution.
  Characteristics of Category 1 assessments:
  - Uses a model and approach that is appropriate for the fishery, biological traits of the stock, and available data.
  - Provides stock status and reference point and biomass estimates.
  - Fully addresses uncertainty and promulgates uncertainty through future yield forecasts.
  - Provides a thorough and OFL uncertainty distribution that the SSC considers adequate and complete for use in deriving ABC.
- Category 2. The stock is assessed, but uncertainty is not fully evaluated or some outputs may be lacking. The SSC will adjust the assessment CV or OFL distribution as necessary to adequately address assessment uncertainty. ABC is derived by applying the risk tolerance (P*) to the modified assessment OFL distribution.
  Characteristics of Category 2 assessments:
  - Uses a model and approach that is appropriate for the fishery, biological traits of the stock, and available data.
  - Provides stock status and reference point and biomass estimates.
  - Does not fully addresses uncertainty or does not promulgate uncertainty through future yield forecasts.
  - The OFL distribution or the overall assessment CV is not considered adequate and complete. Therefore, modification and adjustment are necessary for use in deriving ABC.
- Category 3. The stock is assessed, however no uncertainty distribution of OFL is available. The SSC will develop a CV or OFL distribution as necessary to derive ABC, or apply a direct buffer to OFL (or an OFL proxy).
  Characteristics of Category 2 assessments:
  - Uses a model and approach that is appropriate for the fishery, biological traits of the stock, and available data.
  - Provides stock status and reference point and biomass estimates.
  - Does not fully addresses uncertainty or does not promulgate uncertainty through future yield forecasts.
  - The OFL distribution or the overall assessment CV is not considered adequate and complete. Therefore, modification and adjustment are necessary for use in deriving ABC.

- Category 4. The stock is not assessed. ABC will be based on the expert judgement of the SSC.
    - Sub-Alternative 3a: retain the "ORCS" approach of the existing rule for addressing unassessed stocks, and use this to derive ABC when possible.
    - Sub-Alternative 3b: retain the "Decision Tree" approach of the existing rule for addressing unassessed stocks, and use this when possible for stocks not addressed through ORCS.
    - Sub-Alternative 3b: The SSC will set ABC directly, based on its expert judgement and providing justification to support use of this approach rather than ORCS or the Decision Tree.

Alternative 3: Define ABC based on the yield available at 75% Fmsy for any assessment category if an acceptable OFL distribution cannot be derived.

Discussion

This Action will make a major change in the control rule by simplifying the approach and making it more adaptable to future analytical and data developments. It will bring the various changes added over the years into a single comprehensive framework.

Determining how to describe or label the categories has proven challenging at the SSC. Consideration has been given to data levels (rich, moderate, limited) and to assessment levels (quantitative, qualitative, none). Stocks may change categories depending on the approach, as there are data moderate stocks that are not assessed, data limited stocks that are, and considerable overlap between data rich and data moderate with regard to assessment levels. Clear definitions for types of assessments (qualitative or quantitative) are largely lacking. In particular, opinions vary as to the point at which data limited and data moderate assessment efforts move from qualitative to quantitative categories.

The SSC considered addressing these concerns by omitting specific categories altogether, in favor of a simple numbering system with defined key traits. Experiences in other regions suggest that this can lead to implied rankings, with negative consequences on assessment prioritizations for #2 or #3 stocks, and efforts to raise the rankings of stocks to provide a "better" assessment without regard for data availability or potential management improvements. These consequences can even impact attitudes toward assessment personnel assignments and research and monitoring priorities.

Alternative 1: No Action

Alternative 2: Categorize assessed stocks according to treatment of assessment uncertainty

This Alternative proposes 4 categories based on how uncertainty is expressed and how well it is addressed in the quantitative information available. Category descriptions reflect general traits, but do not likely encompass every situation the SSC may face, and therefore the SSC will apply its expert judgement to the breadth of assessment and data information available when determining which category applies. The ability of an assessment to estimate or otherwise provide a quantitative statistic of overall assessment uncertainty (the coefficient of variation or CV) is a key trait that will be considered. Given that, a stock will move among categories based on uncertainty evaluations rather than a specific assessment type.

Category 1: Accepted, complete, estimated distribution of OFL

This category will typically include comprehensive, peer-reviewed, catch-based assessments incorporating ancillary data such as length, age, and survey information. Examples of model categories for this tier are catch-age, catch-length and surplus production. Assessments provide reliable estimates of mortality rates, reference points, and stock productivity. Major sources of uncertainty are fully evaluated and characterized in the assessment, or otherwise included in the parameter estimates.

The probability distribution (PDF) of the overfishing level (OFL) is adequate and complete and can be used as provided to derive ABC.

Category 2: Accepted, estimated, but incomplete distribution of OFL

This category will typically include comprehensive, peer-reviewed, catch-based assessments incorporating ancillary data such as length, age, and survey information. Examples of model categories for this tier are catch-age, catch-length and surplus production. Assessments provide reliable estimates of mortality rates, reference points, and stock productivity. Major sources of uncertainty may be lacking from the assessment evaluation, or the uncertainty may not be carried fully through the projection analyses. As a result, the assessment may over or under estimate actual uncertainty.

The OFL PDF estimated by the model does not fully encompass assessment uncertainty, and is not deemed by the SSC to be reliable or robust enough to directly derive ABC.

Category 3: Assessed stock with no acceptable OFL distribution

This category will typically include stocks with reliable catch information and some auxiliary or biological information, that are assessed through a structured process including peer review, using a wide range of models which can provide estimates or reasonable proxies for stock productivity parameters including ABC or OFL (or an appropriate proxy) but do not provide uncertainty evaluations (i.e., PDF or assessment CV) of those parameters.

The SSC will develop a CV and OFL distribution to derive ABC, or apply a direct buffer to the estimated OFL (or OFL proxy).

Category 4: Unassessed stocks with no OFL distribution.

This category encompasses all remaining stocks for which an ABC value is required, ranging from those addressed through the ORCS approach to those having unreliable landings records.

ABC is based on the expert judgement of the SSC.

Sub-Alternative 3a: retain the "ORCS" approach of the existing rule for addressing unassessed stocks, and use this to derive ABC when possible.

Sub-Alternative 3b: retain the "Decision Tree" approach of the existing rule for addressing unassessed stocks, and use this when possible for stocks not addressed through ORCS.

Sub-Alternative 3b: The SSC will set ABC directly, based on its expert judgement and providing justification to support use of this approach rather than ORCS or the Decision Tree.

Alternative 3: Establish ABC based on the yield at 75% FMSY if no acceptable distribution can be derived.

The Council could select this alternative along with Alternative 2 to add additional flexibility for use by the SSC in setting ABC values.

Considered but Rejected

Establish an Ecosystem Component Category

This alternative would create an additional category to address Ecosystem Component stocks identified by the Council under the MSA guidelines. This approach was rejected because these stocks are not subject to the full suite of fishing level specifications, such as OFL and ABC, and therefore would not be subject to the same control rule provisions as other stocks in the FMU. Including them in the ABC CR will add confusion and unnecessary complexity.

Establish and identify categories based on data levels

- Data labels, particularly "Data poor" can be negative, misleading.
- Many stocks defy clear categorization by data – relative quality can vary greatly across the available data types.
- There are no accepted standards for the typical data descriptors: (rich, limited, moderate, poor, complete, etc)
- Characterizing assessments and stocks by data levels may infer inappropriate or undesired quality or reliability conclusions.
- Data availability is not the salient point to determining how ABC is derived: Assessment information and uncertainty evaluations are.

Establish and identify categories based on assessment levels or types

- Assessment science is always changing, so model types and descriptions can become outdated or limiting (as shown in the purpose and need regarding data limited approaches)
- Assessment outputs and their reliability is more important to deriving the ABC than the particular type or class of model.
- There can be considerable overlap in the outputs of various assessment models, as well as variations in which outputs are reliable and useful for any particular assessment.

- Characterizing assessments and stocks by assessment type may infer inappropriate or undesired quality or reliability conclusions, and lead to efforts to simply move stocks "up" the hierarchy.
- The assessment type or label is not the salient point to determining how ABC is derived: Assessment information and uncertainty evaluations are.

SSC Recommendation

- *Supported Alternative 2.*
- *Recommended Alternative 3 for "considered but rejected" since EC stocks do not require OFL and ABC specification, they are not appropriate to include within the ABC control rule context.*
- *Recommended developing criteria and categories based on the level of uncertainty evaluation, rather than data or assessment categories.*

TASK:

- SSC Workshop or Workgroup to assign managed stocks to categories.

Action 2: Modify the control rule to enable the Council to determine risk tolerance and acceptable probability of overfishing (P*) for determining ABC.

Alternative 1: No Action

Alternative 2: Council will specify its risk tolerance and provide an overfishing level (P*)

Alternative 3: Council will specific the risk tolerance, considering advice and recommendations from the SSC.

Discussion

This action is consistent with prior discussion and recommendations of the SSC and Council.

SSC Recommendation

- *The SSC supports this action.*
- *The SSC recommended including alternative 3 to allow for exchange between the SSC and Council in setting risk tolerance.*

Council Recommendation

- *The Council supports this action.*

Action 3. Establish criteria for determining risk tolerance and acceptable probability of overfishing (P*)

Alternative 1. No Action

Risk tolerance is included with assessment uncertainty in the overall control rule criteria. The Council is not empowered to directly establish risk tolerance.

Alternative 2: Specify risk tolerance using the existing ABC control rule provisions (Tier 1, Dimensions 3 and 4) that address stock status and the PSA analysis.

Alternative 3: Specify default risk tolerance levels that vary based on biomass levels relative to Bmsy and MSST and overall stock risk categories. Risk levels will be set by the Council, considering recommendations from the SSC and APs. The SSC will evaluate risk categories each time a stock is assessed.

Sub-Alternative 3a: Allow the highest risk level when stock biomass exceeds 110% of the biomass at MSY.

Sub-Alternative 3b: Allow the Council to deviate from the default risk levels by 0.1, based on its expert judgment, new information, or recommendations by the SSC or other expert advisors. Risk tolerance may not exceed 0.5.

Alternative 4: Specify risk tolerance for each stock directly.

Alternative 5: Specify risk tolerance for all stocks at 75% FMSY

Discussion

There are many approaches to establishing the risk level and numerous decisions that can be made to address flexibility within each approach.

Alternatives 1 and 2:

These alternatives are not recommended because they do not address the purpose and need. Both the SSC and Council have identified issues with, and suggested changes to, the control rule.

Alternative 3 - New discussion text, table, and numbering

Alternative 3 is based on the premise that risk tolerance is related to stock biomass, and should decline as stock biomass declines. Alternative 3 defines appropriate levels of P* (risk tolerance) based on biomass and a stock risk categorization, using discrete risk levels. The highest risk is allowed when biomass is at or above Bmsy levels. Stocks at this level of biomass are at their lowest risk of becoming overfished. Risk tolerance declines as biomass declines, with the first change occurring when biomass is between Bmsy and the midpoint between Bmsy and MSST. Because the consequences of overfishing are greater as a stock approaches MSST, risk tolerance again declines when the biomass is below the Bmsy-MSST midpoint. Other inflection points could be considered, but it is unlikely that small differences will yield discernible changes in consequences given typical assessment precision. No risk tolerance is specified for biomass levels below MSST, indicating an overfished situation, since ABC values are then derived from the rebuilding schedule.

Stocks will be assigned to risk levels by the Council, based on input and recommendations of the SSC and Advisory Panels. These risk ratings will consider PSA evaluations by both MRAG and NMFS; assessment information such as biomass and fishing level trends, rates of changes, and historic patterns; and the expert judgment and experience of the Council members and advisors. Risk level will be evaluated as needed, and at least each time a stock is assessed.

Table 2. Risk Classification and Specification Table for Alternative 3, Sub-Alternative 3a. Bmsy is the biomass estimated at equilibrium when fishing at Fmsy. MSST is the minimum stock size threshold.

Risk rating	Risk of overfishing for biomass categories		
	Biomass exceeds Bmsy (or 110% Bmsy per sub alternative a)	Biomass is ABOVE the midpoint between BMSY and MSST	Biomass is below the midpoint between BMSY and MSST
low	.5	.45	.4
medium	.5	.4	.3
high	.4	.3	.2

Alternative 3 - Sub-Alternative 3a.
This Sub-Alternative proposes a higher level of biomass for the highest risk rating, thereby providing some additional precaution and a buffer for uncertainty in biomass estimates. Given that point estimates of biomass levels will likely be used to determine biomass categories, this Sub-Alternative should reduce the likelihood that a stock only slightly above or below Bmsy could be fished at a different P*.

Alternative 3 - Sub-Alternative 3b
This Sub-Alternative provides additional, but limited, flexibility for the Council to modify its risk tolerance by 0.1 when deemed necessary. Risk tolerance could not exceed 0.5, per MSY guidelines. As currently proposed, this allowance for deviation is not directional, so the adjustment could be for a higher or lower risk tolerance than suggested in the table. Additionally, this allowance is not discrete and not limited to an adjustment of 0.1. That is the maximum allowed; the intent is that Council could chose any value between no adjustment and 0.1.

Alternative 4
Alternative 4 provides maximum flexibility and minimum guidance. Providing appropriate and consistent risk levels may prove difficult and time consuming.

Alternative 5
Alternative 6 is a simpler approach that avoids setting explicit risk tolerance levels for individual stocks, and instead sets a fishing mortality target (75% Fmsy) that would be used to define ABC. This approach has been used in rebuilding plans and is generally simple to understand and analyze. A recent article[1] suggested this fishing level is robust to preventing overfishing, but could result in some foregone yield over the long term.

Considered but Rejected

Alternative: Specify risk tolerance that declines along a sloped line for biomass levels below Bmsy.

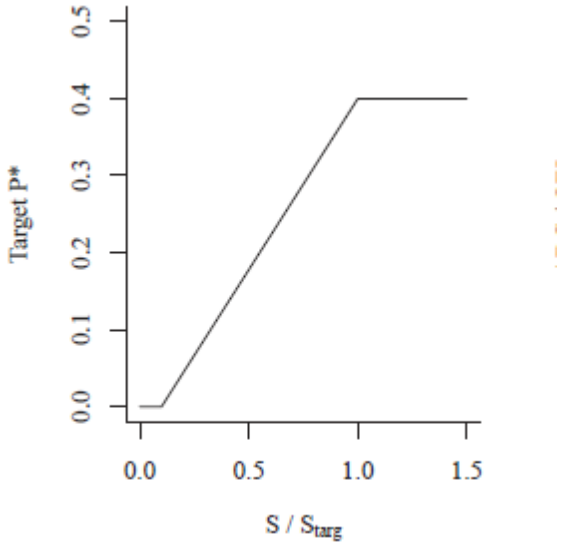
Sub-Alternative 3a: Range 0 to 0.5

[1] Wiedenmann, J., M. Wilberg, A. Sylvia, and T. Miller. 2016. An evaluation of acceptable biological catch (ABC) harvest control rules designed to limit overfishing. Can. Jour. Fish. Aquat. Sci.

Sub-Alternative 3b: Range 0 to 0.45

Sub-Alternative 3c: Range 0 to 0.40

This alternative is based on the approach used by the MAFMC and best described with the following picture, showing a target P* and relative biomass, shown as target stock size (S/Starg):



A number of decisions are required to define this approach, including the maximum target P* (0.4 in the example), the point of downward deflection (S/Starg=1 in the example), the minimum target P* and the biomass level at which P* reaches its minimum. During SAFMC SSC deliberations it was noted that a schedule of this type may not be useful for biomass levels below MSST, since management will be guided by a rebuilding plan. This approach may also become complex or tedious when stock biomass is varying along the sloped portion of the line, as even small changes in estimated biomass will lead to small changes in the target P*, and the perceived risk level will change with each assessment update. During Council consideration in September 2017 concerns were raised that the timing and precision of typical assessments of SAFMC stocks are inconsistent with a control rule of this precision. For these reasons, the Council recommended against considering this alternative further.

The Sub-Alternatives provide a few ways the line can be described based on varying the maximum target P*.

Reason for Rejection**:** The Council and SSC both noted that this alternative imposes of level of precision and specificity on risk tolerance levels that is largely inconsistent with the resolution and timing of available assessment information.

Alternative: Specify two levels of risk based on biomass.

This approach specifies acceptable overfishing risk based on biomass level and stock risk categories, using 2 biomass levels with a change in risk when biomass is below the MSY level.

Sub-Alternative	Risk of overfishing for biomass categories		risk rating
	Biomass greater than MSY level	Biomass between MSY and overfished levels	
4a	.5	.4	low risk
4b	.45	.35	medium risk
4c	.4	.3	high risk

Reason for Rejection**:** The consequences of overfishing are greater as a stock nears the overfished biomass level (MSST), and reduced when the stock is near MSY biomass levels. This alternative only allowed a single risk level for that entire range. A similar, but more useful alternative, was developed that uses an additional biomass category so that the overfishing risk can be reduced as a stock nears the overfished level (MSST). This allows a higher fishing level to help optimize yield when biomass is high while also requiring a lower fishing level to reduce the chance that a stock becomes overfished when biomass levels are lower.

SSC Recommendation

- *The SSC supports establishing risk tolerance that varies with biomass levels and considering the PSA risk categories.*
- *The existing PSA analysis should be updated if it is used in the ABC control rule in the future, and further consideration should be given to the NMFS PSA approach.*

Council Recommendation

- *The Council supports this action and Alternatives 4 – 6.*
- *The Council noted that Alternative 3 imposes a level of precision that is inconsistent with assessment timing and resolution*
- *The Council supports specifying ABC for rebuilding plans through the rebuilding schedule, removing the need for reducing P* values for B<MSST*
- *The Council supports the added flexibility provided in Alternatives 5-6.*

Action 4. Allowing multi-year specification with a fixed ABC.

Alternative 1. No action.
Alternative 2. Provide a fixed ABC for up to 5 years when requested by the Council.
Alternative 3. Provide a fixed ABC for up to 5 years for all stocks.

Discussion

This action addresses a provision in the revised National Standard 1 guidelines. Both the SSC and Council support this change.

Alternatives 2 and 3

These alternatives establish a single "fixed" ABC for up to 5 years. They differ by whether such specifications are provided when specifically requested by the Council or in all cases.

The Council will consult with its scientific (SSC) and fishery (AP) advisors when considering fixed ABC requests. Assessment information such as stock trajectory and volatility, and fishery information such as social and economic conditions, should be considered when deciding whether to, and how long to, establish a fixed ABC.

While the SSC could take the average of annual projections to provide a multi-year ABC, this would not achieve the target P* in each year. The preferred approach recommended by the SSC is to include the fixed ABC in the projections so that the target overfishing risk (P*) is achieved over the years for which ABC is fixed.

SSC recommendation

- *The SSC supported this action for periods of 3-5 years.*

Considered but Rejected

Sub-Alternative: Specify the length of years for the fixed ABC

Sub-Alternative 2a: provide fixed ABC for 3 years.
Sub-Alternative 2b: provide fixed ABC for 4 years.
Sub-Alternative 2c: provide fixed ABC for 5 years.
Justification:
This was rejected in favor of a more flexible approach of specifying a maximum number of years a fixed ABC may be in effect.

Action 5. Allow phase-in of ABC changes based on revised ABC recommendations.

Alternative 1. No action.
Alternative 2. Allow phasing-in of ABC reductions through a 4-step process:

1. Year 1: modified ABC equals a percentage of OFL (as specified in Alternative 4).
2. Year 2: modified ABC equals one-half the difference between OFL and the new ABC recommendation.
3. Year 3: modified ABC equals the original recommended year 3 ABC (based on the projections and analyses that triggered the phase-in).
4. Year 4 and beyond: ABC is based on revised projections that account for the phase-in during years 1-3.

Alternative 3. Establish criteria for when phase-in is allowed.
Sub-Alternative 3a: Allow phasing-in of ABC reductions only when the new ABC is less than 80% of the existing ABC.
Sub-Alternative 3b: Only allow phase-in if the stock is not overfished

Sub-Alternative 3c: **NEW** Alternative biomass level criteria: only allow phase-in if the stock biomass is greater than the midpoint between Bmsy and MSST. This gives more biomass cushion than simply 'not overfished' as propsed in Sub-Alternative 3b. If MSST is set at 50% of Bmsy, phase in would only be allowed if Biomass is greater than 75% of Bmsy.)

Alternative 4: Specify the initial reduction of Step 1 during year 1 of the phase-in.
Sub-Alternative 2a: Year 1 modified ABC = OFL

Sub-Alternative 2b: Year 1 modified ABC = 95% of OFL
Sub-Alternative 2c: Year 1 modified ABC = 90% of OFL

Recommendation:

- Move Alternative 4 to considered but rejected; allow Council to specify the first year ABC at the maximum of OFL. A lower value is more precautionary and would be allowed when desired.

Discussion

This action addresses a provision in the revised National Standard 1 guidelines. Both the SSC and Council support this change to provide greater flexibility to address economic and social impacts from unexpected, major harvest level changes. Phased in reductions may not exceed the OFL. A 3-year phase in period is proposed, based on SSC recommendations. Implementing the phase-in will require first determining a new ABC and deciding if the ABC change justifies phase-in. If so, the Council could specify a modified ABC for years 1 and 2, based on the criteria in this portion of the control rule. In year 3, management would be based on the new ABC recommendation.

Some iteration will be necessary to implement the phase-in when based on assessment projections, as the harvest taken in one year affects the available harvest in later years. Therefore, if the Council decides to apply a phase-in, updated projections will be required to evaluate the phase-in and estimate an appropriate ABC once the phase-in period ends.

Alternative 2

Alternative 2 address the details of the approach. The general concept is to first reduce to some percentage of OFL, then reduce to half the difference between the existing and the new ABC, then reduce to the new year 3 ABC, and finally to an ABC obtained from new projections addressing the phase-in.

The fourth step was added to avoid a do-loop of changing ABCs that could result once projections are revised to address the phase-in, and to make it clear that the original projections that triggered the phase-in process will not be valid once the Council sets modified ABCs through phase-in. In all likelihood, the year 4 ABC after phase-in will be lower than the original year 4 ABC that triggered the phase-in. This approach also allows time for preparing updated projections.

NEW: Alternative 2 Hypothetical Example

Consider an example where the original ABC is 150,000 pounds and a revised ABC is recommended at 100,000 pounds with a revised OFL of 120,000 pounds.

Table 3. Hypothetical ABC values based on a 4-year phase-in.

Year	ABC	OFL	Phase-In ABC	Phase-In ABC basis
prior	150,000	180,000	--	
1	100,000	120,000	120,000	OFL
2	100,000	120,000	110,000	Midpoint between OFL and the new ABC
3	100,000	120,000	100,000	Initial new ABC, before phase in

4	100,000	120,000	70,000	New ABC, with phase-in addressed in projections[1]

1. The adjustment in year 4 ABC is based on the cumulative catch allowed over the 4 years.

- For this simple example, the stock is at equilibrium and ABC is the same all 4 years.
- The total catch allowed for years 1-4 in the original projections is 100,000 X 4 = 400,000 pounds.
- The total catch in years 1-3 under the phased in ABC is 330,000 pounds (120k+110K+100K).
- This leaves 70,000 pounds available in year 4 (400,000 allowed years 1-4 – 330,000 harvested years 1-3).
- In this situation, there is a 30,000-pound penalty to pay in year 4 to support the phase-in: 20,000 overharvest in year 1 and 10,000 in year 2.

NEW: Possible alternative that extends the final step (year 4) to a multi-year specification. This 'spreads out' the payment of the penalty for the overharvest relative to the original ABC that occurs during the phase in period. Using the same circumstances in the example, but extending to 5 years allows the 30,000-pound penalty (overharvest relative to ABC) that occurred in years 1-3 to be spread out over years 4-5.

Table 4. Hypothetical ABC values based on a 5-year phase-in.

Year	ABC	OFL	Phase-In ABC	Phase-In ABC basis
prior	150,000	180,000	--	
1	100,000	120,000	120,000	OFL
2	100,000	120,000	110,000	Midpoint between OFL and the new ABC
3	100,000	120,000	100,000	Initial new ABC, before phase in
4	100,000	120,000	85,000	New ABC, with phase-in addressed in projections[2], and ABC fixed in the final 2 years
5	100,000	120,000	85,000	

These examples clearly show there is a cost to phase in. Other points to consider:

- If the stock trajectory is increasing, such that the new ABC values are increasing, the penalty will be less.
- If the stock trajectory is decreasing, such that the new ABC values are decreasing, the penalty will be greater. Due to the projected relation between stock abundance

and recruits, the penalty could be considerably greater than shown in the simplistic examples.

- The impact of paying back the phase-in penalty could be further reduced by extending the payment period for more years. However, 5 years is the typical maximum over which the SSC considers projections reliable enough to be useful for estimating ABC. Additionally, due to the noted effect of stock size on recruitment, risk of adverse productivity impacts will increase if the payment period is extended.

Alternative 3
Alternative 3 proposes limitations on when phase-in is allowed.

Sub-Alternative 3a allows phasing-in of ABC reductions only when the new ABC is less than 80% of the existing ABC, e.g., when there is a 20% or greater reduction in the ABC.

Sub-Alternative 3b proposes limiting phase-in to stocks that are not overfished (Biomass is greater than MSST).

The proposed new Sub-Alternative, proposed by staff, provide another biomass level to consider. In this Sub-Alternative, the biomass level of the stock would need to be higher than the midpoint between Bmsy and Bmsst. This is more conservative the 3b, as it ensures a higher biomass cushion than simply 'not overfished' as proposed in Sub-Alternative 3b. If MSST is set at 50% of Bmsy, phase in would only be allowed if Biomass is greater than 75% of Bmsy.

Alternative 4
Alternative 4 proposes levels for the initial, first year reduction to be applied during phase-in.

SSC recommendation

- *The SSC supported allowing phase-in.*
- *The SSC commented that percentages of OFL and ABC may have different implications for different stocks due to the wide range of ABC and OFL values observed across SAFMC stocks.*
- *The SSC also suggested that phase-in only be allowed if a stock is above MSST.*

Action 6. Allow carry over of unused or unharvested catch (catches are below ACL).

Alternative 1. No action.

Alternative 2. Allow carry-over of unused ACL if a stock is neither overfished nor overfishing.

Alternative 3. Allow carry-over of unused ACL for a fishery sector that has experienced a regulatory closure due to catch exceeding the ACL at least once in the previous 3 years, and only if total landings over those previous 3 years are less than the total ACL over those years.

Alternative 4. If the OFL is known and defined, the ABC can be revised upwards to accommodate a temporary increase in ACL based on carrying over unused ABC from

the previous year. The revised ABC will remain in place for no more than one year and may not exceed the OFL.

Alternative 5. If the OFL is unknown, then the ABC can be revised upwards to accommodate a temporary increase in ACL based on carrying over unused ABC from the previous year. The revised ABC will remain in place for no more than one year and may not exceed 110% of the original ABC.

Alternative 6. Allow a carry-over of unused ACL up to 5% of the sector ACL.

Discussion

This action addresses a provision in the revised National Standard 1 guidelines. Both the SSC and Council support this change for ensuring full use of ABCs. Overfishing restrictions are not nullified by carry-over so modified ABCs may not exceed the OFL. Existing rules allow a Council to increase the ACL in a year up to the ABC, but this may often be inadequate to offset a prior ACL underage, particularly if ACL=ABC. Changing the control rule to allow the Council to specify a temporary, revised ABC will increase flexibility and the ability to carry over additional unused catch.

The purpose of this action is to allow fisheries to fully access their allowable harvest or ACL.

Alternatives 2 and 3

These alternatives propose conditions under which revising ABC for ACL carry-over is allowed. They are based on SSC discussion indicating that stocks for which a carry-over would be allowed should not be overfished or overfishing, and that carry-over should not be used if there is a large difference between catch and the annual catch limit because this could indicate problems such as reduced abundance.

The requirement to only allow carry over if a regulatory closure occurred during the prior 3 years will prevent this provision from being used for fisheries that are consistently below their ACL.

The requirement to only allow carry over if a regulatory closure occurred during the prior 3 years will prevent this provision from being used for fisheries that lack in-season closure accountability measures. NOTE: Removing in-season closure requirements is under consideration in Action 9 for recreational fisheries. Therefore, other means of fully achieving ACL over time from recreational fisheries, such as the proposed multi-year evaluations, should be considered.

The proposed requirement to only allow carry over if the total landings over 3 years is below the ACL over those 3 years will prevent cumulative overharvest and reduce risk of overfishing if carry-over is allowed following a very large overage.

Alternative 4

This alternative provides for carry-over when OFL is known, and bases the amount that can be carried over on the OFL level. This ensures overfishing does not occur as a result of carry-over.

Alternative 5

Alternative 5 provides for carry-over when OFL is unknown, and bases the carry-over amount on a percentage increase in the ABC.

SSC recommendation

- *The SSC supported this action if applied to stocks that are neither overfished nor overfishing, and have catch close to the ACL.*

Considered but Rejected

Sub-Alternatives 4: Specifying the maximum carry over as a percentage of OFL.

Sub-Alternative 4a: 85% of the OFL.

Sub-Alternative 4b: 90% of the OFL.

Sub-Alternative 4c: 95% of the OFL.

Justification: Setting discrete levels is viewed as overly restraining, complex, and constrictive. There may be situations where the Council wishes to carry over a small percentage. Setting a single maximum level greatly simplifies the alternatives and provides maximum flexibility. Additionally, because this is intended to address situations where the full ACL was not harvested in the prior year, there is likely to be little risk of harvest up to the OFL.

Sub-Alternatives 5: Specifying the maximum carry over as a percentage of ABC.

Sub-Alternative 5a: 102.5% of the original ABC.

Sub-Alternative 5b: 105% of the original ABC.

Sub-Alternative 5c: 110% of the original ABC.

Justification: Setting discrete levels is viewed as overly restraining, complex, and constrictive. There may be situations where the Council wishes to carry over a small percentage. Setting a single maximum carry over allowance simplifies the alternatives and optimizes flexibility.

Action 7. Clarify ABC control rule application to rebuilding stocks.

Alternative 1. No action.

Alternative 2. ABC values for overfished stocks will be based on the Council's approved rebuilding strategy, and OFL values will be based on the annual yield at MFMT.

Discussion

This action clarifies how the Council and SSC approach rebuilding plans. The existing ABC control rule provides a means to develop an alternative probability of rebuilding success for consideration by the Council. It does not clearly state how ABC is derived for rebuilding stocks. In practice, ABCs for rebuilding stocks have been based on the rebuilding strategy chosen by the Council, which is based on a chosen rebuilding period, rebuilding approach, and probability of success.

Alternative 2

Alternative 2 simply reflects the approach used by the Council and SSC, since the ABC control rule was put in place, to define rebuilding plans and ABCs during rebuilding periods.

SSC recommendation

- *The SSC supported this action to clarify practices.*

Action 8. Clarify that the SSC may deviate from the ABC control rule

Alternative 1. No action.

Alternative 2. The SSC may deviate from the specified ABC control rule when necessary, based on its expert judgement.

Alternative 3. The Council may request that the SSC deviate from the specified ABC control rule when necessary, based on its expert judgement.

Other Alternatives: Specific situations to note or address?

Discussion

This action clarifies a provision that is allowed in the National Standards. The SSC recommended including this action to make it clear that deviations are allowed.

The SSC is expected to provide justification for deviating from the ABC CR. The Council is expected to provide justification when requesting that the SSC deviate from the Control rule.

Justification for deviating from the ABC CR, whether initiated by the Council or by the SSC, could include new information that was not included in an assessment or other analysis supporting an ABC; new evidence that is not normally considered in setting ABC, such as social or economic characteristics, that is considered to be important to the situation; evidence of unanticipated changes in a stock (such as related to year class abundance) or a fishery (such as related to regulations or markets or weather).

Deviations from the ABC CR should not be construed as attempts to avoid restricting fisheries and preventing overfishing. Instead, they are considered as a means of addressing unforeseen circumstances and providing the Council flexibility to address National Standards provisions related to equity and managing social and economic consequences and achieving optimum yield.

SSC recommendation

- *The SSC supports this action to clarify practices.*

Council recommendation

- *The Council supports this action to clarify practices.*
- *Recommend that a process be developed for both the Council and SSC to follow when requesting and accommodating ABC CR deviations. Include example criteria and circumstances that justify reconsidering the ABC.*

Action 9. Recreational Accountability Measures

The intent of this action is to revise recreational accountability measures. Addressing this in a comprehensive amendment will alleviate inconsistencies that now exist across different management plans. The Council is also considering removing AMs that require in-season monitoring of recreational ACLs and closures of recreational fisheries to address the lack of precision and timeliness in recreational data collection. Also under consideration is basing recreational measures on numbers rather than weight, due to the additional uncertainty and delay associated with converting recreational estimates to weight, and to be consistent with recreational management actions that are based on numbers.

Alternative 1. No action alternatives will be specified later. Depending on the scope of the amendment, this section may get complex due to different requirements for different species and FMPs.

Alternative 2. Monitor landings closely during the year following an overage.

Example: If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, during the following fishing year recreational landings will be monitored for a persistence in increased landings.

Recommend: Move Alt 2 to considered but rejected: not consistent with the purpose and need of addressing recreational landings uncertainty. Also not clear what "monitoring closely" means, nor how this can be addressed given the concerns in recent years with "spiky" estimates from single MRIP waves.

NEW ALTERNATIVE: Criteria for determining recreational fishery ACL overages and the need for imposing accountability measures.

Sub-Alternative: use a 3-year moving geometric mean of recreational landings to determine if an ACL is exceeded. AMs will only be imposed if the 3-year geometric mean landings exceed the 3-year geometric mean ACL.

Sub-Alternative: use a 3-year cumulative total of recreational landings to determine if an ACL is exceeded. AMs will only be imposed if the 3-year landings total exceeds the 3-year total ACL.

Sub-Alternative: AMs will only be imposed if there is a persistent overage. A persistent overage is defined as landings exceeding ACL in 2 of the previous 3 years.

Sub-Alternative: Establish recreational sector ACLs in numbers of fish, and evaluate landings relative to ACLs using estimated numbers of fish.

Sub-Alternative: If the stock is not in a rebuilding plan, only impose accountability measures if the total stock ABC is exceeded.

Alternative 3. Adjust fishing seasons, bag limits, or vessel limits to address ACL overages. The Council may adjust any recreational regulations as necessary to adjust the ACL overage while maintaining optimum yield and limiting discards losses and social and economic consequences.

Sub-Alternative 3a. Only adjust recreational specifications if the total ACL is exceeded.

Sub-Alternative 3b. Only adjust recreational specifications if the stock is overfished

Example: If necessary, the Regional Administrator shall publish a notice to reduce the length of fishing season and the recreational ACL in the following fishing year by the amount of the recreational overage, only if the species, or one or more species in a species complex, is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded. (SG Amendment 34)

Alternative 4. Establish a pre-determined season

Example: NMFS will annually announce the recreational fishing season start and end dates in the Federal Register and by other methods, as deemed appropriate. The fishing season will start on (set date, e.g. April 1) and end on the date NMFS projects the recreational ACL will be met. (Black Sea Bass: Snapper Grouper Reg 14)

Discussion

(to be provided later)

SSC recommendation

- *SSC has not yet commented*

Considered but Rejected

Alternative 5. Overage payback

If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage. (Black Sea Bass – Snapper Grouper Am 18A)

Justification: This alternative is not consistent with the purpose and need, which is to address recreational catch estimation uncertainty.