Comprehensive ABC Control Rule Amendment

Decision Document

September 2022

Background

The South Atlantic Fishery Management Council (Council) Scientific and Statistical Committee (SSC) developed an acceptable biological catch (ABC) control rule (CR) in 2008, using uncertainty and risk traits to determine the acceptable risk of overfishing. The ABC CR is the method by which ABCs are set, ideally based on an overfishing limit (OFL) from a stock assessment but sometimes using more data-limited methodology. The acceptable risk of overfishing is denoted as P-Star (P*) and is applied through assessment projections to develop the SSC's ABC recommendation. During consideration by the Council and development of the Comprehensive Annual Catch Limit (ACL) Amendment, the SSC added additional levels to the ABC CR to better address unassessed and data-limited stocks.

The ABC CR was implemented by the Council through the Comprehensive ACL Amendment that became effective in April 2012. The Comprehensive ACL Amendment amended fishery management plans (FMP) for Snapper Grouper, Dolphin Wahoo, Golden Crab, and *Sargassum*. A revision to the ABC CR for species managed under the Snapper Grouper FMP occurred in July 2015 when the Only Reliable Catch Stocks (ORCS) approach was added to the CR for snapper grouper stocks, through Amendment 29 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 29).

In applying the ABC CRs, as specified in the Comprehensive ACL Amendment and Amendment 29, to different stocks and assessments from 2012-2016, the SSC began to express concerns that the rules lacked adequate resolution to distinguish differences in uncertainty levels across assessments, did not address continued developments in data poor assessment methods, and mixed uncertainty evaluation (an SSC role under the Magnuson-Stevens Fishery Conservation and Management Act (MSA)) and risk tolerance determination (a Council role under the MSA). Additionally, the existing CR does not provide a means to make use of 2016 revised guidelines for National Standard 1 (NS 1) that increased the flexibility available to regional fishery

management councils for managing catch limits by allowing carry-over of unharvested portions of the ACL and phasing in of catch level changes. While the addition of the ORCS approach to the ABC CR for snapper grouper species represented some progress in addressing data poor assessment developments, it did not address the other ABC CR concerns or the revisions to the NS1 guidelines.

Actions in this amendment

Action 1. Modify the Acceptable Biological Catch Control Rule.
Action 2. Allow phase-in of acceptable biological catch changes.
Action 3. Allow carry-over of unharvested portion of the annual catch limit.
Action 4. Modify framework procedures for the Snapper Grouper, Dolphin Wahoo, and Golden Crab FMPs

Proposed timing

Process Steps	**Dates**
Scoping webinar hearings	January 2019
Council reviews scoping comments, discuss wording of actions and alternatives	March 2019
Council reviews wording of actions and alternatives	March 2021
Council reviews wording of actions and alternatives and SSC comments	September 2021
Council reviews additional SSC input and updated action/alternative language and provides guidance for further development	March 2022
Approval for public hearings	June 2022
Public hearings and approve all actions/alternatives	**September 2022**
Final action to approve for secretarial review	December 2022

Purpose and need statement

Purpose for Actions

The purpose of this amendment is to revise the acceptable biological catch control rule by clarifying the incorporation of scientific uncertainty and management risk, modifying the approach used to determine the acceptable risk of overfishing, and prioritizing the use of stock rebuilding plans for overfished stocks. Additionally, this amendment will specify conditions and procedures for using carry-overs and phase-ins in setting catch limits, including modification of framework procedures to accommodate implementation of carry-overs when applicable.

Need for Actions

The need for this amendment is to ensure catch level recommendations are based on the best scientific information available, prevent overfishing while achieving optimum yield, and include flexibility in setting catch limits as allowed by the Magnuson-Stevens Fishery Conservation and Management Act, and particularly in accordance with 2020 NMFS guidance on carry-over and phase-in provisions.

Council Action

- REVIEW THE PURPOSE AND NEED STATEMENTS AND MODIFY AS NECESSARY.
- APPROVE PURPOSE AND NEED STATEMENTS.

Fishery Management Plans modified by this Comprehensive Amendment

- Snapper Grouper (Amendment 45)
- Dolphin Wahoo (Amendment 11)
- Golden Crab (Amendment 11)

Proposed Actions and Alternatives

Action 1. Modify the Acceptable Biological Catch Control Rule

NOTE: Current ABC values will not change for any species through actions in this amendment. Rather, the new control rule will be prospectively applied through future management actions related to setting catch limits.

Purpose of Action: Changes to the ABC control rule are being considered to clarify responsibilities of the Council and SSC in developing risk and uncertainty components, revise methods for evaluating risk and uncertainty to develop ABCs (including the process used for unassessed stock ABCs), and clarify the use of rebuilding plans to develop ABCs for overfished stocks.

NOTE: Each alternative includes a general description of the proposed ABC CR (with reference to a descriptive table[s]), associated risk tolerance policy, and application of the CR to overfished stocks. Sub-alternatives may be added to alternatives and are not mutually exclusive.

Alternative 1 (No Action). For assessed species, the acceptable biological catch control rule for the Dolphin Wahoo, Golden Crab, and Snapper Grouper Fishery Management Plans classifies assessments according to tiers. Tier classifications are used to determine the accepted probability of overfishing (P*) by reducing from an initial value of 50% according to uncertainty of assessment results and stock vulnerability. Acceptable biological catch is determined through projections of assessment information using the accepted probability of overfishing.

For unassessed species, acceptable biological catch is determined by applying one of the following data-limited methods, as data allow (listed from highest to lowest priority): Depletion-Based Stock Reduction Analysis, Depletion-Corrected Average Catch, Only Reliable Catch Stocks (only included in the Snapper Grouper Fishery Management Plan), and a decision tree based on species catch history.

Determination of acceptable biological catch for overfished stocks undergoing rebuilding is not specified.

Control rule tiers and classifications are described in **Table 1**.

Preferred Alternative 2. Specify an acceptable biological catch control rule for the Dolphin Wahoo, Golden Crab, and Snapper Grouper Fishery Management Plans that categorizes stocks based on the available information and scientific uncertainty evaluation and incorporates the Council's risk tolerance policy through an accepted probability of overfishing (P*). The Council will specify the P* based on relative stock biomass and a stock risk rating.

When possible, the Scientific and Statistical Committee will determine the overfishing limit and characterize its uncertainty based on, primarily, the stock assessment or, secondarily, the Scientific and Statistical Committee's expert opinion. The overfishing limit and its uncertainty

would then be used to derive and recommend the acceptable biological catch, based on the risk tolerance specified by the Council.

Acceptable biological catch for unassessed stocks will be recommended by the Scientific and Statistical Committee based on applicable data-limited methods. Unassessed stocks will be assigned the moderate biomass level, unless there is a recommendation from the Scientific and Statistical Committee for a different level, in which case the SSC recommendation regarding the appropriate level will be used.

For overfished stocks, the Council will specify a stock rebuilding plan (usually $T_{rebuild}$), considering recommendations from the Scientific and Statistical Committee and fishery management plan advisory panel, which will determine the acceptable biological catch while the rebuilding plan is in effect. Per requirements of the Magnuson-Stevens Act, the probability of success for rebuilding plans (1-P*) must be at least 50%.

Control rule categories for assessments are described in **Table 2**. Default P* values based on relative biomass and stock risk rating are shown in **Table 3**.

> **Sub-Alternative 2a.** For relative biomass used to determine the default accepted probability of overfishing, set the boundary between the high biomass and moderate biomass levels at 110% B_{MSY}, and set the boundary between moderate biomass and low biomass levels at the midpoint between 110% B_{MSY} and the minimum stock size threshold.
>
> **Sub-Alternative 2b.** Allow the Council to deviate from the default accepted probability of overfishing by up to 10% for an individual stock, based on its expert judgment, new information, or recommendations by the Scientific and Statistical Committee or other expert advisors. Accepted probability of overfishing may not exceed 50%.
>
> **Sub-Alternative 2c.** When requested by the Council, the Scientific and Statistical Committee will specify the acceptable biological catch for up to 5 years as both a constant value across years and as individual annual values for the same period of years.

Alternative 3. Specify an acceptable biological catch control rule for the fishery management plans for Dolphin Wahoo, Golden Crab, and Snapper Grouper that classifies assessments based on the type of information provided and how uncertainty of information is characterized. The Council will set an initial accepted probability of overfishing (P*) between 30% and 50%, considering advice from the Scientific and Statistical Committee and fishery management plan's advisory panel. The Scientific and Statistical Committee will adjust this value as defined based on assessment information and uncertainty characterization. The adjusted P* will then be applied to derive acceptable biological catch.

Acceptable biological catch for unassessed stocks will be recommended by the Scientific and Statistical Committee based on applicable data-limited methods.

For overfished stocks, the Council will specify a stock rebuilding plan (usually $T_{rebuild}$), considering recommendations from the Scientific and Statistical Committee and fishery management plan advisory panel, which will determine the acceptable biological catch while the rebuilding plan is in effect. Per requirements of the Magnuson-Stevens Act, the probability of success for rebuilding plans (1-P*) must be at least 50%.

Control rule tiers and classifications are described in **Table 4**.

> **Sub-Alternative 3a.** When requested by the Council, the Scientific and Statistical Committee will specify the acceptable biological catch for up to 5 years as both a constant value across years and as individual annual values for the same period of years.

Discussion

An ABC control rule is the method used to determine how much buffer (or reduction from the Overfishing Limit, OFL) is necessary to provide an acceptable risk of overfishing (**Figure 1**). Higher levels of uncertainty and lower levels of tolerance that overfishing will occur result in greater buffers between OFL and ABC and lower ABC levels.

The key components of the ABC control rule are uncertainty and risk. The control rule is developed by the Council and the SSC to define how those components are evaluated to determine ABC. The SSC is responsible for evaluating uncertainty and considering it when applying the ABC control rule. Risk specification is the responsibility of the Council and is based on the Council's tolerance for overfishing occurring. Evaluating risk involves considering characteristics of the species, the stock, and the fishery. Per the MSA, the risk of overfishing (P*) cannot exceed 50%.

Stock assessments often include projections of future removals, which are used to derive OFL and ABC under the current ABC control rule (**Alternative 1**, (**No Action**)). These projections are run many times, such that the results of each projection include robust estimates of variables like landings or population size, as well as measures of uncertainty. To derive the OFL, projections are run with a 50% probability of overfishing occurring (i.e., P*=50%). To derive the ABC, projections are run with P* set at 50% or less (based on adjustments to the P* from the ABC control rule). To derive ABC for a rebuilding plan, the probability of rebuilding (1-P*) must be 50% or greater.

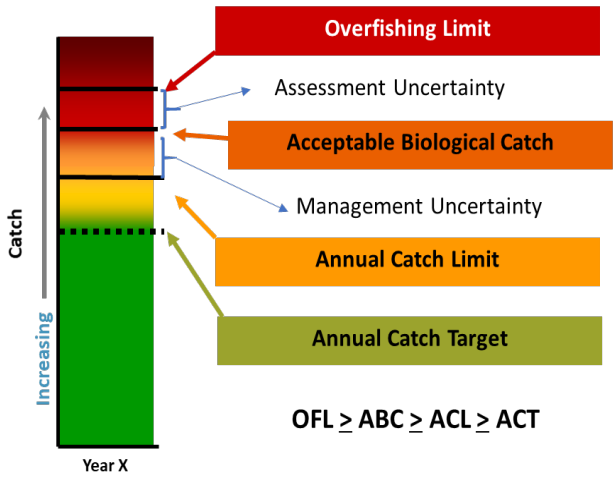

Figure 1. Illustrated general relationship between the overfishing limit (OFL), acceptable biological catch (ABC), annual catch limit (ACL), and annual catch target (ACT). The difference between OFL and ABC addresses assessment uncertainty, while the difference between ABC and ACL addresses management uncertainty.

All Action 1 alternatives would maintain these methods for deriving ABC using P* and OFL. Alternatives consider different approaches and responsibilities for characterizing scientific (assessment or OFL) uncertainty in various scenarios and deriving P* (accepted management risk). Additionally, each of the Action 1 alternatives would include the following guidance concerning reconsideration of ABC recommendations and SSC deviation from the control rule.

Alternative 1 (No Action)

Alternative 1 (No Action) maintains the current control rules set in place for the Dolphin Wahoo FMP and Golden Crab FMP through the Comprehensive Annual Catch Limit Amendment (SAFMC 2011) and Amendment 29 to the Snapper Grouper FMP.

These control rules are described below:

Level 1 – Assessed Stocks

Accepted probability of overfishing (P*) initially set at 50%. Adjustments shown in **Table 1** are subtracted from this initial value.

Table 1. Level 1 (Assessed Stocks) and Levels 1 through 4 (Unassessed stocks of the acceptable biological catch control rule specified by the Comprehensive Annual Catch Limit Amendment for the Fishery Management Plans (FMP) for the Snapper Grouper, Dolphin Wahoo and Golden Crab . Level 5 (Unassessed stocks) of the acceptable biological catch control rule specified by Amendment 29 to the FMP for Snapper Grouper. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

Tier	Tier Classification and Methodology to Compute ABC
1. Assessment Information (10%)	1. Quantitative assessment provides estimates of exploitation and biomass; includes MSY-derived benchmarks. (0%) 2. Reliable measures of exploitation or biomass, no MSY benchmarks, proxy reference points. (2.5%) 3. Relative measures of exploitation or biomass, absolute measures of status unavailable. Proxy reference points. (5%) 4. Reliable catch history. (7.5%) 5. Scarce or unreliable catch records. (10%)
2. Uncertainty Characterization (10%)	1. Complete. Key determinant – uncertainty in both assessment inputs and environmental conditions are included. (0%) 2. High. Key determinant – reflects more than just uncertainty in future recruitment. (2.5%) 3. Medium. Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections. (5%) 4. Low. Distributions of $FR_{MSY}R$ and MSY are lacking. (7.5%) 5. None. Only single point estimates; no sensitivities or uncertainty evaluations. (10%)
3. Stock Status (10%)	1. Neither overfished nor overfishing. Stock is at high biomass and low exploitation relative to benchmark values. (0%) 2. Neither overfished nor overfishing. Stock may be in close proximity to benchmark values. (2.5%) 3. Stock is either overfished or overfishing. (5%) 4. Stock is both overfished and overfishing. (7.5%) 5. Either status criterion is unknown. (10%)
4. Productivity and Susceptibility Analysis (10%)	1. Low risk. High productivity, low vulnerability, low susceptibility. (0%) 2. Medium risk. Moderate productivity, moderate vulnerability, moderate susceptibility. (5%) 3. High risk. Low productivity, high vulnerability, high susceptibility. (10%)

Level 2 – Unassessed Stocks; reliable landings and life history information available

OFL derived from "Depletion-Based Stock Reduction Analysis" (DBSRA). ABC derived from applying the assessed stocks rule to determine the adjustment factor if possible, or from expert judgment if not possible.

Level 3 – Unassessed Stocks; inadequate data to support DBSRA

ABC derived directly from "Depletion-Corrected Average Catch" (DCAC). Done when only a limited number of years of catch data for a fishery are available. Requires a higher level of "informed expert judgment" than Level 2.

Level 4 (Snapper Grouper FMP Only) – Unassessed Stocks. Only Reliable Catch Stocks.

OFL and ABC derived on a case-by-case basis. Apply ORCS approach using a catch statistic, a scalar derived from the risk of overexploitation, and the Council's risk tolerance level.

Level 4 (Dolphin Wahoo and Golden Crab FMPs)/Level 5 (Snapper Grouper FMP) – Unassessed Stocks

OFL and ABC derived on a case-by-case basis. Stocks with very low landings that show very high variability in catch estimates (mostly caused by the high degree of uncertainty in recreational landings estimates), or stocks that have species identification issues that may cause unreliable landings estimates. Use "decision tree":

1. Will catch affect stock?
   NO: Ecosystem Species (Council did this already, ACL Amend)
   YES: Go to 2

2. Will increase (beyond current range of variability) in catch lead to decline or stock concerns?
   NO: ABC = 3rd highest point in the 1999-2008 time series
   YES: Go to 3

3. Is stock part of directed fishery or is it primarily bycatch for other species?
   Directed: ABC = Median 1999-2008
   Bycatch/Incidental: If yes, go to 4.

4. Bycatch. Must judge the circumstance:
   If bycatch in other fishery: what are trends in that fishery? What are the regulations? What is the effort outlook?

   If the directed fishery is increasing and bycatch of stock of concern is also increasing, the Council may need to find a means to reduce interactions or mortality. If that is not feasible, will need to impact the directed fishery. The SSC's intention is to evaluate the situation and provide guidance to the Council on possible catch levels, risk, and actions to consider for bycatch and directed components.

Action 1-Alternative 2

Under **Action 1-Preferred Alternative 2**, the ABC will be derived by applying P* to a stock projection analysis for assessed stocks or an OFL estimated using alternative methods for unassessed stocks, when possible (**Table 2**). If an OFL cannot be estimated, the SSC will derive the ABC directly.

Table 2. Acceptable biological catch control rule proposed in Action 1-**Preferred Alternative 2** for the Dolphin Wahoo, Golden Crab, and Snapper Grouper Fishery Management Plans.

Category	Criteria	ABC Determination
Category 1	Stock is assessed; scientific uncertainty is adequately incorporated.	The P* is applied to the assessment information to derive ABC.
Category 2	Stock is assessed; scientific uncertainty is not adequately evaluated or some assessment outputs may be lacking.	The SSC will adjust the measures of uncertainty, P* will then be applied to the assessment information.
Category 3	The stock is assessed; scientific uncertainty is not adequately evaluated and cannot be addressed by adjusting the available uncertainty measures.	The SSC will develop uncertainty measures as necessary to apply the P* to the available assessment information. Alternatively, the SSC may apply a direct buffer to the overfishing limit (or an overfishing limit proxy) to derive the ABC.
Category 4	No formal stock assessment accepted to provide OFL and ABC recommendations (reviewed through SEDAR or SSC).	OFL and ABC will be developed according to the strategy proposed by the SSC's Data-Limited Working Group (https://safmc.net/wp-content/uploads/2022/05/SSC_May_2021_Report_with_Appendices.pdf). The SSC will attempt to estimate OFL and its uncertainty using available data, applicable methods, and expert judgement. If an OFL and its uncertainty are defined, the SSC will apply P* to derive ABC. If an OFL is unable to be defined, the SSC will directly recommend an ABC. The process of updating OFLs and ABCs for unassessed stocks will occur over time as directed by the Council. The current OFL and ABC for unassessed species and species complexes will be maintained until updated levels are recommended by the SSC and approved by the Council.

Note: The SSC may provide an ABC that deviates from strict application of the approved ABC control rule if necessary to address scientific uncertainty, recruitment variability, declining population trends, or available information. If the SSC deviates from the ABC control rule, it must provide a written explanation describing why the deviation was necessary, how the alternative ABC recommendation is derived, and how the alternative ABC prevents overfishing, addresses scientific uncertainty and the Council's specified risk tolerance level for the stock. As part of the SSC's guidance on deviating from the ABC control rule, a recurring situation when this would be used is in developing ABC for an inter-regionally assessed stock (e.g. yellowtail snapper). For such stocks, the SSCs of all managing regions will cooperatively decide which control rule would be applied to develop ABC. The ABC recommendation to the South Atlantic Council would be the result of the cooperatively agreed upon control rule, including regional allocations as applicable.

For Action 1-**Preferred Alternative 2**, the Council, with advice from the SSC and AP, will evaluate management risk for each stock through a stock risk rating. Stock risk ratings include information currently used in the Productivity and Susceptibility Analysis (PSA), but also incorporate socio-economic and environmental attributes. These recommendations will be revisited when new information becomes available (for example, a new stock assessment). The Council will then specify the risk rating as low, medium, or high risk of overfishing. A higher risk of overfishing would indicate that risk tolerance (the accepted probability of overfishing) should be lower. These stock risk ratings, along with relative biomass levels, will be used to determine the Council's default risk tolerance (P*) for each stock.

The stock risk rating and stock biomass would be used together to derive P*, according to **Table 3**. For example, a stock with high biomass and medium stock risk rating would have a P* of 45%. This would be lower than the OFL, in accordance with MSA. The SSC can recommend the Council reconsider the stock risk rating. This could happen, for example, with the emergence of new scientific studies or new information discovered through a stock assessment.

Table 3. Summary table of default risk tolerance (P*) levels based on stock risk ratings and relative biomass levels, proposed in Action 1-**Preferred Alternative 2**.

Stock Risk Rating	**High Biomass** Biomass exceeds B_{MSY} (or 110% B_{MSY} per Sub-Alternative 2a)	**Moderate Biomass** Biomass is ABOVE the midpoint between B_{MSY} and MSST	**Low Biomass** Biomass is below the midpoint between B_{MSY} and MSST
Low	45%	45%	40%
Medium	45%	40%	30%
High	40%	30%	20%

ABC includes both components of scientific uncertainty and management risk tolerance. Under Action 1-**Preferred Alternative 2**, the ABC can be increased via greater risk tolerance from the Council (higher P*) OR less uncertainty in the projection results (i.e., a narrower distribution about OFL) determined by the SSC. The ABC can be decreased via lower risk tolerance from the Council (lower P*) OR more uncertainty in the projections results (i.e., a wider distribution about OFL) determined by the SSC.

<u>Steps for Stock Risk Rating Use for Assessed Stocks under **Action 1-Preferred Alternative 2**</u>
Before an Operational Assessment:

- SSC and AP recommend risk levels for attributes that contribute to the stock risk rating to the Council. The most current attribute ratings and overall stock risk rating will be shown, and feedback will be requested on whether any changes are necessary to depict the current state of the stock and fishery.
    - Preliminary stock risk ratings are in Appendix F of the draft amendment. Preliminary recommendations will be used to inform future risk determinations but will not impact ABCs that are already in place.
    - Estimates for biological attributes, including natural mortality and age at maturity, should be available from the most recent research track assessment. These values typically would not change prior to the operational assessment, but additional

Council review of changes to these values and effects on the overall risk rating can be accommodated on a case-by-case basis.
    - AP input can be gathered as part of Fishery Performance Reports conducted before each assessment.
- The Council reviews SSC and AP recommendations and determines the stock risk rating.

During an Operational Assessment:

- P* will be derived using an estimate of relative biomass and the Council's stock risk rating, according to **Table 3**.
- Projection analyses will be run using P*=50% and the P* value defined by **Table 3** to derive estimates of OFL and ABC.

Stock Risk Ratings and ABC Recommendations for Unassessed Stocks (Category 4)

- If Action 1-**Preferred Alternative 2** is implemented, the SSC will work through groups of unassessed stocks to determine ABC recommendations.
- Prior to the SSC developing an ABC recommendation for a group of unassessed stocks, the SSC and AP will provide input on stock risk rating attributes and the Council will determine stock risk rating, as described for assessed stocks, without the benefit of the same level of biological information on the stock.
- When possible, OFL will be defined and the ABC control rule will be applied to the OFL and its distribution, as described for assessed stocks. However, in cases where OFL cannot be defined and the SSC recommends ABC directly, the SSC will describe in their report how they considered the Council's stock risk rating in developing their recommendations.

Action 1-Alternative 3

For **Action 1-Alternative 3**, the ABC will be derived by applying P* to a stock projection analysis for assessed stocks or an OFL estimated using alternative methods for unassessed stocks, when possible. If an OFL cannot be estimated, the SSC will derive the ABC directly.

This control rule is described below:

Level 1 – Assessed Stocks

Accepted probability of overfishing (P*) initially set by the Council between 30% and 50%. Adjustments below are subtracted from this initial value.

Table 4. Acceptable biological catch control rule proposed in Action 1-Alternative 3. Level 1 (Assessed Stocks) of the acceptable biological catch control rule specified by the Comprehensive Annual Catch Limit Amendment for the Dolphin Wahoo, Golden Crab, and Snapper Grouper Fishery Management Plans. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

Tier	Tier Classification and Methodology to Compute ABC
1. Assessment Information (10%)	1. Quantitative assessment provides estimates of exploitation and biomass; includes MSY-derived benchmarks. (0%) 2. Reliable measures of exploitation or biomass, no MSY benchmarks, proxy reference points. (5%) 3. Relative measures of exploitation or biomass, absolute measures of status unavailable. Proxy reference points. (10%)
2. Uncertainty Characterization (10%)	1. Complete. Key determinant – uncertainty in both assessment inputs and environmental conditions are included. (0%) 2. High. Key determinant – reflects more than just uncertainty in future recruitment. (2.5%) 3. Medium. Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections. (5%) 4. Low. Distributions of $FR_{MSY}R$ and MSY are lacking. (7.5%) 5. None. Only single point estimates; no sensitivities or uncertainty evaluations. (10%)

Level 2 – Unassessed Stocks

OFL and ABC will be developed according to the strategy proposed by the SSC's Data-Limited Working Group (https://safmc.net/wp-content/uploads/2022/05/SSC_May_2021_Report_with_Appendices.pdf). The SSC will attempt to estimate OFL and its uncertainty using available data, applicable methods, and expert judgement. If an OFL and its uncertainty are defined, the SSC will apply P* to derive ABC. If an OFL or its uncertainty are unable to be defined, the SSC will directly recommend an ABC. The process of updating OFLs and ABCs for unassessed stocks will occur over time as directed by the Council. The current OFL and ABC for unassessed species and species complexes will be maintained until updated levels are recommended by the SSC and approved by the Council.

What are some of the differences between the alternatives?

Alternative 1 (No Action) vs. Preferred Alternative 2

- Different structure and terminology for each.
- Under **Alternative 1 (No Action)**, P* is determined by the SSC based on the quality of information included in the assessment, uncertainty characterization, stock status, and vulnerability to overfishing characterized by the Productivity and Susceptibility Analysis (PSA). Under **Preferred Alternative 2**, the Council develops a stock risk rating in consultation with the SSC and advisory panel (AP). The stock risk rating is a scoring system similar to and based on the PSA, but with the addition of social, economic, and environmental factors. Then, P* is derived based on relative biomass and stock risk rating.

- **Preferred Alternative 2** allows the SSC to adjust or derive the uncertainty of stock assessment results when deemed appropriate, while **Alternative 1 (No Action)** requires use of the uncertainty as estimated by the stock assessment.
- **Preferred Alternative 2** specifies that ABC for overfished stocks will be determined according to a rebuilding plan with a probability of success (1-P*) of at least 50%. **Alternative 1 (No Action)** does not specify how ABC for overfished stocks should be determined (although common practice is for ABC for overfished stocks to come from the rebuilding plan).
- **Alternative 1 (No Action)** restricts data-limited methods that can be used to determine ABC for unassessed stocks to Depletion-Based Stock Reduction Analysis (DBSRA), Depletion-Corrected Average Catch (DCAC), Only Reliable Catch Stocks (ORCS; Snapper Grouper FMP only), or a decision tree. **Preferred Alternative 2** establishes a standing SSC work group that will evaluate ABC for each unassessed stock or complex, and gives the SSC discretion to use the data-limited method they deem most appropriate, provided adequate description and rationale.

Alternative 1 (No Action) vs. Alternative 3

- Under **Alternative 1 (No Action)**, 4 (Dolphin Wahoo and Golden Crab FMPs) or 5 (Snapper Grouper FMP) levels defining different levels of assessment and methods for developing ABC. Under **Alternative 3**, there would be two levels: assessed stocks and unassessed stocks.
- Under **Alternative 3**, Tiers 3 (Stock Status) and 4 (PSA) of Level 1 would be deleted. Additionally, in Tier 1 (Assessment Information), classifications 4 (reliable catch history only) and 5 (unreliable catch records) would be deleted and the 10% potential adjustment for that tier would be redistributed among the remaining 3 tiers. The SSC recommended this change as stocks with only catch information or unreliable catch information could not be fully assessed and would have to be evaluated using data-limited methods (Level 2 under **Alternative 3**).
- Under **Alternative 1 (No Action)**, the SSC reduces P* of Level 1 stocks from an initial value of 50% according to the adjustments defined in each of the 4 Tiers. Under **Alternative 3**, the Council will specify an initial P* between 30% and 50%, considering advice from the Scientific and Statistical Committee and fishery management plan's advisory panel. This initial P* will be reduced according to adjustments defined in Tiers 1 (Assessment Information) and 2 (Uncertainty Characterization).
- **Alternative 3** specifies that ABC for overfished stocks will be determined according to a rebuilding plan with a probability of success (1-P*) of at least 50%. **Alternative 1 (No Action)** does not specify how ABC for overfished stocks should be determined (although common practice is for ABC for overfished stocks to come from the rebuilding plan).
- **Alternative 1 (No Action)** restricts data-limited methods that can be used to determine ABC for unassessed stocks to DBSRA, DCAC, ORCS (Snapper Grouper FMP only), or a decision tree. **Alternative 3** establishes a standing SSC work group that will evaluate ABC for each unassessed stock or complex, and gives the SSC discretion to use the data-limited method they deem most appropriate, provided adequate description and rationale.

Preferred Alternative 2 vs. Alternative 3

- Different structure and terminology for each. Under **Preferred Alternative 2**, four categories of stock assessments (or lack thereof) based on how well uncertainty is estimated. Under **Alternative 3**, two levels of stock assessments (or lack thereof): assessed and unassessed.
- Under **Preferred Alternative 2**, the Council develops a stock risk rating in consultation with the SSC and AP. Then, P* is derived based on relative biomass and stock risk rating. Under **Alternative 3**, the Council will specify an initial P* between 30% and 50%, considering advice from the SSC and AP. This initial P* will be reduced according to adjustments defined in Tiers 1 (Assessment Information) and 2 (Uncertainty Characterization).
- **Preferred Alternative 2** allows the SSC to adjust or derive the uncertainty of stock assessment results when deemed appropriate, while **Alternative 3** requires use of the uncertainty as estimated by the stock assessment.
- **Preferred Alternative 2** overtly includes stock and fishery characteristics through the stock risk rating and uses them to determine P*. **Alternative 3** does not specify a process for determining initial P*.

Summary of Effects

Biological

- Current ABC levels for all the species under the FMPs considered in this amendment would not be changed upon its implementation. Therefore, no immediate and direct biological effects (positive or negative) are expected for the stocks managed under these FMPs from **Preferred Alternative 2** (including **Sub-Alternatives 2a-2c**) and **Alternative 3** (including **Sub-Alternative 3a**), when compared with **Alternative 1 (No Action)**.
- Quantitative effects of Action 1 alternatives on future ABC-setting processes for individual stocks will vary based on assessment information and management decisions made at that time.
- In the long-term, greater indirect and direct positive biological effects could be expected under **Preferred Alternative 2** (including **Sub-Alternatives 2a-2c**), followed by **Alternative 3** (including **Sub-Alternative 3a**), and **Alternative 1 (No Action)**.
    - Biological benefits are greatest under **Preferred Alternative 2** due to:
        - SSC ability to adjust or derive uncertainty of assessment results, especially for assessments with a high degree of uncertainty (at a given P*, more uncertainty means lower ABC)
        - Inclusion of economic, social, and environmental factors in risk evaluation
        - More objective definition of relative biomass categories and distinction made between stocks with biomass close to B_{MSY} and those above B_{MSY}.
        - Lower maximum P* using default values (45% rather than 50% for **Alternatives 1** and **3**)
        - Lower P* especially for stocks that are not overfished but categorized as "low biomass". Lessens the probability of stocks that are not overfished becoming overfished.
        - Expanded number of considerable methods for estimating OFL and ABC of unassessed stocks, relative to **Alternative 1 (No Action)**. Also, makes

use of SSC expertise in determining the most appropriate method for each stock or complex.

- Sub-alternatives
    - **Sub-Alternative 2a**: Biomass thresholds used to determine P* would be greater (more conservative). Therefore, selection of **Sub-Alternative 2a** would be expected to be more biologically beneficial.
    - **Sub-Alternative 2b**: Gives the Council additional flexibility in setting P* that could be used to increase (less biologically beneficial) or decrease (more biologically beneficial) P* depending on information available. Thus, **Sub-Alternative 2b** is overall biologically neutral.
    - **Sub-Alternative 2c** or **Sub-Alternative 3a:** would provide the Council with multiple projections used to depict ABC under different harvest strategies. Can provide added flexibility and potential biological benefits from deciding the most appropriate harvest strategy based on knowledge of the stock and fishery.

Economic

- The greatest economic benefits would be expected from **Preferred Alternative 2** (including its sub-alternatives), followed by **Alternative 3** (including its sub-alternative), and **Alternative 1 (No Action)**.
- **Preferred Alternative 2** (including **Sub-Alternatives 2a-2c**) provides more flexibility to consider management risk and scientific uncertainty. Additionally, **Preferred Alternative 2** allows incorporation of economic information when determining the P* value for a given species.
- **Alternative 3** would potentially provide positive biologic and thus associated economic effects. These economic effects would likely be similar to those described for **Preferred Alternative 2**, but potentially to a lesser degree since economic factors would not specifically be incorporated.
- Lack of flexibility under **Alternative 1 (No Action)** (relative to other alternatives) would potentially result in reduced long-term economic benefits due to decreased ability to incorporate risk and uncertainty into catch level recommendations, which could result in reduced long-term harvest levels and associated economic benefits.

Social

- Overall, greater indirect and direct positive social effects would be expected under **Preferred Alternative 2** and its sub-alternatives, followed by **Alternative 3** and its sub-alternatives, and **Alternative 1 (No Action)**.
- The inclusion of social factors will allow the Council to directly consider the importance of a given species to fishing communities and businesses when determining risk tolerance. Incorporation of the social factors would have long-term social benefits in the form of a more appropriate ABC.
- Additionally, formally considering human dimensions in the scientific process may help to improve stakeholder perceptions of the science going into management decisions.

Administrative

- Administrative effects would be expected to be greater under **Preferred Alternative 2**, followed by **Alternative 3**, and **Alternative 1 (No Action)**.

- Administrative burdens under **Preferred Alternative 2** would be related to SSC and Council involvement and discussions in addition to the status quo in the ABC and ACL determinations.
- Additional administrative effects would be related to educational activities by staff in informing all the constituents.
- Administrative burdens would be further increased with the inclusion of **Sub-Alternatives 2c** or **3a** as additional projections that are not typically included in current assessments would become standard practice.

Council Action

- REVIEW DESCRIPTIVE INFORMATION AND CONFIRM PREFERRED ALTERNATIVE

Action 2. Allow phase-in of acceptable biological catch changes under the acceptable biological catch control rule

NOTE: Current ABC values will not change for any species through actions in this amendment. Rather, the new control rule will be prospectively applied through future management actions related to setting catch limits.

Purpose of Action: In accordance with National Standard 1 Technical Guidance for Designing, Evaluating, and Implementing Carry-over and Phase-in Provisions (2020), eligibility criteria and allowable implementation methods for phasing in changes to ABC are being considered to increase management flexibility and reduce negative economic and social effects from large, immediate changes to the ABC.

Sub-Action 2.1. Establish criteria specifying when phase-in is allowed.

Alternative 1 (No Action). Do not establish provisions to allow the phase-in of acceptable biological catch changes.

Alternative 2. Allow phase-in of increases to acceptable biological catch, as specified by the Council. Allow phase-in of decreases when a new acceptable biological catch is less than:

Sub-Alternative 2a. 60% of the existing acceptable biological catch.
Sub-Alternative 2b. 70% of the existing acceptable biological catch.
Sub-Alternative 2c. 80% of the existing acceptable biological catch.

Alternative 3. Allow phase-in of increases to acceptable biological catch at any stock biomass level, as specified by the Council. Allow phase-in of decreases to acceptable biological catch only:

Sub-Alternative 3a. if stock biomass exceeds the minimum stock size threshold.
Sub-Alternative 3b. if the stock biomass is greater than the midpoint between the biomass that provides maximum sustainable yield and the minimum stock size threshold.

Sub-Action 2.2. Specify the approach for phase-in of acceptable biological catch changes.

Alternative 1 (No Action). No phase-in of acceptable biological catch changes is allowed.

Alternative 2. Phase-in acceptable biological catch decreases over no more than 3 years, as specified in **Table 5**. Acceptable biological catch increases may be phased-in as specified by the Council with advice from the SSC and AP.

Alternative 3. Phase-in acceptable biological catch decreases over no more than 2 years, as specified in **Table 5**. Acceptable biological catch increases may be phased-in as specified by the Council with advice from the SSC and AP.

Alternative 4. Phase-in acceptable biological catch decreases over 1 year, as specified in **Table 5**. Acceptable biological catch increases may be phased-in as specified by the Council with advice from the SSC and AP.

Discussion

This action addresses flexibility allowed under the revised National Standard 1 guidelines (Holland et al. 2020). Phase-in of the ABC is an option the Council can consider to address the social and economic impacts from management changes. Adopting this flexibility does not require the Council to phase-in all ABC changes, nor does adopting one approach prevent the Council for choosing a more restrictive schedule of ABC phase-in.

Sub-Action 2.1 specifies when phase-in would be allowed, addressing the National Standard guidance directing the Council to consider when phase-in is appropriate. Phase-ins are not required by any of the proposed sub-actions or alternatives. Multiple alternatives may be selected under Sub-Action 2.1 to address multiple criteria for allowing phase-ins. Phase-ins of ABC increases are allowed under all considered alternatives, as initial ABCs for those phase-ins would be less than the new recommended ABC levels. Sub-Action 2.1-**Alternative 2** states that the difference between existing and new ABCs must exceed a minimum level (**Sub-Alternative 2a**. 40% difference; **Sub-Alternative 2b**. 30%; **Sub-Alternative 2c**. 20%) to justify phase-in of an ABC decrease. This alternative would specify and limit application of phase-ins for decreasing ABCs to "large changes." Sub-Action 2.1-**Alternative 3** specifies stock conditions that must be met to justify phase-in of an ABC decrease. **Sub-Alternative 3a** would require that a stock must not be overfished (biomass greater than the minimum stock size threshold (MSST)) to allow consideration of phasing in an ABC decrease. **Sub-Alternative 3b** sets a more conservative threshold, requiring stock biomass to be greater than the midpoint between MSST and B_{MSY} for that stock to be eligible for phasing in a decrease to its ABC.

Sub-Action 2.2 specifies the maximum duration for phase-ins of ABC decreases and maximum levels of ABC that can be implemented during the phase-in period for ABC decreases. A longer phase-in period allows a more gradual change from the existing ABC to the new ABC, greater ABCs during the phase-in period, but a lower long-term new ABC after revised projections account for the higher catch limits during the phase-in period. A shorter phase-in period results in a more immediate change from the existing ABC to the new ABC, lower ABCs during the phase-in period, and a higher long-term ABC after revised projections account for the catch limits used during the phase-in period. The Council may use a shorter phase-in period than the maximum specified by this sub-action, if desired.

Sub-Action 4.2-**Alternative 2** allows phase-in decreases over no more than 3 years, which is the maximum phase in period allowed by the NS1 guidelines. The maximum allowable phase in period is shortened for **Alternative 3** (2 years) and **Alternative 4** (1 year). The time periods specified in Sub-Action 2.2-**Alternatives 2-4** are according to the number of years between the existing ABC and the long-term new ABC, which would remain in place following the phase-in period until changed by future actions. The long-term new ABC would differ from the SSC's initial recommended ABC in that the SSC's initial recommended ABC would be based on projections that do not account for a phase-in period, while the long-term ABC would be based on projections that do account for a phase-in period. ABC requirements for different phase-in time periods are shown in **Table 5**. For example, a one-year phase-in does not indicate a within-year change to the ABC, but a single year in which (in the case of a phase-in decrease) the ABC may be less than or equal to the newly recommended OFL (which is greater than the SSC's

initially recommended ABC). Revised projections accounting for this one-year phase-in would then estimate a long-term ABC, which would be implemented in the second year and beyond.

Sub-Action 4.2-**Alternatives 2-4** allows the Council greater flexibility in specifying ABC increases than ABC decreases. Increases to ABC (assuming comparable data between assessments) are generally indicative of an increase in relative biomass and improving stock condition, and may not carry a risk of overfishing. This also allows greater consideration of ecological, social, and economic impacts of an increased ABC and flexibility in how that change can be implemented. Because ABCs during an increasing phase-in would be less than those initially recommended by the SSC, the phase-in time period is not limited (it can exceed the maximum timeframe specified for phase-in decreases by Sub-Action 4.2). Phasing in increases to ABC over a longer time period would result in a greater increase to long-term ABC, and phasing in increases over a shorter period would result in a smaller increase to long-term ABC. Per standard requirements of the MSA, during a phase-in increase, ABC may not exceed the SSC's recommended level.

Table 5. Annual requirements for phase-in of decreases to acceptable biological catches over a 3-year schedule (Sub-Action 2.2-Alternative 2), 2-year schedule (Sub-Action 2.2-Alternative 3), or 1-year schedule (Sub-Action 2.2-Alternative 4).

	3-Year Schedule (Alternative 2)	**2-Year Schedule (Alternative 3)**	**1-Year Schedule (Alternative 4)**
Year 1	Modified acceptable biological catch may not exceed the overfishing limit.	Modified acceptable biological catch may not exceed the overfishing limit.	Modified acceptable biological catch may not exceed the overfishing limit.
Year 2	Modified acceptable biological catch may not exceed one-half the difference between the overfishing limit and the new acceptable biological catch recommendation.	Modified acceptable biological catch may not exceed one-half the difference between the overfishing limit and the new acceptable biological catch recommendation.	NA
Year 3	Modified acceptable biological catch may not exceed the original recommended year 3 acceptable biological catch (based on the projections and analyses that triggered the phase-in).	NA	NA
Subsequent Years	Acceptable biological catch is based on revised projections that account for the phase-in during years 1-3.	Acceptable biological catch is based on revised projections that account for the phase-in during years 1 and 2.	Acceptable biological catch is based on revised projections that account for the phase-in during year 1.

Summary of Effects

Biological

- Positive biological effects would be greatest under the alternative with the lowest amount of harvest**.** Under **Alternative 1 (No Action)**, the Council can accomplish similar biological effects as phasing in ABC increases by setting ABC less than the SSC's recommended level and increasing to the recommended level over time.

Sub-Action 2.1

- Positive biological effects would be greatest under **Alternative 1 (No Action)**, followed by **Alternatives 2** and **3** (including their respective actions).
- **Alternatives 2** and **3** (including their sub-alternatives) under Sub-Action 2.1 could both be selected to increase positive biological effects and reduce the probability that a stock would qualify for phase-in of an ABC decrease, but selection of both **Alternatives 2** and **3** would still have negative biological effects compared to **Alternative 1 (No Action)**.
- **Alternatives 2** and **3** (including their sub-alternatives) under Sub-Action 2.1 would allow phase-in of decrease in the ABC which would allow harvest above ABC levels that would be recommended if phase-ins were not allowed.
- **Sub-Alternative 2a** is most likely to reduce overall harvest compared with **Sub-Alternatives 2b** and **2c** because it would require the largest change in ABC to allow phase-in of a decrease in the ABC. Therefore, **Sub-Alternative 2a** could have the greatest positive biological effects, followed by **Sub-Alternative 2b**, and **Sub-Alternative 2c**, respectively, under **Alternative 2** in Sub-Action 2.1.
- **Sub-Alternative 3b** is more conservative, requiring a higher biomass to qualify for phase-in, and therefore would be expected to have greater positive biological effects when compared with **Sub-Alternative 3a** under **Alternative 3** in Sub-Action 2.1.

Sub-Action 2.2

- Under Sub-Action 2.2, minimizing the time of phase-in for ABC decreases reduces the number of years when ABC is above the level that would be recommended if phase-ins were not allowed. Therefore, positive biological effects would be greatest under **Alternative 1 (No Action)**, followed by **Alternative 4** (phase-in over no more than 1 year), **Alternative 3** (phase-in over no more than 2 years), and **Alternative 2** (phase-in over no more than 3 years) (**Table 5**).

Economic

- The ABC for a species along with corresponding annual catch limits (ACL) that allow for more fish to be landed can result in increased economic benefits if harvest increases without notable effects on the stock of a species. The opposite is applicable to ABCs that allow for lower landings.

Sub-Action 2.1

- Phasing-in an increase in the ABC **Alternatives 2** and **3** under **Sub-Action 2.**1 would result in potential foregone economic benefits if the phase-in process results in restrictions to landings, along with the associated economic benefits of those landings, that otherwise could have been realized if the full ABC, along with the resulting ACL, had been implemented immediately.

- Phasing-in reductions to the ABC could also allow for economic stability and thus increased economic benefits in a fishery by allowing commercial and for-hire business to taper down their dependence on a specific species.
- **Sub-Alternative 2a** has the highest threshold for allowing the phase-in of a new ABC, thus the lowest probability of the three sub-alternatives within this alternative to be allowed, along with the previously described potential economic benefits of allowing phase-in. **Sub-alternatives 2b** and **2c** would have lower thresholds for allowing the phase-in of a new ABC and higher likelihood of incurring the economic benefits of allowing such a phase-in.
- Comparison of **Alternatives 2** and **3** will vary on a case by case scenario, but overall **Alternative 3** would create the same types of economic effects as those described for **Alternative 2**.

Sub-Action 2.2

- In **Sub-Action 2.2, Alternative 2** has the longest phase-in period. This alternative would allow for the greatest short-term economic benefits from relatively higher harvest levels and a longer period to adjust to decreasing harvest levels but also allow for the lowest longer-term economic benefits.
- **Alternatives 3** and **4** in **Sub-Action 2.2** would respectively have comparatively lower short-term economic benefits but higher potential long-term economic benefits.

Social

Sub-Action 2.1

- Phasing in an increase in ABC under **Alternatives 3** and **4** in **Sub-Action 2.1** may result in foregone social benefits if the phase-in process resulted in resources users meeting or exceeding their respective ACLs.
- Regarding decreases in ABC, while the stock ABC would ultimately result in the same ABC as **Alternative 1 (No Action)**, under **Alternatives 2** and **3**, commercial and for-hire business would have additional time to adjust their business plans to account for the full decrease in the ABC level, and associated management restrictions. It would also ensure that fishing opportunities remained available to private recreational fishermen in the interim. Therefore, **Sub-Alternative 2c** would have the great positive social effects followed by **Sub-Alternative 2b**, and **Sub-Alternative 2c**.
- **Alternative 3** would add additional restrictions with **Sub-alternative 3a** being the less restrictive than **Sub-alternative 3b**.

Sub-Action 2.2

- Similarly, under **Sub-Action 2.2** the approach to phase in that maximizes the time-period of which the new ABC is phased is would provide the greatest benefit to fishing communities. Thus, the greatest social benefits could be realized under **Alternative 2**, followed by **Alternative 3**, **Alternative 4**, and **Alternative 1 (No Action)**.

Administrative

- In **Sub-Action 2.1**, administrative effects would be expected to be greatest under **Alternatives 2** and **3** (including their respective sub-alternatives), when compared with **Alternative 1 (No Action)**.
- In **Sub-Action 2.2**, administrative effects would be expected to be greatest under **Alternative 4,** followed by **Alternatives 3, 2,** and **Alternative 1 (No Action)**.

- Administrative burdens would include SSC, AP, and Council discussions to determine whether a phase-in should be used for a stock.
- Additionally, if the Council does decide to phase in an ABC change, additional projections of the ABC that include the phase-in may need to be requested by the Council and developed by the Southeast Fisheries Science Center.
- Additional administrative effects would be related to educational activities by staff in informing constituents and enforcement of any changes to the ACLs.

Council Action

- SELECT PREFERRED ALTERNATIVE(S)

Action 3. Allow carry-over of unharvested portion of the annual catch limit under the acceptable biological catch control rule

NOTE: Current ABC values will not change for any species through actions in this amendment. Rather, the new control rule will be prospectively applied through future management actions related to setting catch limits.

Sub-Action 3.1. Establish criteria specifying circumstances when an unharvested portion of the originally specified sector ACL can be carried over from one year to increase the available harvest in the immediate next year. Carry-overs may not be delayed, and only amounts from the originally specified sector ACL may be carried over. Multiple sub-alternatives may be selected under Alternative 2.

Alternative 1 (No Action). Do not establish provisions to allow the carry-over of annual catch limits.

Alternative 2. Allow carry-over of the unharvested portion of a sector's annual catch limit if the stock status is known, the stock is neither overfished nor experiencing overfishing, an overfishing limit for the stock is defined, and

Sub-Alternative 2a. the stock biomass exceeds the midpoint between the B_{MSY} and MSST biomass levels (or proxies of these levels).

Sub-Alternative 2b. that fishery sector has experienced a regulatory closure due to landings being projected to exceed that sector's annual catch limit at least once in the previous 3 years.

Sub-Alternative 2c. the sum of total landings for all sectors over the previous 3 years is less than the sum of the total annual catch limits over those same years.

Sub-Alternative 2d. ABC decreases are not being phased-in.

Sub-Alternative 2e. there are both in-season accountability measures that restrict annual landings to the annual catch limit and post-season accountability measures that reduce the annual catch limit in the following year according to any landings overages in place for that stock and sector.

Sub-Action 3.2. Specify limits on how much of the unharvested portion of a sector annual catch limit may be carried over from one year to increase the sector annual catch limit in the next year.

Alternative 1 (No Action). No carry-over provisions are currently in place for the Snapper Grouper, Dolphin Wahoo, or Golden Crab Fishery Management Plans.

Alternative 2. Allow carry-over of the unharvested portion of a sector's annual catch limit. The acceptable biological catch and the total annual catch limit may be temporarily increased to allow this carry-over. The temporary acceptable biological catch may not exceed the overfishing limit. The revised total annual catch limit may not exceed the temporary acceptable biological catch or the total annual catch limit plus the carried over amount, whichever is less.

Multiple eligible sectors may use carry-over in the same year. Sector-specific amounts being carried over will be allocated entirely to the sector from which they came unless the sum of the specified total annual catch limit and all sector-specific amounts that could be carried over exceeds the overfishing limit. If the sum of the specified total annual catch limit and all sector-specific amounts that could be carried over exceeds the overfishing limit, the temporary acceptable biological catch will be set equal to the overfishing limit and the difference between the temporary acceptable biological catch and the specified total annual catch limit will be allocated according to sector allocation percentages defined in the fishery management plan.

Alternative 3. Allow carry-over of the unharvested portion of a stock's annual catch limit. The acceptable biological catch may be temporarily increased to allow this carry-over but may not exceed the overfishing limit, the total annual catch limit plus the carried over amount, **or the total annual catch limit plus 25% of the carrying-over sector's annual catch limit**, whichever is least.

Multiple eligible sectors may use carry-over in the same year. Sector-specific amounts being carried over will be allocated entirely to the sector from which they came unless the sum of the specified total annual catch limit and all sector-specific amounts that could be carried over exceeds the overfishing limit or 125% of the total annual catch limit, whichever is least. If the sum of the specified total annual catch limit and all sector-specific amounts that could be carried over exceeds the overfishing limit or 125% of the total annual catch limit, whichever is least, the difference between the temporary acceptable biological catch and the specified total annual catch limit will be allocated according to sector allocation percentages defined in the fishery management plan.

Discussion

This action addresses flexibility allowed under the revised National Standard 1 guidelines (Holland et al. 2020). Carry-over that does not exceed the original ABC can be accommodated under existing rules, using the buffer between the ACL and ABC. However, for many Council stocks, ACL=ABC, so there is no buffer available. Per the National Standard 1 guidance, an ABC CR may include provisions to increase the ABC in the next year to address an ACL underage.

The National Standard 1 guidance addressing carry-overs indicates that Councils must state in their FMP when carry-over can and cannot be used. Sub-Action 3.1 specifies circumstances when carry-over would be allowed (though not required). Under Sub-Action 3.1-**Alternative 1 (No Action)**, no carry-over would be allowed. Sub-Action 3.1-**Alternative 2** addresses criteria defining eligibility for carry-over. Eligibility would be evaluated for an individual stock and individual sector that has a specified ACL. Base criteria for carry-over eligibility are that the stock is not overfished (B>MSST), overfishing is not occurring (F<MFMT), and the stock's OFL is defined. Additional criteria are considered through sub-alternatives. Multiple sub-alternatives under Sub-Action 3.1-**Alternative 2** could be selected and combined.

Sub-Action 3.1-**Sub-Alternative 2a** requires that the stock's biomass be above a more conservative threshold than MSST, the midpoint between MSST and B_{MSY}.

Sub-Action 3.1-**Sub-Alternative 2b** addresses carry-over following catch-based regulatory closures for a fishery sector. A sector must have experienced a catch-based regulatory closure during the prior 3 years to be considered eligible for carry-over. The amount that may be carried over would still be determined from the unused ACL in the immediately preceding year, as specified by Sub-Action 3.2.

Sub-Action 3.1-**Sub-Alternative 2c** bases eligibility on landings history for the entire fishery (all sectors) during the prior 3 years. The sum of all landings during the prior 3 years must be less than the sum of the total ACLs in effect during the same time period. If sector ACLs are specified in different catch units (e.g., one in pounds and another in numbers), landings will be converted and evaluated using the units used to specify ABC.

Sub-Action 3.1-**Sub-Alternative 2d**, would require that carry-overs only be applied for ABCs that are not undergoing a phase-in for an ABC decrease.

Sub-Action 3.1-**Sub-Alternative 2e**, would require that carry-overs only be applied to stocks and sectors that have both in-season accountability measures to limit harvest to the ACL and post-season accountability measures that would pay back ACL overages. The 2020 NS1 guidance recommends against applying carry-overs of underharvests to stocks that do not also have paybacks of overharvest, as this could lead to the long-term average harvest being greater than the ACL.

Sub-Action 3.2 addresses the amount of unused ACL that can be carried over. Carry-over would be applied on a sector-by-sector basis, and the amount that may be carried over may not exceed the amount of unused sector ACL in the prior year. Unharvested portions of the sector ACL will be evaluated using the same units of measurement (e.g., weight or numbers) used to specify catch limits for the sector. If necessary, carried over amounts will be converted to the same unit as the ABC to calculate the temporary revised ABC and compare to the OFL. Sub-Action 3.2-**Alternative 1 (No Action)** would not allow carry-over. Sub-Action 3.2-**Alternatives 2** and **3** specify the amount of unused ACL that can by carried over.

Both **Alternatives 2** and **3** under Sub-Action 3.2 would allow an ABC to be temporarily revised to allow a sector ACL increase that would accommodate the carried over amount. The sum of the sector ACLs (total ACL) may not exceed the revised ABC. Carry-overs are sector-specific, thus if only one sector is carrying over unused ACL, the carried-over amount is allocated completely to that sector, subject to limitations defined in **Alternatives 2** and **3**. If more than one sector is carrying over unused ACL in the same year, each sector's carry-over amount will be completely allocated to the sector from which it was derived, unless the sum of all carry-over amounts plus the specified total ACL is greater than the OFL. In this case, the difference between the temporary revised ABC and the specified total ACL will be allocated using sector allocation percentages specified by the FMP. A revised sector ACL and revised ABC would remain in place for a single fishing year. Following a year that included carry-over, evaluations of carry-over amounts for future years would be based on the ABC and sector ACLs specified by the FMP, not the temporarily revised values.

Under Sub-Action 3.2-**Alternative 2**, a temporarily revised ABC may not exceed the OFL. The OFL places an upper limit on the amount of unused ACL that may be carried over. The carried over amount cannot exceed the difference between the OFL and the specified total ACL.

Under Sub-Action 3.2-**Alternative 3**, a temporarily revised ABC may not exceed the OFL. A temporarily revised ABC also may not exceed the total ACL plus 25% of the sector ACL for the sector carrying over. This sub-alternative includes an additional limitation on the amount that may be carried over, making it more conservative than **Alternative 2** for ACL underages that are greater than 25% of the sector ACL or 25% of the total ACL (if both sectors are carrying over).

Summary of Effects

Biological

Sub-Action 3.1

- Positive biological effects would be expected from alternatives that allow the lowest amount of harvest. In **Sub-Action 3.1**, the greatest positive biological effects would be expected from measures that most limit the occurrence of carry-overs. Therefore, **Alternative 1 (No Action)** would be expected to have greater positive biological effects (by not allowing carry-overs at all) when compared with **Alternative 2** (including its sub-alternatives).
- **Sub-Alternative 2a** would increase the probability that the stock has enough biomass to sustain temporary harvest beyond the specified ABC. **Sub-Alternative 2b** would limit carry-overs to those fisheries that could have harvested more of the ACL (indicated by underharvest) in the absence of an early closure of the fishery. **Sub-Alternative 2c** would limit the probability of average annual harvest exceeding average ACL over a longer time period. **Sub-Alternative 2d** would reduce negative biological effects by not allowing negative effects of carry-over and phase-in of an ABC decrease to be combined. **Sub-Alternative 2e** would limit carry-overs only to those stocks that are able to be closed when the temporary revised ACL is met, reducing the probability of overfishing occurring.
- The greatest positive biological effects under **Sub-Action 3.1** would be expected from **Alternative 1 (No Action)**, followed by **Alternative 2**. Within **Alternative 2**, the greatest positive biological effects would be expected with the addition of all of **Sub-Alternatives 2a-2e**.

Sub-Action 3.2

- In **Sub-Action 3.2**, the greatest positive biological effects would be expected from measures that most limit the amount of ACL that may be carried over. **Alternative 2** would allow carry-over of a sector's unharvested ACL. **Alternative 3** includes all of the limitations for carry-over amounts contained in **Alternative 2**, but also adds that the temporary revised ABC may not exceed the stock's total ACL plus 25% of the sector ACL.
- Therefore, **Alternative 1 (No Action)** would be expected to have the greatest positive biological effects (by not allowing carry-overs at all), followed by **Alternative 3**, and **Alternative 2**, respectively.

Economic

- Allowing carry-over of unused ACL would allow a sector to utilize that portion of the ACL in a subsequent year. This would allow for increased harvest which would increase associated economic benefits.
- For the recreational sector, these increased economic benefits may be characterized by improved consumer surplus (CS) for anglers from elevated harvest levels and increased producer surplus (PS) for for-hire businesses if higher ACLs result in increases in demand for trips onboard charter vessels or headboats.
- For the commercial sector these increased economic benefits may be characterized by improved net operating revenue and thus PS for commercial fishing vessels and dealers. There also may be increases to CS for seafood consumers.
- **Alternative 1 (No Action)** for both **Sub-Action 3.1** and **Sub-Action 3.2** would not allow carry-over of unharvested ACL. As such this would result in comparatively lower economic benefits from foregoing such harvest.

Sub-Action 3.1

- **Alternative 2** and its sub-alternatives (**Sub-Alternatives 2a** through **2e**) would specify criteria for when carry-over of unharvested ACL would be allowed, thus creating the opportunity for increased harvest and associated economic benefits in some circumstances.

Sub-Action 3.2

- In **Sub-Action 3.2**, both **Alternatives 2** and **3** would be expected in increase potential short-term economic benefits, with **Alternative 2** providing slightly higher potential benefits than **Alternative 3** due to fewer restrictions on how much the ABC and resulting ACL could be temporarily increased.
- While difficult to compare the economic effects of each alternative and sub-alternative across sub-actions due to the wide range of applicable circumstance and species, economic benefits are expected to be greater under **Alternative 2** in **Sub-Action 3.1** and **Alternatives 2** and **3** in **Sub-Action 3.2** compared to **Alternative 1 (No Action)** in each sub-action respectively.

Social

Sub-Action 3.1

- Additional social effects would not be expected from **Sub-Action 3.1** - **Alternative 1 (No Action)**, and any unused quota would continue to be unavailable for harvest the following year. Generally, positive effects would be expected for fishermen from a carryover of uncaught quota under **Alternative 2** if the quota provides additional opportunities to retain a fish that would otherwise be unavailable the following year. However, there would be no effects from providing a quota carryover for a given fish stock if the additional quota goes unused.

Sub-Action 3.2

- In general, the higher the ACL, the greater the short-term social benefits that would be expected to accrue, assuming long-term recovery and rebuilding goals are met. The highest potential ACL would be expected to result in the most benefits to participants. **Alternative 2** would allow carry-over of a sector's unharvested ACL so long as it does not exceed the OFL or the total ACL plus the carried over amount. **Alternative 3** adds

an additional limit, restricting the ABC to the stock's total ACL plus 25% of the sector ACL.

- Under the alternatives proposed in **Sub-Action 3.2**, the greatest benefits to fishery participants, communities, and associated fishing businesses would be expected under **Alternative 2**, followed by **Alternative 3**, and **Alternative 1 (No Action)**.

Administrative

- Administrative burdens would include SSC, AP, and Council discussions determining whether a stock can carry over unharvested ACL in years when it meets the conditions defined in **Sub-Action 3.1**, as well as staff work to incorporate the Council's decision on carry-overs into an amendment or regulatory amendment to the FMP.
- Additional administrative effects would be related to educational activities by staff in informing all the constituents and enforcement of any changes to the ACLs.

Sub-Action 3.1

- In **Sub-Action 3.1**, administrative effects would be expected to be greatest under **Alternative 2** (including its sub-alternatives), when compared with **Alternative 1 (No Action)**.
- Within **Alternative 2**, administrative burdens would be expected to be greater under **Sub-alternatives 2a**, **2b**, and **2c**, when compared with **Sub-alternatives 2d** and **2e**, because of the complexity of calculations in establishing the criteria when carry-over could be allowed.

Sub-Action 3.2

- In **Sub-Action 3.2**, administrative effects would be expected to be greater under **Alternatives 2** and **3,** compared to **Alternative 1 (No Action)**.

Council Action

- PROVIDE GUIDANCE ON WHETHER FISHERIES WITH SPLIT SEASONS AND SUB-SECTOR ALLOCATIONS (SUCH AS GEAR ALLOCATIONS) SHOULD BE ELIGIBLE FOR INTERANNUAL CARRY-OVER.
- SELECT PREFERRED ALTERNATIVE(S)

Action 4. Modify framework procedures for the Snapper Grouper, Dolphin Wahoo, and Golden Crab Fishery Management Plans

*NOTE: **Action 4** was added to this amendment to address implementation of carry-overs. This approach was taken to more specifically define the process of carry-over implementation within the FMPs' framework procedures. Current ABC values will not change for any species through actions in this amendment. Rather, the new control rule will be prospectively applied through future management actions related to setting catch limits.*

Sub-Action 4.1. Modify Section I of the Snapper Grouper Framework Procedure to include a framework process to approve carry-overs.

Alternative 1 (No Action). Do not modify the Snapper Grouper Fishery Management Plan framework procedure.

Alternative 2. Modify the Snapper Grouper Fishery Management Plan framework procedure by adding the following language to Section I:

Single season adjustments to ABCs and ACLs to allow carry-over of unused sector ACL may be implemented through this framework procedure. This procedure is only available for use when the applicable ABC and ACLs were approved according to the ABC control rule authorizing carry-over and have been implemented pursuant to the FMP with the potential for carry-over already addressed.. This process is authorized as follows:

a. When specifying an ABC and ACL for a stock, or through specific action on an existing ABC and ACL, the Council will determine whether carry-over will be authorized, if annual conditions cause a stock ACL or sector ACL to qualify for carry-over. In doing so, the Council will consider potential need for, and benefits of, carry-over for stocks that could become eligible according to criteria specified in the ABC control rule. The Council will also determine the duration of time when the specified ABC and ACL are effective. An amendment or framework that specifies carry-over for a stock will include analysis of the relevant biological, economic, and social information necessary to meet the criteria and guidance of the existing ABC Control Rule.
    i. To support potential carry-over justification, a Term of Reference will be added for stock assessments to project the maximum amount of landings beyond the ABC that could be carried over in one year while not resulting in overfishing nor the stock becoming overfished within the projection period.
b. Following the conclusion of each fishing year, staff will notify the Council if any stocks and sectors for which carry-over is approved qualify based on the previous year's landings, potentially using preliminary landings estimates.
c. If a sector qualifies for carry-over according to specifications of the ABC and annual landings meeting criteria specified in the ABC control rule, NOAA Fisheries will enact carry-over of eligible landings from the previous year.
d. If the Council chooses to deviate from the criteria and guidance of the effective ABC control rule, this abbreviated process would not apply.

Sub-Action 4.2. Modify the Dolphin Wahoo Fishery Management Plan framework procedure to include a framework process to approve carry-overs.

Alternative 1 (No Action). Do not modify the Dolphin Wahoo Fishery Management Plan framework procedure.

Alternative 2. Modify the Dolphin Wahoo Fishery Management Plan framework procedure by adding the following language:

Single season adjustments to ABCs and ACLs to allow carry-over of unused sector ACL may be implemented through this framework procedure. This procedure is only available for use when the applicable ABC and ACLs were approved according to the ABC control rule authorizing carry-over and have been implemented pursuant to the FMP with the potential for carry-over already addressed.. This process is authorized as follows:

a. When specifying an ABC and ACL for a stock, or through specific action on an existing ABC and ACL, the Council will determine whether carry-over will be authorized, if annual conditions cause a stock ACL or sector ACL to qualify for carry-over. In doing so, the Council will consider potential need for, and benefits of, carry-over for stocks that could become eligible according to criteria specified in the ABC control rule. The Council will also determine the duration of time when the specified ABC and ACL are effective. An amendment or framework that specifies carry-over for a stock will include analysis of the relevant biological, economic, and social information necessary to meet the criteria and guidance of the existing ABC Control Rule.
    i. To support potential carry-over justification, a Term of Reference will be added for stock assessments to project the maximum amount of landings beyond the ABC that could be carried over in one year while not resulting in overfishing nor the stock becoming overfished within the projection period.
b. Following the conclusion of each fishing year, staff will notify the Council if any stocks and sectors for which carry-over is approved qualify based on the previous year's landings, potentially using preliminary landings estimates.
c. If a sector qualifies for carry-over according to specifications of the ABC and annual landings meeting criteria specified in the ABC control rule, NOAA Fisheries will enact carry-over of eligible landings from the previous year.
d. If the Council chooses to deviate from the criteria and guidance of the effective ABC control rule, this abbreviated process would not apply.

Sub-Action 4.3. Modify the Golden Crab Fishery Management Plan framework procedure to include a framework process to approve carry-overs.

Alternative 1 (No Action). Do not modify the Golden Crab Fishery Management Plan framework procedure.

Alternative 2. Modify the Golden Crab Fishery Management Plan framework procedure by adding the following language:

Single season adjustments to ABCs and ACLs to allow carry-over of unused sector ACL may be implemented through this framework procedure. This procedure is only available for use when the applicable ABC and ACLs were approved according to the ABC control rule authorizing carry-over and have been implemented pursuant to the FMP with the potential for carry-over already addressed. This process is authorized as follows:

a. When specifying an ABC and ACL for a stock, or through specific action on an existing ABC and ACL, the Council will determine whether carry-over will be authorized, if annual conditions cause a stock ACL or sector ACL to qualify for carry-over. In doing so, the Council will consider potential need for, and benefits of, carry-over for stocks that could become eligible according to criteria specified in the ABC control rule. The Council will also determine the duration of time when the specified ABC and ACL are effective. An amendment or framework that specifies carry-over for a stock will include analysis of the relevant biological, economic, and social information necessary to meet the criteria and guidance of the existing ABC Control Rule.
    i. To support potential carry-over justification, a Term of Reference will be added for stock assessments to project the maximum amount of landings beyond the ABC that could be carried over in one year while not resulting in overfishing nor the stock becoming overfished within the projection period.
b. Following the conclusion of each fishing year, staff will notify the Council if any stocks and sectors for which carry-over is approved qualify based on the previous year's landings, potentially using preliminary landings estimates.
c. If a sector qualifies for carry-over according to specifications of the ABC and annual landings meeting criteria specified in the ABC control rule, NOAA Fisheries will enact carry-over of eligible landings from the previous year.
d. If the Council chooses to deviate from the criteria and guidance of the effective ABC control rule, this abbreviated process would not apply.

- **Action 4** addresses the process by which catch limits would be temporarily adjusted to accommodate carry-over. This process would be incorporated into the framework procedures for each of the Snapper Grouper, Dolphin Wahoo, and Golden Crab FMPs.
- Under existing procedures, the Council could ask the SSC to consider recommending a temporary, higher ABC to accommodate carry-over. This approach is not particularly efficient, given the timing of Council and SSC meetings and the need to implement carry-overs within a fishing year based on landings from the previous year.
- Under **Alternative 2** in **Sub-Actions 4.1-4.3**, single season adjustments to ABCs and ACLs to accommodate carry-overs would occur automatically for stocks for which: 1) the SSC has recommended be eligible for potential carry-over when recommending the ABC, 2) the Council has decided be eligible for potential carry-over when specifying the ABC and ACL, and 3) annual conditions have fulfilled criteria specified in Action 3.
    - This procedure would not require additional public, SSC, or advisory panel comment, as comments relevant to the ABC being approved with potential for carry-over would be part of the development process for the amendment or framework in which the ABC and ACL are specified.

Discussion

Action 4 addresses the process by which catch limits would be temporarily adjusted to accommodate carry-over. This process would be incorporated into the framework procedures for each of the Snapper Grouper, Dolphin Wahoo, and Golden Crab FMPs.

Under existing procedures, the Council could ask the SSC to consider recommending a temporary, higher ABC to accommodate carry-over. This approach is not particularly efficient, given the timing of Council and SSC meetings and the need to implement carry-overs within a fishing year based on landings from the previous year.

Under **Alternative 2** in **Sub-Actions 4.1-4.3**, single season adjustments to ABCs and ACLs to accommodate carry-overs would occur automatically for stocks for which: 1) the SSC has recommended be eligible for potential carry-over when recommending the ABC, 2) the Council has decided to be eligible for potential carry-over when specifying the ABC and ACL, and 3) annual conditions have fulfilled criteria specified in Action 3.

This procedure would not require additional public, SSC, or advisory panel comment, as comments relevant to the ABC being approved with potential for carry-over would be part of the development process for the amendment or framework in which the ABC and ACL are specified.

Summary of Effects

Biological

- No biological effects on any species under the Snapper Grouper, Dolphin and Wahoo, and Golden Crab FMPs would be expected under **Alternative 2** in **Sub-Actions 4.1**, **4.2**, and **4.3**, when compared with **Alternative 1 (No Action)**, because this action (and sub-actions) affects the timing of implementing carry-overs, but not the harvest levels that would be implemented.

Economic

- Modifying the framework procedure for the Snapper Grouper (**Sub-Action 4.1**), Dolphin Wahoo (**Sub-Action 4.2**), and Golden Crab (**Sub-Action 4.3**) FMPs would help implement the ability to carry-over unharvested ACL in a timelier manner.
- Under **Alternative 1 (No Action)** for each sub-action respectively, carry-over measures could still be implemented but these measures would need to go into place via a plan amendment rather than a framework amendment.
- Plan amendments typically take longer to put into place, thus increasing the time that the initial potential economic benefits from carry-over could occur.
- Additionally, there are often higher administrative costs from developing a framework amendment compared to a plan amendment.
- Therefore, **Alternative 2** for each sub-action, which would allow carry-over to be implemented via framework, would likely result in more timely economic benefits and fewer costs than **Alternative 1 (No Action)**.

Social

- Modification of the framework procedure of for the Snapper Grouper (**Sub Action 4.1**), Dolphin Wahoo (**Sub-Action 4.2**) and Golden Crab (**Sub-Action 4.3**) FMPs would not be expected to result in any direct social impacts.
- Rather, indirect social effects would be expected and would result in broad, long-term social benefits, and minimal negative social effects.
- The relative speed at which beneficial regulatory changes can be implemented can play a role in determining the magnitude of the anticipated indirect social effects.
- **Alternative 2** would reduce the required time to modify the ACLs if a carryover occurs by allowing the Council to propose changes through the framework procedure.
- Although **Alternative 2** reduces the opportunity for public comment of proposed measures, the expedited process is expected to benefit fishery participants through more timely management changes that respond to new information and may result in greater fishing opportunities. Standard public participation and review opportunities remain available as part of the framework procedure under all alternatives

Administrative

- **Alternative 2** under each of **Sub-Actions 4.1**, **4.2**, and **4.3**, would be expected to have greater administrative effects compared to **Alternative 1 (No Action)** of those respective sub-actions.
- Administrative burdens would include SSC, AP, and Council work to develop framework amendments implementing ABCs with carry-over in eligible years.
- Administrative burdens would also include single season adjustments to ABCs and ACLs for applicable stocks.
- Additional administrative effects would be related to educational activities by staff in informing all the constituents and enforcement of any changes to the ACLs.
- In the long-term, the abbreviated process outlined under **Alternative 2** in **Sub-Actions 4.1**, **4.2**, and **4.3 (Section 2.4.1)**, would be expected to have beneficial administrative effects in reducing staff time and workload, especially during the rulemaking process.

Council Action

- SELECT PREFERRED ALTERNATIVE(S)

- APPROVE ALL ACTIONS IN THE ABC CONTROL RULE AMENDMENT