Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

DECISION DOCUMENT

Amendment to the ABC Control Rule

SEPTEMBER 2013

Background

The Scientific and Statistical Committee (SSC) met in April 2013. Among the items on the agenda was application of the Only Reliable Catch Stocks (ORCS) methodology to unassessed South Atlantic stocks and possible modification of the ABC Control Rule to incorporate the ORCS methodology. From the final April 2013 SSC report:

Application of the ORCS method to set ABC for several unassessed South Atlantic stocks was completed during this second workshop. However, final review and approval by the Council is still needed before ABC values can be formally adopted. The SSC also discussed modifications to the ABC Control Rule to: 1) adopt the ORCS method for setting ABC for catch only stocks, and 2) create a new tier to accommodate unassessed stocks that do not qualify for application of the ORCS method (i.e., stocks without reliable catch series). Based on these discussions the Committee recommends that the ORCS method be used for Tier 4 of the ABC Control Rule, and that a new Tier 5 based on application of the Decision Tree Approach be created for stocks that do not qualify for Tier 4.

To adopt the SSC's recommended modifications to the ABC control rule, the Council must choose a risk tolerance level. The chosen level will determine the appropriate scalar used in calculating the ABC for stock assigned to Tier 4. Subalternatives 2a-2d present options for the risk tolerance levels the Council could chose from.

At their June 2013 meeting, the Council approved the following motions:

MOTION: DIRECT STAFF TO DEVELOP AMENDMENT 29 TO MODIFY THE COUNCIL'S ABC CONTROL RULE AND ADOPT NEW ABCs AND ACLs BASED ON THOSE MODIFICATIONS. ***COUNCIL INTENDS TO INCLUDE IN AM 29 A PROCESS WHEREBY THE ADVISORY PANELS WOULD PROVIDE FEEDBACK ON ABCs AND ACLs FOR ORCS*****

MOTION: THE COUNCIL INTENDS TO DEVELOP AMENDMENT 29 TO ADOPT THE SSC'S RECOMMENDED CHANGES TO THE ABC CONTROL RULE AND ADJUST ABCs AND ACLs BASED ON THOSE MODIFICATIONS. DEVELOPMENT OF THIS AMENDMENT WILL TAKE PLACE IN 2014.

An Interdisciplinary Plan Team (IPT) has been configured for this amendment. The IPT has not yet convened to formulate recommendations, however.

Proposed Actions and Alternatives

Action 1. Amend the South Atlantic Council's ABC Control Rule and specify ABCs based on those modifications

Alternative 1 (No Action). Continue to utilize the South Atlantic Council's ABC control rule as adopted in the Comprehensive Annual Catch Limit (ACL) Amendment to specify ABCs for snapper grouper species.

Level 1 – Assessed Stocks	
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 F_{MSY} 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 – Risk 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 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 - Unassessed Stocks. Inadequate data to support DCAC or DBSRA	
	OFL and ABC derived on a case-by-case basis. ORCS ad hoc group is currently working on what to do when not enough data exist to perform DCAC.

Level 5 - Unassessed Stocks. No reliable catch.	
	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 largely done 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.

Note: The ABC control rule provides a hierarchy of dimensions and tiers within dimensions used to characterize uncertainty associated with stock assessments in the South Atlantic. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

Alternative 2. Adopt the SSC's recommended approach to determine ABC values for Only Reliable Catch Stocks (ORCS). This approach will become Level 4 of the ABC Control Rule.

Level 1 – Assessed Stocks	
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 F_{MSY} 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 – Risk 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 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 - 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 5 - Unassessed Stocks. No reliable catch.	
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 largely done 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.

Catch Statistic: The median was considered inadequate to represent the high fluctuation in landings—i.e., to appropriately capture the range of occasional high landings—and the maximum catch over the period 1999-2007 was chosen instead. The time period was chosen to (1) be consistent with the period of landings used in the Council's Comprehensive ACL Amendment, and (2) to minimize the impact of recent regulations and the economic down turn on the landings time series.

Risk of Overexploitation: Based on SSC consensus and expert judgment each stock is assigned to a final risk of exploitation category. See **Appendix A** for a detailed description of the attributes used to assess the level of risk.

A scalar scheme consistent with the Risk of Overexploitation categories is assigned to stocks as follows:

Risk of Overexploitation	Scalar Value
Low	2
Moderate Low	1.75
Moderate	1.5
Moderate High	1.25

Important Note: given characteristics specific to South Atlantic stocks the group agreed that the "catch statistic × scalar" metric developed in this stage of the process may not represent a reliable proxy for OFL and, therefore, would not be called OFL or used as such.

Risk Tolerance Level: The next step in the process involves multiplying the "catch statistic × scalar" metric by a range of scalar values that reflects the SAFMC's risk tolerance level.

Sub-alternative 2a. Use 0.75(catch statistic x scalar) for stocks with low, moderate and high risk of overexploitation.

Stock	Risk of Overexploitation	Scalar	Catch Statistic	ABC Risk Tolerance Sub-alt. a	SG Reg 13 ABC
Bar Jack	Low	2	34,583	51,875	24,780
Margate	Moderate	1.5	63,993	71,992	29,889
Red Hind	Moderate	1.5	27,570	31,016	24,867
Cubera Snapper	Moderate	1.5	52,721	59,311	24,680
Blue Runner	Moderate	1.5	1,328,272	1,494,306	1,125,729
Yellowedge Grouper	Moderate	1.5	46,330	52,121	30,221
Blueline Tilefish	Moderate	1.5	482,973	543,344	631,341
Silk Snapper	Moderate	1.5	75,269	84,678	25,104
White Grunt (South)	Moderate	1.5	735,873	827,858	674,033
Atlantic Spadefish	Moderate	1.5	677,065	761,698	189,460
Gray Snapper	Moderate	1.5	1,039,277	1,169,187	795,743
Lane Snapper	Moderate	1.5	169,572	190,769	119,984
Rock Hind	Mod High	1.25	42,849	40,171	37,953
Tomtate	Mod High	1.25	105,909	99,290	80,056
Hogfish	Mod High	1.25	211,595	198,370	134,824
White Grunt (North)	Mod High	1.25	735,873	689,881	674,033
Scamp	Mod High	1.25	596,879	559,574	509,788
Gray Triggerfish	Mod High	1.25	819,428	768,214	626,518

Sub-alternative 2b. Use 0.75(catch statistic x scalar) for stocks with low and moderate risk of overexploitation. Use 0.50(catch statistic x scalar) for stocks with high risk of overexploitation.

Stock	Risk of Overexploitation	Scalar	Catch Statistic	ABC Risk Tolerance Sub-alt. b	SG Reg 13 ABC
Bar Jack	Low	2	34,583	51,875	24,780
Margate	Moderate	1.5	63,993	71,992	29,889
Red Hind	Moderate	1.5	27,570	31,016	24,867
Cubera Snapper	Moderate	1.5	52,721	59,311	24,680
Blue Runner	Moderate	1.5	1,328,272	1,494,306	1,125,729
Yellowedge Grouper	Moderate	1.5	46,330	52,121	30,221
Blueline Tilefish	Moderate	1.5	482,973	543,344	631,341
Silk Snapper	Moderate	1.5	75,269	84,678	25,104
White Grunt (South)	Moderate	1.5	735,873	827,858	674,033
Atlantic Spadefish	Moderate	1.5	677,065	761,698	189,460
Gray Snapper	Moderate	1.5	1,039,277	1,169,187	795,743
Lane Snapper	Moderate	1.5	169,572	190,769	119,984
Rock Hind	Mod High	1.25	42,849	26,781	37,953
Tomtate	Mod High	1.25	105,909	66,193	80,056
Hogfish	Mod High	1.25	211,595	132,247	134,824
White Grunt (North)	Mod High	1.25	735,873	459,921	674,033
Scamp	Mod High	1.25	596,879	373,049	509,788
Gray Triggerfish	Mod High	1.25	819,428	512,143	626,518

Sub-alternative 2c. Use 0.90(catch statistic x scalar) for stocks with low risk of overexploitation, 0.75(catch statistic x scalar) for stocks with moderate risk of overexploitation, and 0.50(catch statistic x scalar) for stocks with high risk of overexploitation.

Stock	Risk of Overexploitation	Scalar	Catch Statistic	ABC Risk Tolerance Sub-alt. c	SG Reg 13 ABC
Bar Jack	Low	2	34,583	62,250	24,780
Margate	Moderate	1.5	63,993	71,992	29,889
Red Hind	Moderate	1.5	27,570	31,016	24,867
Cubera Snapper	Moderate	1.5	52,721	59,311	24,680
Blue Runner	Moderate	1.5	1,328,272	1,494,306	1,125,729
Yellowedge Grouper	Moderate	1.5	46,330	52,121	30,221
Blueline Tilefish	Moderate	1.5	482,973	543,344	631,341
Silk Snapper	Moderate	1.5	75,269	84,678	25,104
White Grunt (South)	Moderate	1.5	735,873	827,858	674,033
Atlantic Spadefish	Moderate	1.5	677,065	761,698	189,460
Gray Snapper	Moderate	1.5	1,039,277	1,169,187	795,743
Lane Snapper	Moderate	1.5	169,572	190,769	119,984
Rock Hind	Mod High	1.25	42,849	26,781	37,953
Tomtate	Mod High	1.25	105,909	66,193	80,056
Hogfish	Mod High	1.25	211,595	132,247	134,824
White Grunt (North)	Mod High	1.25	735,873	459,921	674,033
Scamp	Mod High	1.25	596,879	373,049	509,788
Gray Triggerfish	Mod High	1.25	819,428	512,143	626,518

Sub-alternative 2d. Use 0.90(catch statistic x scalar) for stocks with low risk of overexploitation, 0.80(catch statistic x scalar) for stocks with moderate risk of overexploitation, and 0.70(catch statistic x scalar) stocks with high risk of overexploitation.

Stock	Risk of Overexploitation	Scalar	Catch Statistic	ABC Risk Tolerance Sub-alt. d	SG Reg 13 ABC
Bar Jack	Low	2	34,583	62,250	24,780
Margate	Moderate	1.5	63,993	76,792	29,889
Red Hind	Moderate	1.5	27,570	33,084	24,867
Cubera Snapper	Moderate	1.5	52,721	63,265	24,680
Blue Runner	Moderate	1.5	1,328,272	1,593,926	1,125,729
Yellowedge Grouper	Moderate	1.5	46,330	55,596	30,221
Blueline Tilefish	Moderate	1.5	482,973	579,567	631,341
Silk Snapper	Moderate	1.5	75,269	90,323	25,104
White Grunt (South)	Moderate	1.5	735,873	883,048	674,033
Atlantic Spadefish	Moderate	1.5	677,065	812,478	189,460
Gray Snapper	Moderate	1.5	1,039,277	1,247,133	795,743
Lane Snapper	Moderate	1.5	169,572	203,486	119,984
Rock Hind	Mod High	1.25	42,849	37,493	37,953
Tomtate	Mod High	1.25	105,909	92,670	80,056
Hogfish	Mod High	1.25	211,595	185,146	134,824
White Grunt (North)	Mod High	1.25	735,873	643,889	674,033
Scamp	Mod High	1.25	596,879	522,269	509,788
Gray Triggerfish	Mod High	1.25	819,428	717,000	626,518

COMMITTEE ACTION:

- Select a preferred sub-alternative for a risk tolerance level

SAFMC stocks in Level 5. The SSC does not recommend applying the ORCS approach to these stocks at this time due to concerns with the reliability of catch statistics as noted.

Variability	Landings or Data Collection issues	Species ID
Black Snapper	Black Snapper	Almaco Jack
	Blackfin Snapper	Lesser Amberjack
	Sand Tilefish	Sailor's Choice
	Mahogany	Banded Rudderfish
	Dog Snapper	Yellowmouth Grouper
	Misty Grouper	Scup
	Sailor's Choice	Saucereye Porgy
	Coney	Jolthead Porgy
	Graysby	Knobbed Porgy
	Saucereye Porgy	Whitebone Porgy
	Scup	
	Queen Snapper	
	Warsaw grouper	
	Speckled hind	

ABCs (in pounds whole weight) for stocks with no reliable catch data in Level 5 of the South Atlantic Council's SSC's ABC Control Rule

Species	ABC
Almaco Jack	302,517
Banded Rudderfish	145,434
Black Snapper	382
Blackfin Snapper	3,665
Coney	2,718
Dog Snapper	3,285
Graysby	17,597
Jolthead Porgy	37,885
Knobbed Porgy	67,441
Lesser Amberjack	9,270
Mahogany Snapper	548
Misty Grouper	2,863
Queen Snapper	9,466
Sailor's Choice	22,674
Sand Tilefish	7,983

Saucereye Porgy	3,606
Scup	9,306
Speckled hind	0 landings
Whitebone Porgy	25,024
Warsaw grouper	0 landings
Yellowmouth Grouper	4,040

COMMITTEE ACTION:

- Provide further guidance on the process the Council envisions to incorporate input from Advisory Panels (see motion in Background section)
- Provide guidance on timing for development considering that the ABCs/ACLs for species included in this amendment would all increase.
- Consider inclusion of other actions such as reconfiguration of snapper grouper complexes (i.e. Jacks Complex).

SOUTH ATLANTIC FISHERY MANAGMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

SSC ORCS WORKSHOP REPORT

August 1-3, 2012

Crowne Plaza
North Charleston, SC

PURPOSE

This workshop was convened to:

- Apply the ORCS approach to unassessed SAFMC stocks

CONTENTS

1. Introduction

1.1. Documents

Agenda

1.2. Action

Introductions
Review and Approve Agenda

The ORCS meeting was called to order at 3:00 pm, as scheduled. The agenda was adopted without change. Workshop participants (*see Section 3 below*) were introduced and their affiliations noted for the administrative record. The Chair reviewed the agenda and outlined meeting format and process.

2. Workshop Terms of Reference

The SSC ORCS sub-Committee developed Terms of Reference to guide the workshop.

1. Review and update the ORCS Table of Stock Attributes (Table 4 in the ORCS report) to better suit SAFMC-managed stocks.
2. Develop a scoring method for assigning stocks to exploitation categories (develop criteria for addressing missing values, weighting, range of scores for exploitation categories etc.). Consider developing a new exploitation category for 'special case' stocks or stocks with no reliable catch data. Assign stocks to exploitation categories.
3. Determine the appropriate catch statistic for OFL (e.g., mean, median, maximum, minimum, percentile, etc.). Identify the proper OFL scalar range to be applied to different exploitation categories.
4. Recommend a range of scalar values (to apply to OFL) that captures the Council's risk tolerance level for assigning ABC values for low risk (high productivity), moderate risk (moderate productivity), and high risk (low productivity) stocks.
5. Create a report to summarize and document work group findings.

3. Apply the ORCS Approach

3.1. Action

Address Workshop Terms of Reference

WORKSHOP MEETING SUMMARY:

To better address the Terms of Reference workshop participants were assigned to 3 breakout groups:

Life History and Ecology:
Jim Berkson (leader)
Eric Johnson (rapporteur)
Churchill Grimes
George Sedberry
Jeffrey Buckel
Luiz Barbieri
David Cupka (Chair, SAFMC)
John Jolley (member, SAFMC)

Fisheries Landings and Surveys:
Marcel Reichert (leader)
Chip Collier (rapporteur)
Carolyn Belcher
Yan Jiao
Doug Vaughan
Michelle Duval (member, SAFMC)

Fishery Characteristics:
Steve Cadrin (leader)
Anne Lange (rapporteur)
Sherry Larkin
Robert Johnson (Chair, Snapper-Grouper AP)
David Harter (Chair, Dolphin-Wahoo AP)
Bob Pelosi (Chair, Mackerel AP)
Ben Hartig (Vice Chair, SAFMC)
Charlie Philips (Member, SAFMC)

The first Term of Reference dealt with customizing the ORCS Table of Attributes to better suit SAFMC stocks. Points addressed by the 3 breakout groups and further discussed during plenary included:

- Levels for attributes reflect the risk of overfishing, not the exploitation level of the stock. Change 'Stock Status' heading to 'Risk of Over-Exploitation'. Also, sub-headings were changed to reflect above modification: Low, Medium, and High.
- It may be advisable to combine attribute 2 (managed refugia) with effectiveness of fishery regulations.

- Consensus was to keep attribute 4 (morphology), contrary to the Life History and Ecology group's suggestion, because this attribute reflects capture probability and therefore, as suggested by the Fishery Characteristics group, has information value.
- The 'Discard Mortality' attribute was modified to read discard mortality instead of discard mortality rate so that the attribute encompasses the mortality rate plus the magnitude of discards. Categories were modified to read Low, Medium, and High. , which could include some catchability issues (e.g. changes in technology).
- Habitat loss or alteration should stay as is. The time period applicable for this attribute should be based on the period of landings being considered.
- Concerning the effectiveness of regulations attribute, the working group felt that other ways should be developed to incorporate this attribute into the table since it affects several of the other criteria. The suggestion was made to modify this attribute to read 'Impacts of Regulations' in order to capture regulations that impact a species even though they were meant to regulate a different species.
- The working group felt that consideration should be given to modification of the fleet stability attribute to fleet productivity to capture some economic issues such as some catchability issues (e.g. changes in technology) as well as fishing efficiency. This attribute also needs to reflect changes in effort. Some of this information can be captured in the 'targeted fishery or bycatch' criteria.

According to the comments and suggestions discussed above the following table of attributes was produced:

Attribute	Risk of Overexploitation		
	Low (1)	**Moderate (2)**	**High (3)**
Overall fishery exploitation based on assessed stocks	All known stocks are either moderately or lightly exploited. No overfished stocks.	Most stocks are moderately exploited. No more than a few overfished stocks.	Many stocks are overfished.
Presence of natural or managed refugia	Less than 50% of habitat is accessible to fishing	50%-75% of habitat is accessible to fishing	>75% of habitat is accessible to fishing
Schooling, aggregation, or other behavior responses affecting capture	Low susceptibility to capture (specific behaviors depend on gear type)	Average susceptibility to capture (specific behaviors depend on gear type)	High susceptibility to capture (specific behaviors depend on gear type)
Morphological characteristics affecting capture	Low susceptibility to capture (specific characteristics depend on gear type)	Average susceptibility to capture (specific characteristics depend on gear type)	High susceptibility to capture (specific characteristics depend on gear type)
Discard mortality rate	Low	Medium	High
Bycatch or actively targeted by the fishery	No targeted fishery	Occasionally targeted, but occurs in a mix with other species in catches	Actively sought after
Natural mortality compared to dominant species in the fishery	Natural mortality higher or approximately equal to dominant species ($M \geq \overline{M}$)	Natural mortality higher or equal to dominant species ($M \approx \overline{M}$)	Natural mortality less than dominant species ($M < \overline{M}$)
Rarity	Sporadic occurrence in catch	Not uncommon, mostly pure catches are possible with targeting	Frequent occurrence in catch
Value or desirability	Low value, often not retained (<$1/lb)	Moderate value, usually retained ($1-$2.25/lb)	Very valuable or desirable (trophy fish or >$2.25/lb)
Trend in catches (use only when effort is stable)	Catch trend increasing or stable (assign score of 1.5)	Catches trend increasing or stable (assign score of 1.5)	Decreasing catches
Loss or alteration of habitat	No loss or alteration of habitat, or habitat is increasing	Habitat is being lost or altered and the rate is declining or staying constant	Habitat is being lost or altered and the rate is increasing
Fleet stability	Fleet/# of trips/effort decreasing	Fleet/# of trips/effort stable	Fleet/# of trips/effort increasing
Fishery Independent CPUE	Increasing in most recent years	stable in most recent years,	Decreasing in most recent years.
Effectiveness of regulations (other than ACLs) to limit exploitation	Most of the resource is protected from harvest (closed areas, size limits, seasons)	Considerable portions of the resource are protected	The resource is fully vulnerable to the fishery

In addressing Term of Reference #2 workshop participants came to the following consensus decisions:

- The ORCS table of attributes will be scored with equal weights.
- Missing values (i.e., unscored attributes) will be left as 'blanks' and not used in calculating the stock's final mean score.
- Stocks with no reliable catch data, i.e., 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, will be removed from this exercise and moved to a new ABC control rule Tier 5 (unassessed stocks that do not qualify as ORCS). The table below lists SAFMC stocks removed from this ORCS application exercise. Table headings indicate the reason for considering these stocks as not having reliable catch.

Variability	Landings or Data Collection issues	Species ID
Black Snapper	Black Snapper	Almaco Jack
	Blackfin Snapper	Lesser Amberjack
	Sand Tilefish	Sailor's Choice
	Mahogany	Banded Rudderfish
	Dog Snapper	Yellowmouth Grouper
	Misty Grouper	Scup
	Sailor's Choice	Saucereye Porgy
	Coney	Jolthead Porgy
	Graysby	Knobbed Porgy
	Saucereye Porgy	Whitebone Porgy
	Scup	
	Queen Snapper	
	Warsaw grouper	
	Speckled hind	

Application of the revised and upgraded ORCS table of attributes to remaining stocks (i.e., after the non-ORCS stocks were removed from the analysis) resulted in the assignment of all stocks to the 'Moderate' risk of exploitation category.

To refine the analysis and achieve better resolution in assigning stocks to risk of exploitation categories (i.e., to better differentiate between risk levels for different stocks) workshop participants reviewed individual criteria and attributes discussed by the 3 breakout groups (Life History and Ecology, Landings and Surveys, and Fishery Characteristics). Then, based on group consensus and expert judgment the group assigned each stock to a final risk of exploitation category. Results are summarized on the table below (Qualitative Categorization column).

Species	MEAN	Exploitation Category	Life History	Fishery Characteristics	Fishery Surveys and Trends	Qualitative Categorization
bar jack	1.50	Moderate	Moderate	Low	Low	Low
margate	1.65	Moderate	Moderate	Low	Moderate	Moderate
rock hind	1.65	Moderate	Moderate	Low	Moderate	Mod High
red hind	1.73	Moderate	Moderate	Low	Moderate	Moderate
cubera snapper	1.79	Moderate	Moderate	Moderate	Low	Moderate
wahoo	1.80	Moderate	Low	Moderate	Moderate	Moderate
tomtate	1.83	Moderate	Low	Moderate	High	Mod High
blue runner	1.88	Moderate	Moderate	Moderate	Moderate	Moderate
yellowedge grouper	2.05	Moderate	Moderate	Moderate	Moderate	Moderate
hogfish	2.03	Moderate	High*	Moderate	Moderate	Mod High
blueline tilefish	1.94	Moderate	Moderate	Moderate	High	Moderate
silk snapper	2.00	Moderate	Moderate	Moderate	Moderate	Moderate
white grunt north			Moderate	Moderate	High	Mod High
white grunt south	2.08	Moderate	Moderate	Moderate	High	Moderate
atlantic spadefish	2.09	Moderate	Moderate	Moderate	Moderate	Moderate
gray snapper	2.10	Moderate	High	Moderate	Moderate	Moderate
dolphin	2.10	Moderate	Low*	High	Moderate	Mod Low
lane snapper	2.06	Moderate	High	Moderate	Low	Moderate
scamp	2.16	Moderate	Moderate	Moderate	Moderate	Mod High
gray triggerfish	2.25	Moderate	Moderate	Moderate (High)	Moderate (High)	Mod High

Unfortunately, we ran out of time and were not able to address Terms of Reference 3-5 at this workshop. The workgroup recommended meeting again in the spring of 2013 to complete application of the ORCS approach and finalize the report.

The group discussed the fact that several of the stocks included in this analysis (e.g., gray snapper, dolphin, white grunt) should have enough data to have stock assessments based on more traditional quantitative assessment methods—i.e., based on the data available they likely fall under higher tiers of our ABC control rule (the ORCS approach is tier 4). The SSC will discuss this issue in more detail at its October meeting.

Workshop adjourned.

SOUTH ATLANTIC FISHERY MANAGMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

SSC ORCS WORKSHOP

August 1-3, 2012

SSC ORCS WORKSHOP II
April 8-9, 2013

Crowne Plaza
North Charleston, SC

PURPOSE

This workshop is convened to:

- Complete application of the ORCS approach to unassessed SAFMC stocks

CONTENTS

1. Introduction

1.1. Documents

Agenda
ORCS Workshop I Final Report

1.2. Action

Introductions
Review and Approve Agenda

The ORCS meeting was called to order at 1:00 pm, as scheduled. The agenda was adopted without change. Workshop participants were introduced and their affiliations noted for the administrative record. The Chair reviewed the agenda and outlined meeting format and process.

2. Workshop Terms of Reference

The SSC ORCS sub-Committee developed Terms of Reference to guide the workshop.

1. Review and update the ORCS Table of Stock Attributes (Table 4 in the ORCS report) to better suit SAFMC-managed stocks.
2. Develop a scoring method for assigning stocks to exploitation categories (develop criteria for addressing missing values, weighting, range of scores for exploitation categories etc.). Consider developing a new exploitation category for 'special case' stocks or stocks with no reliable catch data. Assign stocks to exploitation categories.
3. Determine the appropriate catch statistic for OFL (e.g., mean, median, maximum, minimum, percentile, etc.). Identify the proper OFL scalar range to be applied to different exploitation categories.
4. Recommend a range of scalar values (to apply to OFL) that captures the Council's risk tolerance level for assigning ABC values for low risk (high productivity), moderate risk (moderate productivity), and high risk (low productivity) stocks.
5. Create a report to summarize and document workgroup findings.

3. Apply the ORCS Approach

3.1. Documents

Attachment 1. April 2012 SSC Report
Attachment 2. ORCS Report
Attachment 3. ABC Control Rule
Attachment 4. ABC Recommendations
Attachment 5. SSC ORCS Group Summary
Attachment 6. Preliminary ORCS Application
Attachment 7. Preliminary ORCS Application Details
Attachment 8. MRAG PSA results
Attachment 9. NMFS PSA results
Attachment 10. MRAG PSA Gulf Results
Attachment 11. ORCS Application Workshop Draft
Attachment 12. ORCS Application Workshop Draft worksheet
Attachment 13. Preliminary evaluation of effort trends

3.2. Overview

The objective of the second workshop was to address Terms of Reference 3 and 4, which were not considered during the first workshop. Since there have been no changes in the ORCS method since the first workshop, and the intent of the workshop is to continue the work started previously we ask readers to refer to the ORCS workshop 1 report for details and full documentation on how Terms of Reference 1 and 2 were addressed.

4. WORKSHOP MEETING SUMMARY:

The workgroup reviewed progress and results from the first workshop and proceeded to address the remaining Terms of Reference:

3. ***Determine the appropriate catch statistic for OFL (e.g., mean, median, maximum, minimum, percentile, etc.). Identify the proper OFL scalar range to be applied to different exploitation categories.***

The group had an extensive discussion regarding the difficulties associated with choosing a catch statistic that would be appropriate for the full suite of stocks being considered for application of the ORCS method. Initial suggestions focused on using the median landings over a set time period. However, after further inspection the median was considered inadequate to represent the high fluctuation in landings—i.e., to appropriately capture the range of occasional high landings—and the group reached consensus on using the maximum catch over the period 1999-2007. The time period was chosen to (1) be consistent with the period of landings used in the Council's Comprehensive ACL Amendment, and (2) to minimize the impact of recent regulations and the economic down turn on the landings time series.

A few special case stocks had different landings time periods used for the catch statistic. Please refer to the table below for the time periods used for these stocks and to the April 2010 SSC meeting report for a description of the rationale used to choose the time periods.

Stock	Landings Period
Wahoo	1994-2003
Dolphin	1994-1997

The group also had extensive discussion regarding selection of a scalar to be associated with the catch statistic. Scalars should help capture the range of variability in landings so managers do not take action on random landings fluctuations or measurement error by interpreting them as overexploitation.

After much debate the group reached consensus on a scalar scheme consistent with the Risk of Overexploitation categories assigned to stocks in the first ORCS workshop:

Risk of Overexploitation	Scalar Value
Low	2
Moderate Low	1.75
Moderate	1.5
Moderate High	1.25

<u>Important Note</u>: given characteristics specific to South Atlantic stocks the group agreed that the "catch statistic × scalar" metric developed in this stage of the process may not represent a reliable proxy for OFL and, therefore, would not be called OFL or used as such.

The resulting values of "catch statistic × scalar" metric for the South Atlantic stocks in question can be found in the table below:

				Scalar X Catch Stats			
Stock	Risk of OverExpl.	Max. Catch		2	1.75	1.5	1.25
Bar Jack	Low	2.303442733		4.61			
Dolphin	Mod Low	1.54699779			2.71		
Margate	Moderate	2.731488304				4.1	
Red Hind	Moderate	1.131450531				1.7	
Cubera Snapper	Moderate	1.440948167				2.16	
Wahoo	Moderate	1.993493971				2.99	
Blue runner	Moderate	1.807000846				2.71	
Yellowedge Grouper	Moderate	1.648473237				2.47	
Blueline tilefish	Moderate	1.908467571				2.86	
Silk snapper	Moderate	2.124247472				3.19	
White Grunt (South)	Moderate	0.990796505				1.49	
Atlantic Spadefish	Moderate	2.743772279				4.12	
Gray snapper	Moderate	1.525352698				2.29	
Lane snapper	Moderate	1.460420169				2.19	
Rock Hind	Mod High	2.377527761					2.97
Tomtate	Mod HIgh	1.334877919					1.67
Hogfish	Mod HIgh	1.340823933					1.68
White Grunt (North)	Mod HIgh	0.990796505					1.24
Scamp	Mod High	1.332317715					1.67
Gray triggerfish	Mod HIgh	1.325207325					1.66

4. Recommend a range of scalar values (to apply to OFL) that captures the Council's risk tolerance level for assigning ABC values for low risk (high productivity), moderate risk (moderate productivity), and high risk (low productivity) stocks.

The next step in the process involves obtaining ABC values for each stock by multiplying the "catch statistic × scalar" metric (*here not being called OFL*) by a range of scalar values that reflects the SAFMC's risk tolerance level. After much discussion and input from the Council members participating in the workshop the group consensus was to follow the risk level described by Alternative A in the table below:

Risk level	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**
Low risk (high productivity)	0.75 x OFL	0.75 x OFL	0.90 x OFL	0.90 x OFL
Moderate risk (moderate productivity)	0.75 x OFL	0.75 x OFL	0.75 x OFL	0.80 x OFL
High risk (low productivity)	0.75 x OFL	0.50 x OFL	0.50 x OFL	0.70 x OFL

The resulting interim ABC values obtained (i.e., catch statistic × scalar × 0.75) for each stock can be found in the table below:

Stock	Risk of OverExpl.	ORCS ABC
Bar Jack	Low	3.4552
Dolphin	Mod Low	2.0304
Margate	Moderate	3.0729
Red Hind	Moderate	1.2729
Cubera Snapper	Moderate	1.6211
Wahoo	Moderate	2.2427
Blue runner	Moderate	2.0329
Yellowedge Grouper	Moderate	1.8545
Blueline tilefish	Moderate	2.1470
Silk snapper	Moderate	2.3898
White Grunt (South)	Moderate	1.1146
Atlantic Spadefish	Moderate	3.0867
Gray snapper	Moderate	1.7160
Lane snapper	Moderate	1.6430
Rock Hind	Mod High	2.2289
Tomtate	Mod HIgh	1.2514
Hogfish	Mod HIgh	1.2570
White Grunt (North)	Mod HIgh	0.9289
Scamp	Mod High	1.2490
Gray triggerfish	Mod HIgh	1.2424

However, the group also recognized that further input from the full Council would be necessary before a final decision on ABC scalar values could be obtained. The group proposes the Alternative A risk tolerance scheme as a starting value but suggests that the Council evaluate this issue in more detail at its June meeting and provide further guidance to the SSC on the risk tolerance level to be adopted.

Workshop adjourned.