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

Update to the ABC Control Rule, ABC, ACL Adjustments to Select Unassessed Species, and Management Measures for Gray Triggerfish

Environmental Assessment **Regulatory Impact Review** **Regulatory Flexibility Act Analysis**

October 14, 2014

Definitions, Abbreviations, and Acronyms Used in the Document

ABC	acceptable biological catch
ACL	annual catch limits
AM	accountability measures
ACT	annual catch target
B	a measure of stock biomass in either weight or other appropriate unit
$\mathbf{B_{MSY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
$\mathbf{B_{OY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
$\mathbf{B_{CURR}}$	the current stock biomass
CPUE	catch per unit effort
DEIS	draft environmental impact statement
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
F	a measure of the instantaneous rate of fishing mortality
$\mathbf{F_{30\%SPR}}$	fishing mortality that will produce a static SPR = 30%
$\mathbf{F_{CURR}}$	the current instantaneous rate of fishing mortality
$\mathbf{F_{MSY}}$	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
$\mathbf{F_{OY}}$	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B_{OY}
FEIS	final environmental impact statement
FMP	fishery management plan
FMU	fishery management unit
IRFA	initial regulatory flexibility act analysis
M	natural mortality rate
MARMAP	Marine Resources Monitoring Assessment and Prediction Program
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistics Survey
MRIP	Marine Recreational Information Program
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OY	optimum yield
RFA	Regulatory Flexibility Act
RIR	regulatory impact review
SAFMC	South Atlantic Fishery Management Council
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SIA	social impact assessment

SPR spawning potential ratio

SSC Scientific and Statistical Committee

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

Documents:	Amendment 29 Environmental Assessment Regulatory Impact Review Regulatory Flexibility Act Analysis
Proposed actions:	This amendment proposes: updating the acceptable biological catch (ABC) control rule, adjusting ABCs for unassessed snapper grouper species based on the revised ABC control rule, revising annual catch limits for select species, and modifying management measures for gray triggerfish.
Lead agency:	Amendment 29 – South Atlantic Fishery Management Council EA/RIR/FIS – National Marine Fisheries Service (NMFS)
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Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

Summary

What Action Is Being Proposed?

Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 29) proposes to: (1) update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Stocks" (ORCS); (2) adjust ABCs for select unassessed species; (3) adjust ACLs based on revised ABCs; and (4) revise management measures for gray triggerfish in federal waters of the South Atlantic region.

Why are the South Atlantic Council and National Marine Fisheries Service Considering Action?

Changes to the Acceptable Biological Catch (ABC) Control Rule

The Scientific and Statistical Committee (SSC) has recommended revising the South Atlantic Council's ABC control rule to incorporate the revised methodology for 14 fishery stocks in the Snapper Grouper fishery management unit without assessments for which there are reliable catch data. An initial methodology for estimating the ABC for such stocks was developed at the time the South Atlantic Council approved its ABC control rule through the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c). Hence, the South Atlantic Council has chosen to take action to incorporate the revisions that the SSC has recommended.

What is the "ORCS" Approach?

Based on the methodology in *Calculating Acceptable Biological Catch for Stocks That Have Reliable Catch Data Only (Only Reliable Catch Stocks – ORCS)* (Berkson et al. 2011), the South Atlantic Council's SSC recommended an approach to calculate the ABC for unassessed stocks for which there is only reliable catch information. The approach involves selection of a "catch statistic", a scalar (number) to denote the risk of overexploitation for the stock, and a scalar to denote the management risk level. The SSC provided the first two criteria for each stock, and the South Atlantic Council specified their risk tolerance level for each stock.

Catch Statistic: The median was considered inadequate to represent the high fluctuation in landings (i.e., the median failed to appropriately capture the range of occasional high landings). Instead, the maximum catch over the period 1999-2007 was chosen. This 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 downturn 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 H** 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 SSC agreed that the "catch statistic × scalar" metric developed in this stage of the process may not represent a reliable proxy for the overfishing limit (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 South Atlantic Council's risk tolerance level. For instance, the South Atlantic Council may choose to be more risk-averse in computing the ABC for a stock that exhibits a moderately high risk of overexploitation. As such, the South Atlantic Council may use a scalar of 0.50 for such stocks to specify a more conservative ABC. On the other hand, stocks with low risk of overexploitation and thereby able to tolerate a higher level of management risk, may be assigned a less conservative scalar, such as 0.90.

Application of the updated ABC control rule to select unassessed snapper grouper stocks

To apply the "ORCS" methodology to the target stocks, the South Atlantic Council must first decide on a numerical factor that determines the risk tolerance level. That is, the South Atlantic Council must decide the level of risk they are willing to allow in establishing the ABC for unassessed stocks that only have reliable catch information. Various levels of risk tolerance are considered in **Action 2** that allow the South Atlantic Council to be more or less risk averse depending on whether a stock is deemed to be at a low, moderate, or moderately high risk of overexploitation. The latter classification was determined by the SSC based on an extensive set of criteria (see **Appendix H**).

Management Measures for Gray Triggerfish

A stock assessment for the South Atlantic stock of gray triggerfish was initiated in 2013 (SEDAR 32 2013). Unfortunately, significant discrepancies in ageing led the analysts to postpone completion of the assessment to 2015. Meanwhile, fishermen have approached the South Atlantic Council with requests for management measures due concerns about early closures in the commercial sector and stock status of gray triggerfish. While the South Atlantic Council had intended to wait until after the results of the stock assessment were available to make changes to management measures for this stock, the unforeseen delays in the assessment prompted the South Atlantic Council to be proactive and consider the management measures that fishermen are suggesting at this time.

Purpose & Need for Actions

The purpose of Amendment 29 is to: update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule based on recommendations from the Scientific and Statistical Committee; adjust ABCs for the affected species; revise annual catch limits (ACLs) for select species; and revise management measures for gray triggerfish in federal waters of the South Atlantic region.

The need for Amendment 29 is to: specify ABCs, ACLs, and ACTs for snapper grouper species based on the best available scientific information, diminish and/or prevent derby conditions, and ensure that overfishing does not occur pending a new assessment of the gray triggerfish stock in the South Atlantic region.

Action 1. Update the South Atlantic Council's Acceptable Biological Catch (ABC) Control Rule

Alternative 1 (No Action). 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.

Table S-1. ABC control rule currently in place. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

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.

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.

Preferred 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 and the existing Level 4 will be renumbered as Level 5.

Table S-2. ABC control rule proposed under Preferred Alternative 2. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

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 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 – 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 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.	

The ABC control rule identified in **Alternative 1 (No Action)** was developed by the South Atlantic Council's SSC, approved by the South Atlantic Council, and implemented through the Comprehensive ACL Amendment (SAFMC 2011c). **Preferred Alternative 2** represents updates to the ABC control rule developed by the South Atlantic Council's SSC. The SSC has provided no other options or modifications to the ABC control rule for South Atlantic Council consideration. Therefore, the South Atlantic Council and National Marine Fisheries Service determined it is not reasonable to include additional alternatives for modifications to the ABC control rule.

Summary of Effects

Biological

Updating the ABC control rule as proposed in **Preferred Alternative 2** would not have any direct biological effects. This change would; however, have minor indirect effects on the biological environment since an approved scientific methodology would be adopted to establish ABCs and ACLs for snapper grouper species that have not been assessed but for which there are reliable catch statistics (**Actions 2** and **3**).

Economic

Action 1 is an administrative action and has no direct beneficial or adverse economic impacts. **Alternative 1 (No Action)** would retain the current control rule to specify ABCs for snapper grouper species, while **Preferred Alternative 2** would change the ABC control rule used to determine ABCs for the species without assessments for which there are reliable catch data. **Preferred Alternative 2** would allow for subsequent actions (**Actions 2** and **3**) that could have beneficial and/or adverse economic impacts beyond the status quo.

Social

Setting of the biological parameters for harvest thresholds have mostly minor indirect social effects from the implementation of the ABC and any subsequent reduction through other actions to set ACLs, annual catch targets (ACTs), and accountability measures (AMs). Because the ABC control rule already exists under **Alternative 1 (No Action)**, there would be no difference in direct social effects between **Alternative 1 (No Action)** and the proposed change in the ABC control rule under **Preferred Alternative 2**, because the alternatives would not modify the ACLs, ACTs, and AMs that are currently in place.

Administrative

The mechanism for specifying ABCs and ACLs for data poor species addressed by this amendment was put in place with implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and constitutes **Alternative 1** (**No Action**). Therefore, the administrative impacts of **Preferred Alternative 2** would be minimal, and not different from **Alternative 1** (**No Action**). Administrative burdens may result from revising the ABC and ACL values under the preferred alternatives of **Actions 2** and **3**. These administrative activities would take the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

Action 2. Apply the revised ABC Control Rule to select unassessed snapper grouper species

Alternative 1 (No Action). ABCs for select unassessed snapper grouper species are based on the current ABC Control Rule.

Preferred Alternative 2. Assign a risk tolerance scalar to stocks deemed by the SSC to be under low risk of overexploitation (scalar = 2):

Sub-alternative 2a. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.75	51,875	24,780	+27,095

Preferred Sub-alternative 2b. Apply a risk tolerance scalar of 0.90.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.90	62,249	24,780	+37,469

Preferred Alternative 3. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderate risk of overexploitation (scalar = 1.5):

Sub-alternative 3a. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.75	71,992	29,889	+42,103
Red Hind	27,570	1.5	0.75	31,016	24,867	+6,149
Cubera Snapper	52,721	1.5	0.75	59,311	24,680	+34,631
Yellowedge Grouper	46,330	1.5	0.75	52,121	30,221	+21,900
Silk Snapper	75,269	1.5	0.75	84,678	25,104	+59,574
Atlantic Spadefish	677,065	1.5	0.75	761,698	189,460	+572,238
Gray Snapper	1,039,277	1.5	0.75	1,169,187	795,743	+373,444
Lane Snapper	169,572	1.5	0.75	190,769	119,984	+70,785

Preferred Sub-alternative 3b. Apply a risk tolerance scalar of 0.80

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.80	76,792	29,889	+46,903
Red Hind	27,570	1.5	0.80	33,084	24,867	+8,217
Cubera Snapper	52,721	1.5	0.80	63,265	24,680	+38,585

Yellowedge Grouper	46,330	1.5	0.80	55,596	30,221	+25,375
Silk Snapper	75,269	1.5	0.80	90,323	25,104	+65,219
Atlantic Spadefish	677,065	1.5	0.80	812,478	189,460	+623,018
Gray Snapper	1,039,277	1.5	0.80	1,247,132	795,743	+451,389
Lane Snapper	169,572	1.5	0.80	203,486	119,984	+83,502

Preferred Alternative 4. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderately high risk of overexploitation (scalar = 1.25):

Sub-alternative 4a. Apply a risk tolerance scalar of 0.70.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.70	522,269	509,788	+12,481
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

Sub-alternative 4b. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference of ABC
Rock Hind	42,849	1.25	0.75	40,171	37,953	+2,218
Tomtate	105,909	1.25	0.75	99,290	80,056	+19,234
White Grunt	735,873	1.25	0.75	689,881	674,033	+15,848
Scamp	596,879	1.25	0.75	559,574	509,788	+49,786
Gray Triggerfish	819,428	1.25	0.75	768,214	626,518	+141,696

Sub-alternative 4c. Apply a risk tolerance scalar of 0.50.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.50	26,781	37,953	-11,172
Tomtate	105,909	1.25	0.50	66,193	80,056	-13,863
White Grunt	735,873	1.25	0.50	459,921	674,033	-214,112
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.50	512,143	626,518	-114,375

Preferred Sub-alternative 4d. Apply a risk tolerance scalar of 0.70 for rock hind, tomtate, white grunt and gray triggerfish and 0.50 for scamp.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

Summary of Effects

Biological

All of the sub-alternatives under this action were developed by the South Atlantic Council's SSC using the "ORCS" approach and would not directly lead to overfishing or result in negative biological impacts to stocks. Alternatives to revise the ACLs are considered in **Action 3** and are based upon the ABC alternatives in **Action 2**. There is uncertainty associated with the risk of overexploitation scalar (determined by the SSC) and the risk tolerance scalar (which would be selected by the South Atlantic Council under this action). If the South Atlantic Council selects the risk tolerance scalar to achieve the most conservative values of ABC, any biological impacts associated with harvest levels (considered in **Action 3**) would be minimized. However, while conservative ABCs may provide the greatest biological benefit to the species, higher ABCs would not be expected to negatively impact the stock as long as harvest is maintained at sustainable levels and overfishing does not occur.

Economic

Action 2 is an administrative action and would not have a direct economic impact. However, **Alternatives 2 – 4** would change the ABCs for the 14 species, which would allow for subsequent action (**Action 3**) that could affect annual landings and net economic benefits from those landings. **Alternative 2** would assign the highest scalar value, **Alternative 3** the second highest, and **Alternative 4** the lowest. The higher the scalar value, the higher the ABC, and, potentially, the greater the increase of the ACL, annual landings, and economic benefits that derive from those landings.

Preferred Sub-Alternative 2b would yield a higher ABC for bar jack than **Sub-Alternative 2a**. **Preferred Sub-Alternative 3b** would yield higher ABCs for eight snapper grouper species than **Sub-Alternative 3a**. **Preferred Sub-Alternative 4d** would yield higher ABCs for five species than **Sub-Alternative 4c**, but lower ABCs than **Sub-Alternative 4b** and **4a.**

Social

Because the ACLs (commercial or recreational) for most of the species have not recently been met or exceeded, the increases in the ABC under **Sub-alternatives 2a, Preferred 2b, 3a, Preferred 3b, 4a,** and

4b are not expected to indirectly affect commercial and recreational fishermen harvesting these species. The lower ABCs expected under **Sub-alternative 4c** and **Preferred Sub-alternative 4d** could indirectly impact fishing for some of the snapper grouper species/complexes if harvest were to increase in the future. The decreased ACL for white grunt under **Preferred Sub-alternative 4d** could limit fishing opportunities for this species, particularly for recreational anglers in south Florida and the Florida Keys, where the species is a popular, easy-to-target recreational species. However, there would be a net increase in the ABC for the Grunts Complex, which could reduce that adverse impact.

Administrative

The mechanism for determining ABCs through application of the ABC control rule was put in place with implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and constitutes **Alternative 1** (**No Action**) under **Action 2**. Amendment 29 proposes applying the revised ABC control rule to establish harvest parameters in **Action 3**. However, **Action 2** would not adjust the harvest parameters and is an administrative action. Therefore, the administrative impacts of **Alternative 2, Alternative 3, Alternative 4,** and associated sub-alternatives would be minimal, and not differ much when compared with **Alternative 1** (**No Action**). If the South Atlantic Council selects the risk tolerance scalar to achieve the most conservative values of ABC, harvest levels would decrease for many species or species groups (**Action 3**), and it would be more likely that AMs would be triggered and action would be needed to ensure overfishing did not occur. This would lead to greater administrative impacts. Alternatives that result in higher ABCs and subsequently higher ACLs (in **Action 3**) could slightly reduce administrative burdens because the likelihood of triggering AMs would be reduced. Administrative burdens also may result from revising the values under **Alternative 2, Alternative 3, Alternative 4,** and associated sub-alternatives would take the form of development and dissemination of outreach and education materials for fishery participants and law enforcement.

Action 3. Establish ACLs for select unassessed snapper grouper species

Alternative 1 (No Action). ACL = OY = Current ABC

Alternative 2. ACL=OY=Proposed ABC
- **Preferred Sub-Alternative 2a.** Snappers Complex[a]
- **Preferred Sub-Alternative 2b.** Grunts Complex[b]
- **Preferred Sub-Alternative 2c.** Shallow Water Grouper Complex[c]
- **Preferred Sub-Alternative 2d.** Bar Jack
- **Preferred Sub-Alternative 2e.** Atlantic Spadefish
- **Sub-Alternative 2f.** Scamp
- **Preferred Sub-Alternative 2g.** Gray Triggerfish

Alternative 3. ACL=OY=0.95*Proposed ABC
- **Sub-Alternative 3a.** Snappers Complex[a]
- **Sub-Alternative 3b.** Grunts Complex[b]
- **Sub-Alternative 3c.** Shallow Water Grouper Complex[c]
- **Sub-Alternative 3d.** Bar Jack
- **Sub-Alternative 3e.** Atlantic Spadefish
- **Sub-Alternative 3f.** Scamp
- **Sub-Alternative 3g.** Gray Triggerfish

Alternative 4. ACL=OY=0.90*Proposed ABC
- **Sub-Alternative 4a.** Snappers Complex[a]
- **Sub-Alternative 4b.** Grunts Complex[b]
- **Sub-Alternative 4c.** Shallow Water Grouper Complex[c]
- **Sub-Alternative 4d.** Bar Jack
- **Sub-Alternative 4e.** Atlantic Spadefish
- **Preferred Sub-Alternative 4f.** Scamp
- **Sub-Alternative 4g.** Gray Triggerfish

Alternative 5. ACL=OY=0.80*Proposed ABC
- **Sub-Alternative 5a.** Snappers Complex[a]
- **Sub-Alternative 5b.** Grunts Complex[b]
- **Sub-Alternative 5c.** Shallow Water Grouper Complex[c]
- **Sub-Alternative 5d.** Bar Jack
- **Sub-Alternative 5e.** Atlantic Spadefish
- **Sub-Alternative 5f.** Scamp
- **Sub-Alternative 5g.** Gray Triggerfish

(a) Snappers: **Gray snapper, lane snapper, cubera snapper**, dog snapper, mahogany snapper
(b) Grunts: **White grunt, margate**, sailor's choice, **tomtate**
(c) Shallow Water Grouper: **Red hind, rock hind**, coney, graysby, yellowfin grouper, yellowmouth grouper

Table S-3 describes proposed ACLs based on the preferred alternatives (**Preferred Alternative 2, Preferred Sub-alternative 2b, Preferred Alternative 3, Preferred Sub-alternative 3b, Preferred Alternative 4, Preferred Sub-alternative 4d**) in **Action 2** and alternatives in **Action 3**. Highlighted cells represent the alternatives selected as preferred in **Action 3**.

Table S-3. Proposed commercial and recreational ACLs and recreational ACTs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells indicate South Atlantic Council's preferred ACL change.

Species or Complex	**Action 3, Alternative 1**			**Action 3, Alternative 2 ACL = OY= ABC**			**Action 3, Alternative 3 ACL = OY = 95%ABC**			**Action 3, Alternative 4 ACL = OY = 90%ABC**			**Action 3, Alternative 5 ACL = OY = 80%ABC**		
	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT
Snappers Complex (a)	215,662	728,577	624,197	344,884	1,172,832	984,898	327,640	1,114,191	935,653	310,395	1,055,549	886,408	275,907	938,266	787,918
Grunts Complex (b)	218,539	588,113	442,970	217,903	618,122	455,962	794,224	207,008	433,164	752,423	196,113	410,366	174,322	494,498	364,770
SWG Complex (c)	49,776	46,656	23,595	55,542	48,648	20,542	98,981	52,764	19,515	93,771	49,987	18,488	44,434	38,918	16,434
Bar Jack	5,265	19,515	9,758	13,228	49,021	11,912	12,567	46,570	11,912	11,905	44,119	11,317	10,582	39,217	9,530
Atlantic Spadefish	35,108	154,352	96,470	150,552	661,926	413,704	143,025	628,830	393,018	135,497	595,733	372,333	120,442	529,541	330,963
Scamp	333,100	176,688	94,316	243,750	129,299	69,020	231,563	122,834	65,569	219,375	116,369	62,118	195,000	103,439	55,216
Gray Triggerfish	272,880	353,638	284,325	312,325	404,675	325,359	296,709	384,441	309,091	281,093	364,207	292,823	249,860	323,740	260,287

(a) Snappers: **Gray snapper, lane snapper, cubera snapper**, dog snapper, mahogany snapper
(b) Grunts: **White grunt, margate**, sailor's choice, **tomtate**
(c) Shallow Water Grouper: **Red hind, rock hind**, coney, graysby, yellowfin grouper, yellowmouth grouper

Summary of Effects

Biological

Creating a buffer between the ACL/OY and ABC would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above the spawning stock biomass at MSY (SSB_{MSY}). However, the South Atlantic Council's ABC control rule takes into account scientific uncertainty. The National Standard 1 guidelines indicate ACL may typically be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. None of the alternatives of **Action 3** would affect the ACL of the Deepwater Complex or status quo net economic benefits that derive from landings of the Deepwater Complex. **Alternatives 3-5** would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL/OY and ABC, with **Alternative 5** setting the most conservative ACL at 80% of the ABC (see **Table S-3**).

Alternatives under **Action 3** would increase the ACL for some species or species complexes or decrease the ACL for species or species complexes. For most species and species complexes, annual landings are not reaching the ACLs. If harvest were less than the proposed ACLs, biological effects would be expected to be minimal.

Economic

Alternative 1 (**No Action**) would not change the ACLs for any snapper grouper species or complexes, whereas **Alternatives 2-5** would change the ACLs for three species complexes and four species. None of the alternatives of **Action 3** would affect the ACL of the Deepwater Complex or status quo net economic benefits that derive from landings of the Deepwater Complex.

Among the action alternatives, **Alternative 2** would allow for the largest increases in the ACLs, followed in turn by **Alternatives 3**, **4,** and **5**. **Preferred Alternatives 2a-2e** and **2g** would generate the largest increases in the total ACLs for Atlantic spadefish, bar jack, gray triggerfish, Grunts Complex, Shallow Water Grouper Complex, and Snappers Complexes. **Alternative 5f** would generate the largest decrease in the total ACL for scamp, followed in turn by **Preferred Alternative 4f**, **Alternative 3f**, **Alternative 2f,** and **Alternative 1 (No Action).** These changes represent potential changes in net economic benefits that derive from landings of the three complexes and four species. Actual economic impacts are dependent on baseline landings relative to the current and revised ACLs.

Table S-4. Comparison of baseline commercial landings and alternative commercial ACLs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells represent where commercial ACL for gray triggerfish would be less than its baseline landings.

Species or Complex	Commercial ACL (lbs ww)					Baseline landings (lbs ww)
	1	2	3	4	5	
Atlantic Spadefish (a)	35,108	150,552	143,025	135,497	120,442	2,747 - 15,284
Bar Jack (d)	5,265	13,228	12,567	11,905	10,582	5,161 - 6,694
Gray Triggerfish (g)	272,880	312,325	296,709	281,093	249,860	295,858 - 307,606
Grunts (b)	218,539	217,903	207,008	196,113	174,322	91,310 - 100,785
Scamp (f)	333,100	243,750	231,563	219,375	195,000	153,253 - 193,412
Shallow Water Grouper (c)	49,776	55,542	52,765	50,823	46,105	18,615 - 35,424
Snappers (e)	215,662	344,884	327,640	310,549	275,907	78,101 - 129,303

As shown in **Table S-4**, none of the alternatives are expected to change annual commercial landings of Atlantic spadefish, Grunts Complex, scamp, Shallow Water Grouper Complex, or Snappers Complex because baseline landings are less than the current and alternative commercial ACLs. **Preferred Sub-Alternative 2g** yield the biggest increase in annual commercial landings of gray triggerfish and associated economic net benefits, followed in turn by **Alternatives 3g** and **4g.** **Alternative 5** would reduce annual commercial landings and associated economic benefits from gray triggerfish. **Preferred Sub-Alternative 2d** and **Sub-Alternatives 3d**, **4d**, and **5d** would generate the same increase in commercial landings of and associated economic benefits from bar jack.

A comparison of baseline recreational landings and the alternative recreational ACLs shows none of the alternatives of **Action 3** would produce a change in annual recreational landings of Atlantic spadefish, bar jack, Grunts Complex, scamp, Shallow Water Grouper Complex, or Snappers Complex (**Table S-5**). **Preferred Sub-Alternative 2g** and **Alternative 3g** would yield the same increases in recreational landings of and associated economic benefits from gray triggerfish. **Sub-alternatives 4g** and **5g** would reduce annual recreational landings of and associated economic benefits from gray triggerfish, with **Sub-alternative 5g** having the largest adverse impact.

Table S-5. Comparison of baseline recreational landings and recreational ACLs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells represent where recreational ACL would be less than baseline landings.

Species or Complex	Recreational ACL (lbs ww)					Baseline landings (lbs ww)
	1	2	3	4	5	
Atlantic Spadefish (a)	154,352	661,926	628,830	595,733	529,541	120,492
Bar Jack (d)	19,515	49,021	46,570	44,119	39,217	2,384
Gray Triggerfish (g)	353,638	404,675	384,441	364,207	323,740	378,725
Grunts (b)	588,113	618,122	588,350	558,577	499,032	383,850
Scamp (f)	176,688	129,299	122,834	116,369	103,439	62,130
Shallow Water Grouper (c)	46,656	48,648	47,478	46,309	43,969	23,256
Snappers (e)	728,577	1,172,832	1,114,190	1,055,549	938,766	616,216

Social

Preferred Alternative 2 would potentially be the most beneficial to fishermen and communities by setting the ACL at the highest level allowed by the ABC specified in **Action 2**, and **Alternative 5** would potentially be the least beneficial. However, actual benefits depend on current landings. Moreover, because the ABCs set in **Action 2** are based on the "ORCS" methodology for stocks with limited available data, a buffer as proposed in **Alternatives 3-5**, could be more beneficial to resource users in the long term, if future data indicate the ABCs should be lower.

Administrative

Alternatives that result in higher ACLs for species or species complexes could slightly reduce administrative burdens because the likelihood of triggering accountability measures (AMs) would be reduced. Conversely, alternatives that decrease ACLs could increase the administrative burden because it would be more likely that AMs would be triggered and action would be needed to ensure overfishing did not occur. Administrative burdens also may result from revising the values under the alternatives in the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

Action 4. Modify the minimum size limit for gray triggerfish

Alternative 1 (No Action). The minimum size limit is 12 inches total length (TL) in federal waters off the east coast of Florida and 12 inches fork length (FL) in state waters off the east coast of Florida.

Alternative 2. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off the east coast of Florida.

Sub-alternative 2a. The minimum size limit applies to the commercial sector.
Sub-alternative 2b. The minimum size limit applies to the recreational sector.

Preferred Alternative 3. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off North Carolina, South Carolina, and Georgia.

Preferred Sub-alternative 3a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 3b. The minimum size limit applies to the recreational sector.

Alternative 4. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off North Carolina, South Carolina, Georgia, and the east coast of Florida.

Sub-alternative 4a. The minimum size limit applies to the commercial sector.
Sub-alternative 4b. The minimum size limit applies to the recreational sector.

Preferred Alternative 5. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off the east coast of Florida.

Preferred Sub-alternative 5a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 5b. The minimum size limit applies to the recreational sector.

Summary of Effects

Biological

There would be little difference in the biological benefits of **Alternative 1 (No Action), Alternative 2,** and **Preferred Alternative 3** since the establishment of a 12-inch fork length (FL) minimum size limit under **Alternative 2** and **Preferred Alternative 3** would do little to restrict commercial or recreational harvest of gray triggerfish in the South Atlantic. A minimum size limit of 12 inches FL for North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** would provide slightly greater spawning opportunities for gray triggerfish, relative to no action (**Alternative 1**). A minimum size limit of 14 inches FL under **Alternative 4** (North Carolina, South Carolina, Georgia, and east Florida), and **Preferred Alternative 5** (east Florida only) would provide the greatest spawning opportunities of the alternatives considered. Therefore, biological benefits would be greatest for **Alternative 4**, followed by **Preferred Alternative 5, Preferred Alternative 3, Alternative 2**, and **Alternative 1** (**No Action**) for the commercial and recreational sectors.

Economic

Alternative 1 (No Action) would have no added adverse or beneficial economic impact. **Alternative 1 (No Action)** and **Sub-alternatives 2a** and **2b** would have the same economic impact on commercial and recreational fishermen of North Carolina, South Carolina, and Georgia. **Preferred Sub-alternatives 3a** and **3b** would have the second smallest adverse economic impact on commercial and recreational fishermen of North Carolina, South Carolina, and Georgia but no added economic impact on commercial or recreational fishermen of Florida. **Sub-alternatives 4a** and **4b** would have the largest adverse economic impact because it would establish the largest minimum size limit in the largest area. **Preferred Sub-alternative 5a** and **5b** would have the same adverse economic impact on commercial and recreational fishermen of Florida as **Sub-alternatives 4a** and **4b**, but no added impact on those of North Carolina, South Carolina, or Georgia.

It is estimated that **Preferred Sub-alternative 3a** would reduce baseline commercial landings of the North Carolina, South Carolina, and Georgia from 1% to 3% and **Preferred Sub-alternative 5a** would reduce baseline commercial landings in Florida from 14% to 22%. The combined impact of **Actions 3** and **4** is expected to be a net increase in annual commercial landings of gray triggerfish by weight and value in the South Atlantic Region; however, there would be a net beneficial impact in North Carolina, South Carolina, and Georgia and a net adverse impact in Florida. The net annual increase of dockside revenues from gray triggerfish landings in North Carolina, South Carolina, and Georgia would range from $22,548 to $27,064 if the states' combined landings represent 76% of the total and from $29,363 to $37,020 if the states' landings represent 86% of the total. The net annual decrease of dockside revenues from gray triggerfish landings in Florida would range from $4,087 to $6,803 if 14% of the landings occur in Florida or from $7,012 to $11,662 if 24% of total landings are in Florida.

It is estimated that **Preferred Sub-alternative 3b** and **Preferred Sub-alternative 5b** would reduce annual recreational landings of gray triggerfish from 12,394 to 16,984 lbs ww and from 22,493 to 27,542 lbs ww, respectively. If North Carolina, South Carolina, and Georgia recreational fishermen harvest gray triggerfish in federal waters north of Florida, their combined losses would be the economic losses from decreases of 12,394 to 16,984 lbs ww. Similarly, if Florida recreational fishermen stay in federal waters off Florida, their annual economic losses would be from the reduction of 22,493 to 27,542 lbs ww of gray triggerfish they could no longer land.

Social

Some social effects of implementing minimum size limits would be associated with the positive and negative biological effects of minimum size limits on the gray triggerfish stock. Positive effects of allowing only fish of a certain size that are caught in the South Atlantic exclusive economic zone to be landed could help maintain sustainability of harvest and the health of the stock, which would be beneficial to recreational and commercial fishermen in the long term. Negative effects of potential increases in discard mortality due to a newly established size limit in North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** and **Alternative 4**, compared to allowing all fish to be landed in those states under **Alternative 1 (No Action)**, **Alternative 2**, and **Preferred Alternative 5,** could affect the stock and in turn, commercial and recreational fishing opportunities. Florida fishermen would experience increased discards under **Preferred Alternative 5**.

Administrative

Beneficial administrative effects would be expected from **Alternative 2**, **Preferred Alternative 3**, **Alternative 4**, and **Preferred Alternative 5** when compared with **Alternative 1** (**No Action**). Alternatives that allow for consistent minimum size limits in state and federal waters would help avoid confusion with regulations and aid law enforcement. **Alternative 4** and **Preferred Alternative 5** would further avoid confusion with regulations and aid law enforcement by specifying the same minimum size limit (14 inches FL) that is specified in federal waters of the Gulf of Mexico and in state waters of west Florida. Administrative impacts on the agency would be incurred by rule making, outreach, education, and enforcement.

Action 5. Establish a commercial split season for gray triggerfish

Alternative 1 (No Action). The commercial fishing year for gray triggerfish is the calendar year (January 1 – December 31). The commercial ACL is allocated for the entire year.

Preferred Alternative 2. Allocate the directed commercial gray triggerfish ACL into two quotas: 50% to the period January 1 through June 30 and 50% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Alternative 3. Allocate the directed commercial gray triggerfish ACL into two quotas; 40% to the period January 1 through June 30 and 60% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Summary of Effects

Biological

The biological impacts of a split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** are likely to be neutral since overall harvest would be limited to the sector ACL and split-season quotas and AMs would be triggered if the ACL or quotas were exceeded. Dividing the ACL into two time periods could result in early closures, and possibly encourage derby conditions to a greater extent than **Alternative 1 (No Action)**. Derby conditions would be expected to be more pronounced in season 1 under **Alternative 3** because season 1 would be much shorter than season 2. As a result, there could be increased targeting of gray triggerfish under season 1 in an effort to harvest some gray triggerfish before the season closed. Discards of gray triggerfish would be expected after quotas are met under **Preferred Alternative 2** and **Alternative 3** due to fishermen targeting co-occurring species. However, the magnitude of discards would be expected to be similar under the two alternatives. Furthermore, survival of discarded gray triggerfish is estimated to be very high (about 88%). Thus, any negative effects from alternatives that might result in an increase in regulatory discards would be expected to be minor. **Preferred Alternative 2** and **3** would establish fishing seasons that have opening and closing dates similar to vermilion snapper. Since gray triggerfish and vermilion snapper are co-occurring species that are caught together, **Preferred Alternative 2** and **Alternative 3** could reduce bycatch of both species. Split season quotas would allow fishermen in different regions to target gray triggerfish when weather is good in their area. Therefore, alternatives that divide the ACL into two time period quotas would allow for a greater opportunity among all areas to catch gray triggerfish. Furthermore, dividing the ACL into two seasons would allow fishermen to target gray triggerfish in summer when historical catches have been the best.

Economic

There would be no difference in annual economic impacts among **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** because there would be no change in annual total landings

and dockside revenues, assuming all of the ACL is caught each year and the price of gray triggerfish remains relatively constant. **Preferred Alternative 2** and **Alternative 3** redistribute when fishing and landings of gray triggerfish can occur throughout the year. The degree of economic effects depends primarily on the timing of the closures in relationship to other seasonal closures. For the first six months of the fishing year, **Alternative 1 (No Action)** would be the status quo as no closure would be expected; however, in 2014, the season for gray triggerfish closed on May 12th. **Preferred Alternative 2** is expected to have minor in-season direct negative economic effects; however, **Alternative 3** is expected to have greater direct negative economic effects due to the predicted timing of seasonal closures, potentially leaving at least some snapper grouper commercial fishermen with no species to target. The second six months of the fishing year is expected to close prior to the end of the calendar year. **Alternative 1 (No Action)** would result in the season closing sooner than either **Preferred Alternative 2** or **Alternative 3** and would result in greater direct negative economic effects. Because **Alternative 3** would extend the second season longer than **Preferred Alternative 2**, it is expected to have a greater direct economic benefit for the last six months of the fishing year.

Social

A split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** would likely increase access to the commercial ACL for North Carolina and South Carolina, which would be beneficial to commercial businesses in these areas. Additionally, a split season under **Preferred Alternative 2** or **Alternative 3** could reduce discards of vermilion snapper because the two species are commonly caught together. This could improve trip efficiency and help reduce regulatory discards for vessels catching vermilion snapper. When compared to **Alternative 1 (No Action)** minor social benefits are expected from **Preferred Alternative 2** or **Alternative 3**. The proposed 40%-60% split in the commercial ACL under **Alternative 3** reflects recent harvest patterns for gray triggerfish, and would be expected to result in fewer changes for the commercial fleet than under **Preferred Alternative 2**, which could limit access to the commercial ACL during the second part of the fishing year.

Administrative

Alternative 1 (**No Action)** would have fewer administrative impacts than **Preferred Alternative 2** or **Alternative 3**. Administrative impacts associated with **Preferred Alternative 2** and **Alternative 3** would be incurred through rulemaking, outreach, education, monitoring, and enforcement. NMFS has implemented split season quotas for vermilion snapper and the administrative impacts have been minor. Therefore, any administrative impacts associated with **Preferred Alternative 2** or **Alternative 3** are also expected to be minor.

Action 6. Establish a commercial trip limit for gray triggerfish

Alternative 1 (No Action). There is no commercial trip limit for gray triggerfish in the South Atlantic region.

Preferred Alternative 2. Establish a commercial trip limit for gray triggerfish in the South Atlantic region.

Sub-alternative 2a. 500 pounds whole weight (lbs ww)
Preferred Sub-alternative 2b. 1,000 lbs ww
Sub-alternative 2c. 1,500 lbs ww

Alternative 3. When 75% of the gray triggerfish commercial seasonal quota is met or is projected to be met, the trip limit is reduced to:

Sub-alternative 3a. 200 lbs ww
Sub-alternative 3b. 500 lbs ww
Sub-alternative 3c. 750 lbs ww

Summary of Effects

Biological

The biological effects of **Alternative 1 (No Action)**, **Preferred Alternative 2** (and associated sub-alternatives), and **Alternative 3** (and associated sub-alternatives) would be expected to be neutral because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. **Alternative 1 (No Action)** could present a greater biological risk to gray triggerfish in terms of exceeding the ACL than **Preferred Alternative 2** and **Alternative 3** since no trip limit would be in place to slow the rate of harvest and help ensure the ACL is not exceeded. However, improvements have been made to the quota monitoring system, and the South Atlantic Council has approved a Dealer Reporting Amendment (effective August 7, 2014), which should enhance data reporting. Therefore, any biological benefits associated with trip limits would be expected to be small. Larger trip limits would not constrain catch and would result in the ACL being met earlier in the year than smaller trip limits. Early closures of gray triggerfish could result in increased bycatch of gray triggerfish when fishermen target co-occurring species such as vermilion snapper and black sea bass. However, release mortality of gray triggerfish is considered to be low. Thus, no negative effects on the health of the gray triggerfish stock are expected from trip limits due to bycatch as the harvest is constrained by the ACL.

Economic

Commercial trip limits in general, are not economically efficient. Although lower trip limits can lengthen an open fishing season, trip limits can also economically disadvantage larger vessels and vessels that have to travel farther to reach their fishing grounds. Depending on vessel characteristics and the distance required to travel to fish, a trip limit that is too low could result in targeted trips that are cancelled, if the vessel cannot target other species on the same trip.

In 2012, 8.4% of commercial trips, which landed gray triggerfish, landed more than 500 lbs ww per trip, 2.3% landed more than 1,000 lbs ww per trip, and 0.8% landed more than 1,500 lbs ww per trip. **Alternative 1 (No Action)** would have no additional economic impact, while **Sub-alternatives 2a**, **2b (Preferred),** and **2c** are expected to have decreasing additional adverse economic effects from reduced average landings of gray triggerfish per trip. It is reasonable to expect that larger vessels which make longer trips could have landings greater than 500, 1,000, or 1,500 lbs ww. If so, **Sub-alternative 2a** would have the largest adverse economic effect on commercial fishermen with historically larger landings per trip, followed in turn by **Sub-alternatives 2b (Preferred)** and **2c**. Since **Preferred Sub-Alternative 2b** would only extend the fishing season by 7 to 16 days, the economic effect of this alternative when compared to **Alternative 1 (No Action)** would not be significant.

Because none of the sub-alternatives of **Alternative 3** are expected to have significant impacts on extending the length of the fishing season, economic effects relative to **Alternative 1 (No Action)** are expected to be minimal, however, the lower the trip limit, the greater the likelihood larger fishing vessels would be negatively impacted. A trip limit of 750 lbs ww after 75% of the ACL has been taken, as proposed in **Sub-alternative 3c,** would provide the greatest direct positive economic effect especially for larger vessels that would not be impacted the entire fishing season, followed by **Sub-alternatives 3b** (500 lbs ww) and **3a** (200 lbs ww), respectively. In general, the lower the trip limit, the greater the direct negative economic effects are likely for larger vessels.

Social

Communities in the South Atlantic Region would be expected to experience a combination of positive or negative effects if a commercial trip limit is established. In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Relative to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)** and **3** could reduce the risk of derby conditions and associated negative impacts that can occur due to an in-season closure or payback provision if the ACL is exceeded. A more restrictive trip limit is more likely to slow the rate of harvest and lengthen the season than a less restrictive trip limit, unless vessels do not currently harvest over a proposed limit. The 500 lbs ww limit proposed under **Sub-alternative 2a** is the most restrictive under **Alternative 2 (Preferred)**, but a low percentage of trips exceed 500 lbs ww of gray triggerfish at this time. Very few trips exceed 1,000 lbs ww (**Preferred Sub-alternative 2b**) and less than 1% exceed 1,500 lbs ww (**Sub-alternative 2c**). Since **Preferred Sub-Alternative 2b** would only extend the fishing season by 7 to 16 days, the social effect of this alternative when compared to **Alternative 1 (No Action)** would not be significant. The step-down trip limit when 75% of the commercial ACL is met under **Alternative 3** would allow commercial fishermen to continue fishing for other species, but with bycatch allowance for any gray triggerfish caught on the trips. **Sub-alternatives 3a-3c** would help to reduce discards of gray triggerfish and could help extend the season. Overall, the social benefits to the commercial fleet, associated businesses, and communities would likely be maximized as a result of some trade-off between season length and economic changes.

Administrative

Alternative 1 (No Action) would have less administrative impacts than **Alternatives 2 (Preferred)** and **3**. Administrative impacts associated with **Alternatives 2 (Preferred)** and **3** would come in the form

of rulemaking, outreach, education, monitoring, and enforcement. NMFS has implemented trip limits for other snapper grouper species and the impacts associated with **Alternative 2 (Preferred)** and **3** are expected to be minor.

Chapter 1. Introduction

1.1 What Action Is Being Proposed?

Amendment 29 would amend the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP). The amendment would: (1) update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Species" (ORCS); (2) adjust ABCs for the affected unassessed species; (3) adjust ACLs based on revised ABCs; and (4) revise management measures for gray triggerfish in federal waters of the South Atlantic region.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 13 voting members: 8 appointed by the Secretary of Commerce, 1 representative from each of the 4 South Atlantic states, the Southeast Regional Director of NMFS; and 4 non-voting members
- Responsible for developing fishery management plans and amendments under the Magnuson-Stevens Act; and recommends actions to NMFS for implementation
- Management area is from 3 to 200 miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West with the exception of Mackerel which is from New York to Florida, and Dolphin-Wahoo which is from Maine to Florida

1.2 Who is Proposing the Action?

The South Atlantic Council is proposing the action. The South Atlantic Council recommends management measures to the National Marine Fisheries Service (NMFS) who ultimately approves, disapproves, or partially approves, and implements the actions through the development of regulations on behalf of the Secretary of Commerce. NMFS is a component of the National Oceanic and Atmospheric Administration within the Department of Commerce.

1.3 Where is the Project Located?

Management of the federal snapper grouper fishery located off the southeastern United States (South Atlantic) in the 3-200 nautical miles U.S. exclusive economic zone is conducted under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP, SAFMC 1983) (**Figure 1.3.1**).

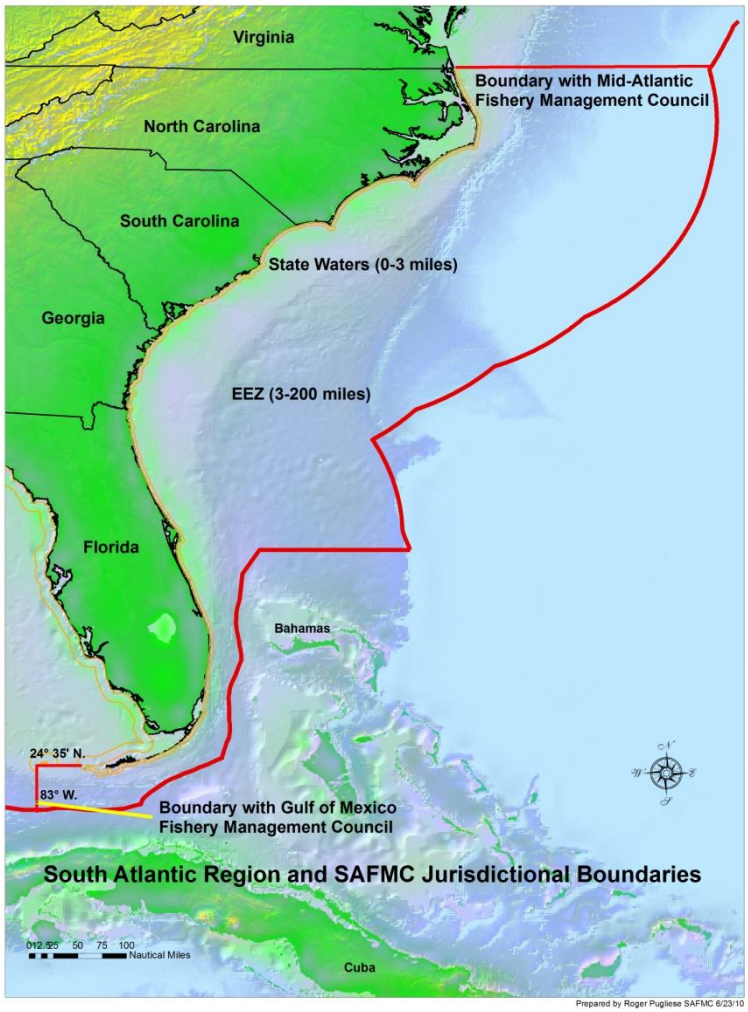

Figure 1.3.1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

1.4 Purpose and Need

The purpose of Amendment 29 is to: update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule based on recommendations from the Scientific and Statistical Committee; adjust ABCs for the affected species; revise annual catch limits (ACLs) for select species; and revise management measures for gray triggerfish in federal waters of the South Atlantic region.

The need for Amendment 29 is to: specify ABCs, ACLs, and ACTs for snapper grouper species based on the best available scientific information, diminish and/or prevent derby conditions, and ensure that overfishing does not occur pending a new assessment of the gray triggerfish stock in the South Atlantic region.

1.5 What is the History of Management for the species considered in this amendment?

Snapper grouper regulations in the South Atlantic where first implemented in 1983. See **Appendix D** of this document for a detailed history of management for the snapper grouper fishery.

1.6 What is the ORCS Approach?

Based on methodology in *Calculating Acceptable Biological Catch for Stocks That Have Reliable Catch Data Only (Only Reliable Catch Stocks – ORCS)* (Berkson et al. 2011), the South Atlantic Council's SSC recommended an approach to compute the ABC for unassessed stocks with only reliable catch data. The approach involved selection of a "catch statistic", a scalar to denote the risk of overexploitation for the stock, and a scalar to denote the management risk level. The SSC provided the first two criteria for each stock, and the South Atlantic Council specified their risk tolerance level for each stock.

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—therefore, the maximum catch over the period 1999-2007 was chosen instead. This time period was chosen to (1) be consistent with the period of landings used in the South Atlantic Council's Comprehensive ACL Amendment (SAFMC 2011c), and (2) to minimize the impact of recent regulations and the economic downturn on the landings time series.

Risk of Overexploitation: Based on SSC consensus and expert judgment each stock was assigned to a final risk of exploitation category. See **Appendix H** 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 SSC agreed that the "catch statistic × scalar" metric developed in this stage of the process may not represent a reliable proxy for the overfishing limit (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 x scalar" metric by a range of scalar values that reflects the South Atlantic Council's risk tolerance level. For instance, the South Atlantic Council may choose to be more risk-averse in computing the ABC for a stock that exhibits a moderately high risk of overexploitation. As such, the South Atlantic Council may use a scalar of 0.50 for such stocks to specify a more conservative ABC. On the other hand, stocks with low risk of overexploitation, and thus able to tolerate a higher level of management risk, may be assigned a less conservative scalar, such as 0.90.

Chapter 2. Proposed Actions and Alternatives

2.1 Action 1. Update the South Atlantic Council's Acceptable Biological Catch (ABC) Control Rule

Alternative 1 (No Action). 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.

Table 2.1.1. ABC control rule currently in place. Parenthetical values indicate (1) the maximum adjustment value for a dimension and (2) the adjustment values for each tier within a dimension.

Level 1 – Assessed Stocks	
Tier	**Tier Classification and Methodology to Compute ABC**
1. Assessment Information (10%)	6. Quantitative assessment provides estimates of exploitation and biomass; includes MSY-derived benchmarks. (0%) 7. Reliable measures of exploitation or biomass; no MSY benchmarks, proxy reference points. (2.5%) 8. Relative measures of exploitation or biomass, absolute measures of status unavailable. Proxy reference points. (5%) 9. Reliable catch history. (7.5%) 10. Scarce or unreliable catch records. (10%)
2. Uncertainty Characterization (10%)	6. Complete. Key Determinant – uncertainty in both assessment inputs and environmental conditions are included. (0%) 7. High. Key Determinant – reflects more than just uncertainty in future recruitment. (2.5%) 8. Medium. Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections. (5%) 9. Low. Distributions of F_{MSY} and MSY are lacking. (7.5%) 10. None. Only single point estimates; no sensitivities or uncertainty evaluations. (10%)
3. Stock Status (10%)	6. Neither overfished nor overfishing. Stock is at high biomass and low exploitation relative to benchmark values. (0%) 7. Neither overfished nor overfishing. Stock may be in close proximity to benchmark values. (2.5%) 8. Stock is either overfished or overfishing. (5%) 9. Stock is both overfished and overfishing. (7.5%) 10. Either status criterion is unknown. (10%)
4. Productivity and Susceptibility –	4. Low risk. High productivity, low vulnerability, low susceptibility. (0%) 5. Medium risk. Moderate productivity, moderate vulnerability, moderate

Risk Analysis (10%)	susceptibility. (5%) 6. 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. 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.

Preferred 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 and the existing Level 4 will be renumbered as Level 5.

Table 2.1.2. ABC control rule proposed under Preferred Alternative 2. Parenthetical values indicate (1) the maximum adjustment value for a dimension and (2) the adjustment values for each tier within a dimension.

Level 1 – Assessed Stocks	
Tier	**Tier Classification and Methodology to Compute ABC**
1. Assessment Information (10%)	6. Quantitative assessment provides estimates of exploitation and biomass; includes MSY-derived benchmarks. (0%) 7. Reliable measures of exploitation or biomass, no MSY benchmarks, proxy reference points. (2.5%) 8. Relative measures of exploitation or biomass, absolute measures of status unavailable. Proxy reference points. (5%) 9. Reliable catch history. (7.5%) 10. Scarce or unreliable catch records. (10%)
2. Uncertainty Characterization (10%)	6. Complete. Key determinant – uncertainty in both assessment inputs and environmental conditions are included. (0%) 7. High. Key determinant – reflects more than just uncertainty in future recruitment. (2.5%) 8. Medium. Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections. (5%) 9. Low. Distributions of F_{MSY} and MSY are lacking. (7.5%) 10. None. Only single point estimates; no sensitivities or uncertainty evaluations. (10%)
3. Stock Status (10%)	6. Neither overfished nor overfishing. Stock is at high biomass and low exploitation relative to benchmark values. (0%) 7. Neither overfished nor overfishing. Stock may be in close proximity to benchmark values. (2.5%) 8. Stock is either overfished or overfishing. (5%) 9. Stock is both overfished and overfishing. (7.5%) 10. Either status criterion is unknown. (10%)
4. Productivity and Susceptibility Analysis (10%)	4. Low risk. High productivity, low vulnerability, low susceptibility. (0%) 5. Medium risk. Moderate productivity, moderate vulnerability, moderate susceptibility. (5%) 6. 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 – 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.	

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":

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

6. 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

7. 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.

8. 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.

Two Alternatives Considered

Section 1502.14(a) of the National Environmental Policy Act (NEPA) states that "agencies shall: rigorously explore and objectively evaluate all reasonable alternatives…." Two reasonable alternatives for this action, including the no action alternative, have been identified by NMFS and the South Atlantic Fishery Management Council (South Atlantic Council). The Magnuson-Stevens Fishery Conservation and Management Act national standard 1 guidelines, at 50 C.F.R. section 600.305, states that for stocks and stock complexes required to have an ABC, each Council must establish an ABC control rule based on scientific advice from its Scientific and Statistical Committee (SSC). The ABC control rule identified in **Alternative 1 (No Action)** was developed by the South Atlantic Council's SSC and approved by the South Atlantic Council and implemented through the Comprehensive ACL Amendment (SAFMC 2011c). **Preferred Alternative 2** represents an update to the ABC control rule developed and recommended by the South Atlantic Council's SSC. The SSC has provided no other options, modifications, or recommendations to the ABC control rule for the South Atlantic Council's consideration. Therefore, the South Atlantic Council and NMFS have determined it is not reasonable to include additional alternatives for modifications to the ABC control rule.

2.1.1 A Summary of the Effects of the Alternatives

Updating the ABC control rule, as proposed in **Preferred Alternative 2**, would not have any direct biological effects. This change would; however, have minor indirect benefits to the biological environment since an improved scientific methodology would be adopted to establish ABCs for snapper grouper species that have not been assessed but for which there are reliable catch statistics. **Alternative 1 (No Action)** and **Preferred Alternative 2** would have no added beneficial or adverse economic impacts because **Action 1** is an administrative action; however, **Preferred Alternative 2** allows for subsequent action (**Actions 2** and **3**) to select ABC and associated ACLs that could have beneficial and/or adverse economic impacts beyond the status quo. Because the ABCs for the species without assessments for which there are reliable catch data would not be adjusted to reflect the new SSC ORCS methodology, including information from fishermen and scientific experts, **Alternative 1 (No Action)** would not result in any social benefits. On the other hand, the proposed ABC control rule under **Preferred Alternative 2** could help to increase some ABCs and associated ACLs, which would be more beneficial to the commercial and for-hire fleets, recreational fishermen, fishing businesses, and communities than maintaining the current ABC control rule under **Alternative 1 (No Action)**. The administrative impacts of **Preferred Alternative 2** would be minimal, and not differ much when compared with **Alternative 1** (**No Action**). Administrative burdens may result from revising the ACL values (**Actions 2** and **3**) in the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

2.2 Action 2. Apply the revised ABC Control Rule to select unassessed snapper grouper species

Alternative 1 (No Action). ABCs for select unassessed snapper grouper species are based on the current ABC Control Rule.

Species	Current ABC (lbs ww)
Bar Jack	24,780
Margate	29,889
Red Hind	24,867
Cubera Snapper	24,680
Yellowedge Grouper	30,221
Silk Snapper	25,104
Atlantic Spadefish	189,460
Gray Snapper	795,743
Lane Snapper	119,984
Rock Hind	37,953
Tomtate	80,056
White Grunt	674,033
Scamp	509,788
Gray Triggerfish	626,518

Preferred Alternative 2. Assign a risk tolerance scalar to stocks deemed by the SSC to be under low risk of overexploitation (scalar = 2):

Sub-alternative 2a. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.75	51,875	24,780	+27,095

Preferred Sub-alternative 2b. Apply a risk tolerance scalar of 0.90.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.90	62,249	24,780	+37,469

Preferred Alternative 3. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderate risk of overexploitation (scalar = 1.5):

Sub-alternative 3a. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.75	71,992	29,889	+42,103
Red Hind	27,570	1.5	0.75	31,016	24,867	+6,149
Cubera Snapper	52,721	1.5	0.75	59,311	24,680	+34,631
Yellowedge Grouper	46,330	1.5	0.75	52,121	30,221	+21,900
Silk Snapper	75,269	1.5	0.75	84,678	25,104	+59,574
Atlantic Spadefish	677,065	1.5	0.75	761,698	189,460	+572,238
Gray Snapper	1,039,277	1.5	0.75	1,169,187	795,743	+373,444
Lane Snapper	169,572	1.5	0.75	190,769	119,984	+70,785

Preferred Sub-alternative 3b. Apply a risk tolerance scalar of 0.80.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.80	76,792	29,889	+46,903
Red Hind	27,570	1.5	0.80	33,084	24,867	+8,217
Cubera Snapper	52,721	1.5	0.80	63,265	24,680	+38,585
Yellowedge Grouper	46,330	1.5	0.80	55,596	30,221	+25,375
Silk Snapper	75,269	1.5	0.80	90,323	25,104	+65,219
Atlantic Spadefish	677,065	1.5	0.80	812,478	189,460	+623,018
Gray Snapper	1,039,277	1.5	0.80	1,247,132	795,743	+451,389
Lane Snapper	169,572	1.5	0.80	203,486	119,984	+83,502

Preferred Alternative 4. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderately high risk of overexploitation (scalar = 1.25):

Sub-alternative 4a. Apply a risk tolerance scalar of 0.70.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.70	522,269	509,788	+12,481
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

Sub-alternative 4b. Apply a risk tolerance scalar of 0.75.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference of ABC
Rock Hind	42,849	1.25	0.75	40,171	37,953	+2,218
Tomtate	105,909	1.25	0.75	99,290	80,056	+19,234
White Grunt	735,873	1.25	0.75	689,881	674,033	+15,848
Scamp	596,879	1.25	0.75	559,574	509,788	+49,786
Gray Triggerfish	819,428	1.25	0.75	768,214	626,518	+141,696

Sub-alternative 4c. Apply a risk tolerance scalar of 0.50.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.50	26,781	37,953	-11,172
Tomtate	105,909	1.25	0.50	66,193	80,056	-13,863
White Grunt	735,873	1.25	0.50	459,921	674,033	-214,112
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.50	512,143	626,518	-114,375

Preferred Sub-alternative 4d. Apply a risk tolerance scalar of 0.70 for rock hind, tomtate, white grunt and gray triggerfish and 0.50 for scamp.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

2.2.1 A Summary of the Effects of the Alternatives

An increase in harvest beyond sustainable levels can have a negative biological impact on a species. However, all of the ABC sub-alternatives under this action were developed by the South Atlantic Council's SSC using the "ORCS" approach, and would not be expected to cause overfishing and result in negative biological impacts. There is uncertainty involved through the selection of the risk of overexploitation scalar (determined by the SSC) and the selection of the risk tolerance scalar (determined by the South Atlantic Council under this action). If the South Atlantic Council selects the risk tolerance scalar to achieve the most conservative values of ABC, biological impacts would be minimized. However, while conservative ABCs may provide the greatest biological benefit to the species, higher ABCs would not be expected to negatively impact the stock as long as harvest is maintained at sustainable levels and overfishing does not occur. Because the ACLs (commercial or recreational) for most of the species and species complexes addressed by this amendment have not recently been met or exceeded, the increases in the ABC under **Sub-alternatives 2a, Preferred 2b, 3a, Preferred 3b, 3c, 4a,** and **4b** are not expected to affect commercial and recreational fishermen harvesting these species. The lower ABCs expected under **Sub-alternative 4c** and **Preferred Sub-alternative 4d** could impact some species and species complexes if harvest increases in the future.

Sub-alternatives 2a, Preferred 2b, 3a, Preferred 3b, 4a, and **4b** would increase the ABCs (commercial and recreational) for most of the species, which could increase their ACLs and annual landings. However, actual changes are dependent on **Action 3** and historical landings. The lower ACLs expected from lower ABCs under **Sub-alternative 4c** could impact some of the stocks if harvest increases in the future. The decrease in ABC for white grunt under **Preferred Sub-alternative 4d** could limit fishing opportunities for this species, particularly for recreational anglers in south Florida and the Florida Keys, where the species is a popular, easy-to-target recreational species.

ABC alternatives selected in this action would result in modification of ACLs in **Action 3**. Alternatives in either **Action 2** or **Action 3** that allow for an increase in harvest could slightly reduce administrative burdens because the likelihood of triggering accountability measures (AMs) would be reduced. Conversely, alternatives in either **Action 2** or **Action 3** that result in a decrease in allowable harvest could increase the administrative burden because it would be more likely that AMs would be triggered and action would be needed to ensure overfishing did not occur. Administrative burdens resulting from revising the values under **Alternative 2, Alternative 3, Alternative 4,** and associated sub-alternatives would take the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

ACLs and recreational annual catch targets (ACTs) resulting from proposed changes in ABCs under **Alternatives 2-4** are addressed in **Action 3**. Some species in **Action 2** are contained within a complex and do not have sector ACLs or recreational ACTs at the species level.

2.3 Action 3. Establish ACLs for select unassessed snapper grouper species

Alternative 1 (No Action). ACL=OY=Current ABC

Alternative 2. ACL=OY=Proposed ABC
- **Preferred Sub-alternative 2a.** Snappers Complex[a]
- **Preferred Sub-alternative 2b.** Grunts Complex[b]
- **Preferred Sub-alternative 2c.** Shallow Water Grouper Complex[c]
- **Preferred Sub-alternative 2d.** Bar Jack
- **Preferred Sub-alternative 2e.** Atlantic Spadefish
- **Sub-Alternative 2f.** Scamp
- **Preferred Sub-Alternative 2g.** Gray Triggerfish

Alternative 3. ACL=OY=0.95*Proposed ABC
- **Sub-alternative 3a.** Snappers Complex[a]
- **Sub-alternative 3b.** Grunts Complex[b]
- **Sub-alternative 3c.** Shallow Water Grouper Complex[c]
- **Sub-alternative 3d.** Bar Jack
- **Sub-alternative 3e.** Atlantic Spadefish
- **Sub-alternative 3f.** Scamp
- **Sub-alternative 3g.** Gray Triggerfish

Alternative 4. ACL=OY=0.90*Proposed ABC
- **Sub-alternative 4a.** Snappers Complex[a]
- **Sub-alternative 4b.** Grunts Complex[b]
- **Sub-alternative 4c.** Shallow Water Grouper Complex[c]
- **Sub-alternative 4d.** Bar Jack
- **Sub-alternative 4e.** Atlantic Spadefish
- **Preferred Sub-alternative 4f.** Scamp
- **Sub-alternative 4g.** Gray Triggerfish

Alternative 5. ACL=OY=0.80*Proposed ABC
- **Sub-alternative 5a.** Snappers Complex[a]
- **Sub-alternative 5b.** Grunts Complex[b]
- **Sub-alternative 5c.** Shallow Water Grouper Complex[c]
- **Sub-alternative 5d.** Bar Jack
- **Sub-alternative 5e.** Atlantic Spadefish
- **Sub-alternative 5f.** Scamp
- **Sub-alternative 5g.** Gray Triggerfish

(a) Snappers: **Gray snapper, lane snapper, cubera snapper**, dog, mahogany
(b) Grunts: **White grunt, margate**, sailor's choice, **tomtate**
(c) Shallow Water Grouper: **Red hind, rock hind**, coney, graysby, yellowfin grouper, yellowmouth grouper

Table 2.3.1 describes proposed ACLs based on the preferred alternatives (**Preferred Alternative 2, Preferred Sub-alternative 2b, Preferred Alternative 3, Preferred Sub-alternative 3b, Preferred Alternative 4, Preferred Sub-alternative 4d**) in **Action 2** and alternatives in **Action 3**. **Table 2.3.2** presents commercial and recreational ACLs and recreational ACTs based on preferred alternatives in **Action 2** and preferred alternatives in **Action 3**. Highlighted cells represent the alternatives selected as preferred in **Action 3**.

Table 2.3.1. Proposed commercial and recreational ACLs and recreational ACTs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells indicate South Atlantic Council's preferred ACL change.

Species or Complex	Action 3, Alternative 1			Action 3, Alternative 2 ACL = OY= ABC			Action 3, Alternative 3 ACL = OY = 95%ABC			Action 3, Alternative 4 ACL = OY = 90%ABC			Action 3, Alternative 5 ACL = OY = 80%ABC		
	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT
Snappers Complex (a)	215,662	728,577	624,197	344,884	1,172,832	984,898	327,640	1,114,191	935,653	310,395	1,055,549	886,408	275,907	938,266	787,918
Grunts Complex (b)	218,539	588,113	442,970	217,903	618,122	455,962	794,224	207,008	433,164	752,423	196,113	410,366	174,322	494,498	364,770
SWG Complex (c)	49,776	46,656	23,595	55,542	48,648	20,542	98,981	52,764	19,515	93,771	49,987	18,488	44,434	38,918	16,434
Bar Jack	5,265	19,515	9,758	13,228	49,021	11,912	12,567	46,570	11,912	11,905	44,119	11,317	10,582	39,217	9,530
Atlantic Spadefish	35,108	154,352	96,470	150,552	661,926	413,704	143,025	628,830	393,018	135,497	595,733	372,333	120,442	529,541	330,963
Scamp	333,100	176,688	94,316	243,750	129,299	69,020	231,563	122,834	65,569	219,375	116,369	62,118	195,000	103,439	55,216
Gray Triggerfish	272,880	353,638	284,325	312,325	404,675	325,359	296,709	384,441	309,091	281,093	364,207	292,823	249,860	323,740	260,287

(a) Snappers: **Gray snapper, lane snapper, cubera snapper**, dog, mahogany
(b) Grunts: **White grunt, margate**, sailor's choice, **tomtate**
(c) Shallow Water Grouper: **Red hind, rock hind**, coney, graysby, yellowfin grouper, yellowmouth grouper

Table 2.3.2. Proposed commercial and recreational ACLs and recreational ACTs based on preferred sub-alternatives in Action 3, and preferred alternatives in Action 2.

Species or Complex	Action 3, Alternative 1 (No Action)			Action 3, Preferred Sub-alternatives 2a-2e, 2g, and 4f		
	Comm ACL	Rec ACL	Rec ACT	Comm ACL	Rec ACL	Rec ACT
Snappers Complex (a)	215,662	728,577	624,197	344,884	1,172,832	984,898
Grunts Complex (b)	218,539	588,113	442,970	217,903	618,122	455,962
SWG Complex (c)	49,776	46,656	23,595	55,542	48,648	20,542
Bar Jack	5,265	19,515	9,758	13,228	49,021	11,912
Atlantic Spadefish	35,108	154,352	96,470	150,552	661,926	413,704
Scamp	333,100	176,688	94,316	219,375	116,369	62,118
Gray Triggerfish	272,880	353,638	284,325	312,325	404,675	325,359

(a) Snappers: **Gray snapper, lane snapper, cubera snapper**, dog, mahogany
(b) Grunts: **White grunt, margate**, sailor's choice, **tomtate**
(c) Shallow Water Grouper: **Red hind, rock hind**, coney, graysby, yellowfin grouper, yellowmouth grouper

2.3.1 A Summary of the Effects of the Alternatives

Action 3 would specify ACLs and recreational ACTs for three species groups and four species based on the ABCs selected by the South Atlantic Council in **Action 2**. It would not change the ACL for the Deepwater Complex. **Table 2.3.1** displays the proposed commercial and recreational ACLs and recreational ACTs based on the preferred alternatives in **Action 2** and the alternatives in **Action 3**. Highlighted cells indicated preferred alternatives under **Action 3**. **Table 2.3.2** presents commercial and recreational ACLs, and recreational ACTs based on preferred alternatives in **Actions 2** and **3**. For an analysis of proposed ACLs based on all proposed alternatives in **Action 2** and **Action 3**, see **Chapter 4** (**Tables 4.3.1-4.3.11**).

Alternatives 3-5 would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL/OY and ABC, with **Alternative 5** setting the most conservative ACL at 80% of the ABC (**Tables 2.3.1, and Tables 4.3.1-4.3.11**). Creating a buffer between the ACL/OY and ABC would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above SSB_{MSY}. However, the South Atlantic Council's ABC control rule takes into account scientific uncertainty. The Magnuson-Stevens Act national standard 1 guidelines indicate an ACL may typically be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. An ACT, which is not required, can also be set below the ACL to account for management uncertainty and provide greater assurance overfishing does not occur.

Alternatives under **Action 3** would increase the ACL for some species or species complexes or decrease the ACL for species or species complexes. For most species and species complexes, the

ACLs are currently not being met. If harvest is less than the proposed ACLs, biological effects would be expected to be minimal.

Among the action alternatives, **Alternative 2** would allow for the largest increases in the ACLs, followed in turn by **Alternatives 3**, **4,** and **5**. **Preferred Alternatives 2a-2e** and **2g** would generate the largest increases in the total ACLs for Atlantic spadefish, bar jack, gray triggerfish, grunts complex, shallow water grouper complex, and snappers complexes. **Alternative 5f** would generate the largest decrease in the total ACL for scamp, followed in turn by **Preferred Alternative 4f**, **Alternative 3f**, **Alternative 2f,** and **Alternative 1.** These changes represent potential changes in net economic benefits that derive from landings of the three complexes and four species. Actual economic impacts are dependent on baseline landings relative to the current and revised ACLs.

Baseline commercial landings for Atlantic spadefish, grunts complex, shallow water grouper complex, and snappers complex are less than their current ACLs and **Preferred Sub-alternatives 2a-2c** and **2e** would increase these ACLs. Hence, **Preferred Sub-alternatives 2a-2c** and **2e** would have the same economic impact as **Alternative 1** (**No Action**). Baseline commercial landings of bar jack and gray triggerfish exceed their current ACLs and **Preferred Sub-alternatives 2d** and **2g** would increase these ACLs. It follows that **Preferred Sub-alternatives 2d** and **2g** would increase annual commercial landings of bar jack and gray triggerfish, respectively. Baseline commercial landings of scamp are less than its current commercial ACL. **Preferred Sub-alternative 4f** and **Sub-alternatives 2f**, **3f,** and **5f** would reduce the commercial ACL for scamp, but not less than baseline commercial landings. Consequently, **Alternative 1** (**No Action**), **Preferred Sub-alternative 4f** and **Sub-alternatives 2f**, **3f,** and **5f** would have the same economic impact.

A comparison of baseline recreational landings and the alternative recreational ACLs shows none of the alternatives of **Action 3** would produce a change in annual recreational landings of Atlantic spadefish, bar jack, Grunts Complex, scamp, Shallow Water Grouper Complex, or Snappers Complex. **Preferred Sub-Alternative 2g** and **Alternative 3g** would yield the same increases in recreational landings of and associated economic benefits from gray triggerfish. **Alternatives 4g** and **5g** would reduce annual recreational landings of and associated economic benefits from gray triggerfish, with **Sub-alternative 5g** having the largest adverse impact.

Regarding social effects, **Alternative 2** would be the most beneficial to fishermen and communities by setting the ACL at the highest level allowed by the ABC specified in **Action 2**, and **Alternative 5** would be the least beneficial. However, because the ABCs set in **Action 2** are based on ORCS methodology and for stocks with limited available data, a buffer as proposed in **Alternatives 3-5**, could be more beneficial to resource users in the long term, if future data indicate the ABCs should be lower.

Alternatives that result in higher ACLs for species or species complexes could slightly reduce administrative burdens because the likelihood of triggering AMs would be reduced. Conversely, alternatives that decrease ACLs could increase the administrative burden because it would be more likely that AMs would be triggered and action would be needed to ensure overfishing did not occur. Administrative burdens also may result from revising the values under the alternatives in

the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

2.4 Action 4. Modify the minimum size limit for gray triggerfish

Alternative 1 (No Action). The minimum size limit is 12 inches total length (TL) in federal waters off the east coast of Florida and 12 inches fork length (FL) in state waters off the east coast of Florida.

Alternative 2. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off the east coast of Florida.
Sub-alternative 2a. The minimum size limit applies to the commercial sector.
Sub-alternative 2b. The minimum size limit applies to the recreational sector.

Preferred Alternative 3. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off North Carolina, South Carolina, and Georgia.
Preferred Sub-alternative 3a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 3b. The minimum size limit applies to the recreational sector.

Alternative 4. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off North Carolina, South Carolina, Georgia, and the east coast of Florida.
Sub-alternative 4a. The minimum size limit applies to the commercial sector.
Sub-alternative 4b. The minimum size limit applies to the recreational sector.

Preferred Alternative 5. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off the east coast of Florida.
Preferred Sub-alternative 5a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 5b. The minimum size limit applies to the recreational sector.

2.4.1 A Summary of the Effects of the Alternatives

There would be little difference in the biological benefits of **Alternatives 1 (No Action)**, **Alternative 2**, and **Preferred Alternative 3** since the establishment of a 12-inch fork length (FL) minimum size limit under **Alternative 2** and **Preferred Alternative 3** would do little to restrict commercial or recreational harvest of gray triggerfish in the South Atlantic. A minimum size limit of 12 inches FL for North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** would provide slightly greater spawning opportunities for gray triggerfish, relative to no action (**Alternative 1, No Action**). A minimum size limit of 14 inches FL under **Alternative 4** (North Carolina, South Carolina, Georgia, and the east coast of Florida), and **Preferred Alternative 5** (east coast of Florida only) would provide the greatest spawning opportunities of the alternatives considered. Therefore, biological benefits would be greatest for **Alternative 4**, followed by **Preferred Alternatives 3** and **5** combined, **Preferred Alternative 5, Preferred Alternative 3, Alternative 2**, and **Alternative 1** (**No Action**) for the commercial and recreational sectors.

Alternatives 1 (No Action), **2**, and **5 (Preferred)** would have no added adverse or beneficial economic impact. **Alternative 1 (No Action)** and **Sub-alternatives 2a** and **2b** would have the same economic impact on commercial and recreational fishermen of North Carolina, South Carolina, and Georgia who harvest gray triggerfish. **Alternative 4** would have the largest adverse economic impact on fishermen of the three states and **Preferred Alternative 3** would have the second largest adverse economic impact among the alternatives. **Alternatives 1 (No Action)** and **3 (Preferred)** would have no additional economic impact on fishermen of Florida. **Alternative 4** and **Preferred Alternative 5** would have the same and the largest adverse economic impact on fishermen of Florida, while **Alternative 2** would have the second smallest adverse impact. It is possible that fishermen may attempt to reduce the impacts by moving into state waters and/or increasing the length of a trip to harvest the same number of pounds; however, an increase in the length of a trip would increase trip-related costs, such as fuel, bait, and risk. In addition, the ability to mitigate for these reductions is dependent on other actions in this amendment, such as **Action 3** that would change the commercial ACL, and **Action 5** that would split the annual commercial ACL to create two 6-month seasons.

Changing the minimum size limit to 12 inches FL under **Preferred Alternative 3** would establish a minimum size limit that is consistent with the current minimum size limit requirements in state waters off east Florida (**Alternative 1 No Action)**. However, the South Atlantic Council has selected an alternative that would increase the minimum size limit to 14 inches FL off the east coast of Florida (**Preferred Alternative 5**). Thus, selection of **Preferred Alternatives 3** and **Alternative 5** would result in inconsistent regulations between the east coast of Florida and the other South Atlantic states. A 14-inch FL minimum size limit specified in **Alternative 4** and **Preferred Alternative 5** would allow for consistent minimum size limit regulations for gray triggerfish in the Gulf of Mexico and South Atlantic, which is particularly troublesome for fishermen and law enforcement in the Florida Keys. However, **Preferred Alternative 3** and **Alternative 4** could have some negative effects on recreational and commercial fishermen harvesting gray triggerfish in the EEZ off states that currently do not have size limits by limiting the number of fish that can be kept.

Some social effects of implementing minimum size limits would be associated with the positive and negative biological effects of minimum size limits on the gray triggerfish stock. Positive effects of allowing only fish of a certain size that are caught in the South Atlantic EEZ to be landed could help maintain sustainability of harvest and the health of the stock, which would be beneficial to recreational and commercial fishermen in the long term. Negative effects of potential increases in discard mortality due to a newly established size limit in North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** and **Alternative 4**, compared to allowing all fish to be landed in those states under **Alternative 1 (No Action)**, **Alternative 2**, and **Preferred Alternative 5,** could affect the stock and in turn, commercial and recreational fishing opportunities. Florida fishermen would experience increased discards under **Preferred Alternative 5**.

Beneficial administrative effects would be expected from **Alternative 2**, **Preferred Alternative 3**, and **Alternative 4**, and **Preferred Alternative 5** when compared with **Alternative 1** (**No Action**). **Alternative 4** and **Preferred Alternative 5** would further avoid confusion with

regulations and aid law enforcement by specifying the same minimum size limit (14 inches FL) that is specified in federal waters of the Gulf of Mexico and in state waters off the west coast of Florida. Administrative impacts on the agency associated with the action alternatives would be incurred by rule making, outreach, education and enforcement.

2.5 Action 5. Establish a commercial split season for gray triggerfish

Alternative 1 (No Action). The commercial fishing year for gray triggerfish is the calendar year (January 1- December 31). The commercial ACL is allocated for the entire year.

Preferred Alternative 2. Allocate the directed commercial gray triggerfish ACL into two quotas: 50% to the period January 1 through June 30 and 50% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Alternative 3. Allocate the directed commercial gray triggerfish ACL into two quotas; 40% to the period January 1 through June 30, and 60% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

2.5.1 A Summary of the Effects of the Alternatives

The biological impacts of a split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** are likely to be neutral since overall harvest would be limited to the sector ACL and split-season quotas, and AMs would be triggered if the ACL or quotas were exceeded. Dividing the ACL into two time periods could result in the gray triggerfish commercial harvest being open for a short period of time, and possibly encourage derby conditions to a greater extent than **Alternative 1 (No Action)**. Derby conditions would be expected to be more pronounced in season 1 under **Alternative 3** because season 1 would be much shorter than season 2. As a result, there could be increased targeting of gray triggerfish under season 1 in an effort to harvest some gray triggerfish before the season closed. Discards of gray triggerfish would be expected after quotas are met under **Preferred Alternative 2** and **Alternative 3** due to fishermen targeting co-occurring species. However, the magnitude of discards would be expected to be similar under the two alternatives. Furthermore, survival of discarded gray triggerfish is estimated to be very high (about 88%). Thus, any negative effects from alternatives that might result in an increase in regulatory discards would be expected to be minor. **Preferred Alternative 2** and **Alternative 3** would establish fishing seasons that have opening and closing dates similar to vermilion snapper. Since gray triggerfish and vermilion snapper are co-occurring species that are caught together, **Preferred Alternative 2** and **Alternative 3** could reduce bycatch of both species. Additionally, split season quotas would allow fishermen in different regions to target gray triggerfish when weather is good in their area. Therefore, alternatives that divide the ACL into two time period quotas would allow for a greater opportunity among fishermen in all areas to catch gray triggerfish. Furthermore, dividing the ACL into two seasons would allow fishermen to target gray triggerfish in summer when historical catches have been the best.

There would be no difference in annual economic impacts among **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** because there would be no change in annual total landings and dockside revenues, assuming all of the ACL is caught each year and the price of gray triggerfish remains relatively constant. **Preferred Alternative 2** and **Alternative 3** redistribute

when fishing and landings of gray triggerfish can occur throughout the year. The degree of economic effects depends primarily on the timing of the closures in relationship to other seasonal closures. For the first six months of the fishing year, **Alternative 1 (No Action)** would be the status quo as no closure would be expected (**Table 4.5.5**); however, in 2014, the season for gray triggerfish closed on May 12th. **Preferred Alternative 2** is expected to have minor in-season direct negative economic effects; however, **Alternative 3** is expected to have greater direct negative economic effects due to the predicted timing of seasonal closures, potentially leaving at least some snapper grouper commercial fishermen with no species to target. The second six months of the fishing year is expected to close prior to the end of the calendar year. **Alternative 1 (No Action)** would result in the season closing sooner than either **Preferred Alternative 2** or **Alternative 3** and would result in greater direct negative economic effects. Because **Alternative 3** would extend the second season longer than **Preferred Alternative 2**, it is expected to have a greater direct economic benefit for the last six months of the fishing year.

A split commercial fishing season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** would likely increase access to the commercial ACL for North Carolina and South Carolina, which would be beneficial to commercial businesses in these areas. Additionally, a split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** could reduce discards of vermilion snapper because the two species are commonly caught together. When compared to **Alternative 1 (No Action)** minor social benefits are expected from **Preferred Alternative 2**. This could improve trip efficiency and help reduce regulatory discards for vessels catching vermilion snapper. The proposed 40%-60% split in the commercial ACL during the two fishing seasons for gray triggerfish under **Alternative 3** reflects recent harvest patterns for the species, and would be expected to result in fewer changes for the commercial fleet than under **Preferred Alternative 2**, which could impose some limited access to the commercial ACL during the second part of the fishing year.

Alternative 1 (**No Action)** would have fewer administrative impacts than **Preferred Alternative 2** or **Alternative 3** because only one quota would need to be monitored. Relative to **Alternative 1 (No Action)**, **Preferred Alternative 2,** and **Alternative 3** would increase the administrative impacts in the form of rulemaking, outreach, education, monitoring, and enforcement.

2.6 Action 6. Establish a commercial trip limit for gray triggerfish

Alternative 1 (No Action). There is no commercial trip limit for gray triggerfish in the South Atlantic region.

Preferred Alternative 2. Establish a commercial trip limit for gray triggerfish in the South Atlantic region.

Sub-alternative 2a. 500 pounds whole weight (lbs ww)
Preferred Sub-alternative 2b. 1,000 lbs ww
Sub-alternative 2c. 1,500 lbs ww

Alternative 3. When 75% of the gray triggerfish commercial seasonal quota is met or is projected to be met, the trip limit is reduced to:

Sub-alternative 3a. 200 lbs ww
Sub-alternative 3b. 500 lbs ww
Sub-alternative 3c. 750 lbs ww

2.6.1 A Summary of the Effects of the Alternatives

The biological effects of **Alternatives 1 (No Action), Preferred Alternative 2** (and associated sub-alternatives)**,** and **Alternative 3** (and associated sub-alternatives) would be expected to be neutral because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. **Alternative 1 (No Action)** could present a greater biological risk to gray triggerfish in terms of exceeding the ACL than **Alternatives 2 (Preferred)** and **3** since no trip limit would be in place to slow down the rate of harvest and help ensure the ACL is not exceeded. However, improvements have been made to the quota monitoring system, and the South Atlantic Council has approved a Dealer Reporting Amendment, which should enhance data reporting. Therefore, any biological benefits associated with trip limits would be expected to be small. Larger trip limits would not constrain catch and would result in the ACL being met earlier in the year. Early closures of gray triggerfish could result in increased bycatch of gray triggerfish when fishermen target co-occurring species such as vermilion snapper and black sea bass. However, release mortality of gray triggerfish is considered to be low. Thus, commercial closures associated with meeting the ACL are not expected to negatively affect the gray triggerfish stock due to bycatch.

Commercial trip limits in general, are not economically efficient. Although lower trip limits can lengthen an open fishing season, trip limits can also economically disadvantage larger vessels and vessels that have to travel farther to reach their fishing grounds. Depending on vessel characteristics and the distance required to travel to fish, a trip limit that is too low could result in targeted trips that are cancelled, if the vessel cannot target other species on the same trip. From 2009 through 2013, very few commercial trips, which landed gray triggerfish, landed more than 500 lbs ww per trip. It is reasonable to expect that larger vessels that make longer trips could have landings greater than 500, 1,000 or 1,500 lbs ww. If so, **Sub-alternative 2a** would have the largest adverse economic impact on commercial fishermen with historically larger landings per trip, followed in turn by **Sub-alternatives 2b (Preferred)** and **2c**. **Alternative 1 (No Action)**

would have no adverse economic impact beyond the baseline. Since **Preferred Sub-Alternative 2b** would only extend the fishing season by 7 to 16 days, the economic effect of this alternative when compared to **Alternative 1 (No Action)** would not be significant. Because none of the sub-alternatives of **Alternative 3** are expected to have significant impact on extending the length of the fishing season, the sub-alternatives are expected to have minimal economic effects when compared to **Alternative 1 (No Action)**. A trip limit of 750 lbs ww after 75% of the ACL has been taken as in **Sub-alternative 3c** would provide the smallest adverse economic impact per trip followed by **Sub-alternatives 3b** (500 lbs ww) and **3a** (200 lbs ww), respectively.

Communities in the South Atlantic Region would be expected to experience positive or negative effects if a commercial trip limit is established. In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Relative to **Alternative 1 (No Action)**, **Alternatives 2 (Preferred)**, and **3** could reduce the risk of derby conditions and associated negative impacts that can occur due to an in-season closure or payback provision if the ACL is exceeded. A more restrictive trip limit is more likely to slow the rate of harvest and lengthen the season than a less restrictive trip limit, unless vessels do not currently harvest over a proposed limit. The 500-lbs ww limit proposed under **Sub-alternative 2a** is the most restrictive under **Alternative 2 (Preferred)**, but a low percentage of trips exceed 500 lbs ww of gray triggerfish at this time (**Table 4.5.1**). Very few trips exceed 1,000 lbs ww (**Preferred Sub-alternative 2b**) and less than 1% exceed 1,500 lbs ww (**Sub-alternative 2c**). The step-down trip limit when 75% of the commercial ACL is met under **Alternative 3** would allow commercial trips to continue fishing for other species, but with a sort of bycatch allowance for any gray triggerfish caught on the trips. **Sub-alternatives 3a-3c** would help to reduce discards of gray triggerfish and could help extend the season. Overall, the social benefits to the commercial fleet, associated businesses, and communities would likely be maximized as a result of some trade-off between season length and economic changes.

Alternative 1 (No Action) would have fewer administrative impacts than **Alternatives 2 (Preferred)** and **3**. Administrative impacts associated with **Alternatives 2 (Preferred)** and **3** would come in the form of rulemaking, outreach, education, monitoring, and enforcement. NMFS has implemented trip limits in other fisheries and the impacts associated with **Alternative 2 (Preferred)** and **3** are expected to be minor.

Chapter 3. Affected Environment

This section describes the affected environment in the proposed project area. The affected environment is divided into four major components:

Affected Environment

- **Habitat environment (Section 3.1)**

  Examples include coral reefs, sea grass beds, and rock/hard-bottom substrates

- **Biological and ecological environment (Section 3.2)**

  Examples include populations of groupers, corals, and turtles

- **Human environment (Section 3.3)**

  Examples include fishing communities and economic descriptions of the fisheries

- **Administrative environment (Section 3.4)**

  Examples include the fishery management process and enforcement activities

3.1 Habitat Environment

Many snapper grouper species utilize both open-water and bottom habitats during several life-history stages; larval stages of these species live in the water column and feed on plankton. Most juveniles and adults are bottom-dwellers and associate with hard structures on the continental shelf that have moderate to high relief (e.g., coral reef systems and artificial reef structures, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings). Juvenile stages of some snapper grouper species also utilize inshore seagrass beds, mangrove estuaries, lagoons, oyster reefs, and embayment systems. In many species, various combinations of these habitats may be utilized during daily feeding migrations or seasonal shifts in cross-shelf distribution.

Predominant snapper grouper offshore fishing areas are located in live-bottom and shelf-edge habitats, where water temperatures range from 11° to 27°C (52° to 81°F) due to the proximity of the Gulf Stream, with lower shelf habitat temperatures varying from 11° to 14°C (52° to 57°F). Water depths range from 16 to 27 meters (54 to 90 feet) or greater for live-bottom habitats, 55 to 110 meters (180 to 360 feet) for the shelf-edge habitat, and from 110 to 183 meters (360 to 600 feet) for lower-shelf habitat areas.

Artificial reef structures are also utilized to attract fish and increase fish harvests; however, research on artificial reefs is limited and opinions differ as to whether or not these structures promote an increase of ecological biomass or merely concentrate fishes by attracting them from nearby, natural unvegetated areas of little or no relief.

More detail on these habitat types is found in Volume II of the South Atlantic Fishery Management Council's (South Atlantic Council) Fishery Ecosystem Plan (SAFMC 2009b) available at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx. EFH and EFH-HAPCs are discussed below. Additional details are found in **Appendix C**.

3.1.1 Essential Fish Habitat

Essential fish habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories of EFH identified in the South Atlantic Bight, which are utilized by federally managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas.

EFH utilized by snapper grouper species in the South Atlantic region includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs, and medium to high profile outcroppings on and around the shelf break zone from shore to at least 183 meters [600 feet (but to at least 2,000 feet for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival

of larvae and growth up to and including settlement. In addition, the Gulf Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine-dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meters (100-foot) contour, such as attached microalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom habitats.

3.1.2 Habitat Areas of Particular Concern

Areas which meet the criteria for EFH-habitat areas of particular concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs) and Deepwater Marine Protected Areas (MPAs). Areas that meet the criteria for designating essential fish habitat-habitat areas of particular concern include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

3.2 Biological and Ecological Environment

The reef environment in the South Atlantic management area affected by actions in this environmental assessment is defined by two components (**Figure 3.1.1**). Each component will be described in detail in the following sections.

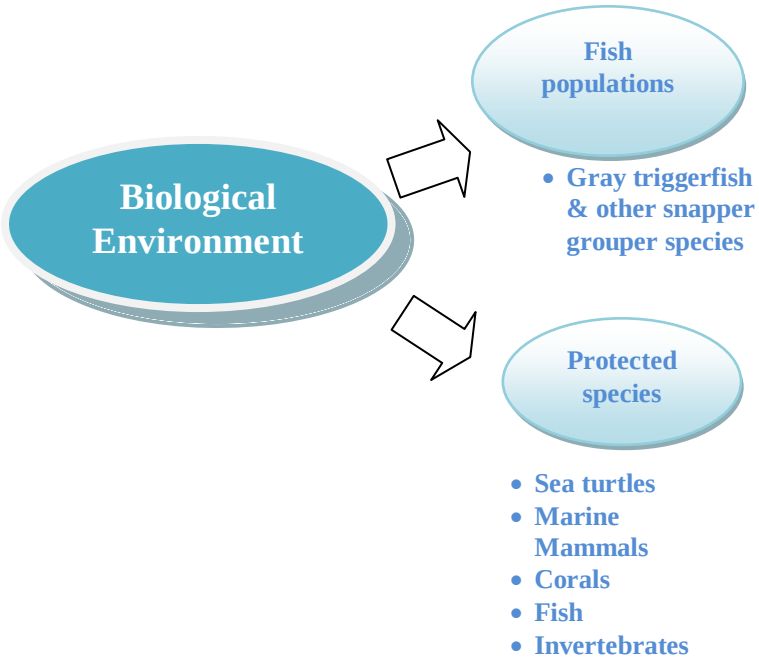

Figure 3.1.1. Two components of the biological environment described in this document.

3.2.1 Fish Populations

The waters off the South Atlantic coast are home to a diverse population of fish. The snapper grouper fishery management unit contains 59 species of fish, many of them neither "snappers" nor "groupers". These species live in depths from a few feet (typically as juveniles) to hundreds of feet. As far as north/south distribution, the more temperate species tend to live in the upper reaches of the South Atlantic management area (e.g., black sea bass, red porgy) while the tropical variety's core residence is in the waters off south Florida, Caribbean Islands, and northern South America (e.g., black grouper, mutton snapper).

These are reef-dwelling species that live amongst each other. These species rely on the reef environment for protection and food. There are several reef tracts that follow the southeastern coast. The fact that these fish populations congregate together dictates the nature of the fishery (multi-species) and further forms the type of management regulations proposed in this document.

Other snapper grouper species commonly taken with those directly affected by the actions proposed in this amendment could be affected by the action. Snapper grouper species most likely to be affected by

the proposed actions include species that occupy the same habitat at the same time (see **Section 3.2.1.2** for a list of the co-occurring species).

3.2.1.1 Gray Triggerfish

Gray triggerfish, *Balistes capriscus*, are found in the Eastern Atlantic from the Mediterranean to Moçamedes, Angola, and in the Western Atlantic from Nova Scotia to Bermuda, the northern Gulf of Mexico, and to Argentina. The gray triggerfish is associated with live bottom and rocky outcrops from nearshore areas to depths of 100 m (328 ft). It also inhabits bays, harbors, and lagoons, and juveniles drift at the surface with *Sargassum*. Maximum reported size is 60 cm (23.76 in) TL (male/unsexed) and 6.2 kg (13.8 lbs; Froese and Pauly 2003). Males are significantly larger than females (Moore 2001). The maximum age of gray triggerfish collected from North Carolina to eastern Florida was 10 years (Moore 2001). The maximum age of gray triggerfish collected from the Northeastern Gulf of Mexico was 13 years (Johnson and Saloman 1984). Potts and Brennan (2001) estimated the natural mortality of gray triggerfish to be 0.30. Gray triggerfish are gonochorists that exhibit nest-building and territorial reproductive behavior. Mature females from fishery-independent samples are found in 0% of age-0, 98 % of age-1 and age-2 fish, and 100% of fish older than age-3. Mature males from fishery-independent samples are present in 63% of age-1, 91% of age-2, 98% of age-3, 99% of age-4 and age-5, and 100% of older age fish. Females reach first maturity at 14.2 cm (5.6 in) FL, with an L50 of 15.8 cm (6.3 in) FL. Males first mature at 17.0 cm (6.7 in) FL, with a L50 of 18.0 cm (7.1 in) FL (Moore 2001).

Along the southeast United States, Moore (2001) determined that gray triggerfish spawn every 37 days, or 3-4 times per season. In contrast, Ingram (2001) estimated that gray triggerfish spawn every 3.7 days in the Gulf of Mexico. Off the southeast United States, female gray triggerfish are in spawning condition from April to August, with a peak of activity during June/July. Male gray triggerfish are found in spawning condition throughout the year; however, there is a peak in activity during May-September (Moore 2001).

Stock Status of Gray Triggerfish

Gray triggerfish is not assessed in the South Atlantic. A benchmark assessment for this species was begun in 2013 (SEDAR 32 2013). However, ageing inconsistencies in some of the datasets used in the assessment caused concern among the analysts and work on the assessment stopped. A new assessment is currently underway.

3.2.1.2 Other Affected Species

An expanded discussion of life history traits and population characteristics of snapper grouper species covered in Amendment 29 can be found in **Sections 3.2.1** and **3.3** of the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c), which are hereby incorporated by reference and may be found at http://safmc.net/Library/pdf/Comp%20ACL%20Am%20101411%20FINAL.pdf. The stock status of these species can be found in the Report to Congress on the Status of U.S. stocks at http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm. Descriptions of other South Atlantic

Council-managed species may be found in Volume II of the Fishery Ecosystem Plan (SAFMC 2009b) or at the following web address: http://safmc.net/ecosystem-management/fishery-ecosystem-plan-1.

3.2.2 Protected Species

There are 49 species, or distinct population segments (DPSs) of species, protected by federal law that may occur in the exclusive economic zone (EEZ) of the South Atlantic Region. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA) (Wynne and Schwartz 1999, Waring et al. 2013). The MMPA requires that each commercial fishery be classified by the number of marine mammals they seriously injure or kill. NMFS's List of Fisheries (LOF) classifies U.S. commercial fisheries into three categories based on the number of incidental mortality or serious injury they cause to marine mammals. More information about the LOF and the classification process can be found at: http://www.nmfs.noaa.gov/pr/interactions/lof/. Six of the marine mammal species (sperm, sei, fin, blue, humpback, and North Atlantic right whales) protected by the MMPA, are also listed as endangered under the Endangered Species Act (ESA). In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five DPSs of Atlantic sturgeon; and six species of coral [elkhorn coral (*Acropora palmata*), staghorn coral (*A. cervicornis*) ("*Acropora*" collectively); lobed star coral (*Orbicella annularis*), mountainous star coral (*O. faveolata*), and knobby star coral (*O. franksi*) ("*Orbicella*" collectively); and rough cactus coral (*Mycetophylia ferox*)] are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales, the Northwest Atlantic (NWA) DPS of loggerhead sea turtles, and *Acropora* corals occur within the South Atlantic Council's jurisdiction. NMFS has conducted specific analyses ("Section 7 consultations") to evaluate the potential adverse effects from the South Atlantic Snapper-Grouper Fishery on species and critical habitat protected under the ESA. Summaries of those consultations and their determination are in **Appendix E**. Those consultations indicate that of the species listed above, sea turtles and smalltooth sawfish are the most likely to interact with the snapper grouper fishery. The species potentially affected by the hook-and-line portion of the fishery are discussed below.

3.2.2.1 ESA-Listed Sea Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South Atlantic region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick (eds.) 1997, Lutz et al. (eds.) 2002).

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at

110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft.) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988, Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (Van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

Kemp's ridley hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 cm carapace length they move to relatively shallow (less than 50 m) benthic foraging habitat over unconsolidated substrates (Márquez-M. 1994). They have also been observed transiting long distances between foraging habitats (Ogren 1989). Kemp's ridleys feeding in these nearshore areas primarily prey on crabs, though they are also known to ingest mollusks, fish, marine vegetation, and shrimp (Shaver 1991). The fish and shrimp Kemp's ridleys ingest are not thought to be a primary prey item but instead may be scavenged opportunistically from bycatch discards or from discarded bait (Shaver 1991). Given their predilection for shallower water, Kemp's ridleys most routinely make dives of 50 m or less (Soma 1985, Byles 1988). Their maximum diving range is unknown. Depending on the life stage, a Kemp's ridleys may be able to stay submerged anywhere from 167 minutes to 300 minutes, though dives of 12.7 minutes to 16.7 minutes are much more common (Soma 1985, Mendonca and Pritchard 1986, Byles 1988). Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1,000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora et al. 1984, Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1986, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles eat a wide range of organisms including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads

reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1987). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764ft.) (Thayer et al. 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer et al. 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan et al. 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan et al. 1989).

3.2.2.2 ESA-Listed Marine Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. In the South Atlantic region, they are most commonly found in Florida, primarily off the Florida Keys (Simpfendorfer and Wiley 2004). Only two smalltooth sawfish have been recorded north of Florida since 1963 [the first was captured off North Carolina in 1963 and the other off Georgia in 2002 (National Smalltooth Sawfish Database, Florida Museum of Natural History)]. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 meters (Bigelow and Schroeder 1953, Adams and Wilson 1995), while mature animals occur in waters in excess of 100 meters (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food sources (Simpfendorfer 2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938, Bigelow and Schroeder 1953).

3.3 Socio-economic Environment

3.3.1 Economic Environment

3.3.1.1 Economic Description of the Commercial Sector

Snapper grouper fishery as a whole

The South Atlantic snapper grouper fishery is one of eight fisheries managed by the South Atlantic Council: coastal migratory pelagics, coral and live bottom habitat, dolphin and wahoo, golden crab, shrimp, snapper grouper, spiny lobster, and *Sargassum*. Three of the eight managed fisheries are comprised of finfish (coastal migratory pelagics, dolphin and wahoo, and snapper grouper) and three are shellfish (golden crab, shrimp, and spiny lobster). The snapper grouper fishery is the South Atlantic Council's only managed fishery with overfished stocks. According to the NMFS 2nd Quarter 2014 Update on stock status for FSSI stocks, three stocks within the snapper grouper fishery are overfished (red porgy, red snapper, and snowy grouper) and four were experiencing overfishing (gag, red snapper, speckled hind, and warsaw grouper). Gag was approaching an overfished condition. A 2013 assessment for gag indicates the stock is not overfished and is not undergoing overfishing.

Over the 5-year period from 2008 through 2012, commercial landings of the above six finfish and shellfish fisheries in the South Atlantic Region (North Carolina, South Carolina, Georgia, and Florida's East Coast) represented approximately 31% of all non-confidential commercial landings by weight (**Figure 3.3.1**) and 44% by dockside revenue (**Figure 3.3.2**) in the region. The shrimp fishery (brown, pink, rock, and white) ranked first in commercial landings by both weight and dockside revenue among the managed fisheries. From 2008 through 2012, shrimp accounted for approximately 18% of all commercial landings in the Region by weight and 27% by dockside revenue. Landings of the snapper grouper fishery accounted for approximately 4% of commercial landings by weight and 7% by dockside revenue over those five years. Among the six finfish and shellfish fisheries, the snapper grouper fishery ranked second in commercial landings by dockside revenue and third by weight during that period.

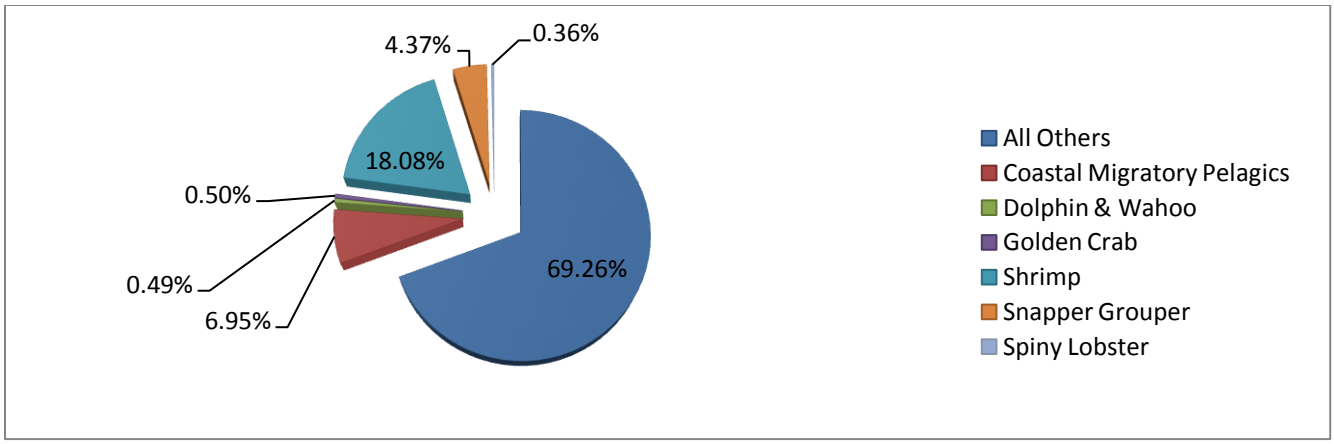

Figure 3.3.1. Percent of all commercial landings by fishery by weight (lbs ww) in South Atlantic Region from 2008-2012.
Source: NMFS ALS, confidential data excluded.

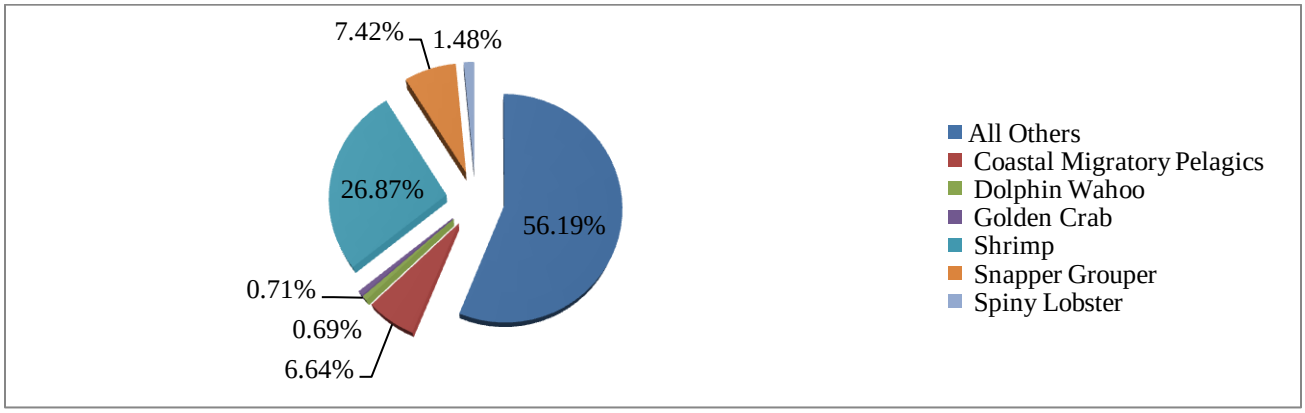

Figure 3.3.2. Percent of all commercial landings by dockside revenue (nominal dollars) in South Atlantic Region from 2008-2012.
Source: NMFS ALS, confidential data excluded.

Over the two 5-year periods from 2003 through 2007 and 2008 through 2012, the averages of annual commercial landings of snapper grouper species were approximately 6.79 million lbs ww and 7.29 million lbs ww, respectively (SERO ACL database). Although average annual commercial landings were higher in the second 5-year period, the range of annual commercial landings was lower from 2008 through 2012 than from 2003 through 2007 (**Figure 3.3.3**).

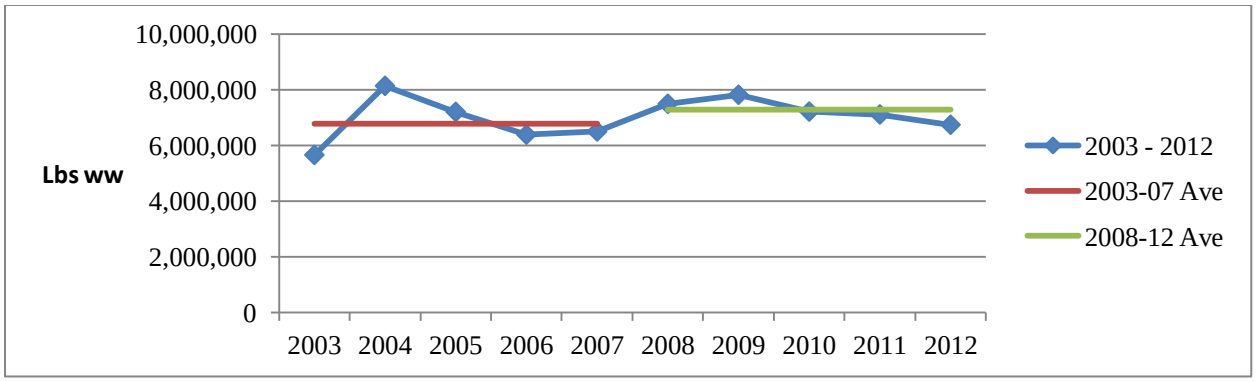

Figure 3.3.3. Annual commercial landings by weight (lbs ww) of snapper grouper species, 2003 – 2012. Source: SERO ACL.

Any commercial fishing vessel with landings of species within the snapper grouper fishery must have a valid commercial snapper grouper permit, which is a limited access permit for either an unlimited quantity of pounds per trip or up to 225 lbs per trip. The numbers of both valid unlimited and 225-lbs permits have declined annually since 2008 resulting in increased concentration of the commercial sector of the fishery (**Table 3.3.1**). These permits do not allow fishing for wreckfish. To commercially land wreckfish, a vessel must have a valid snapper grouper permit and wreckfish permit, and wreckfish permits are limited to those with shares of the wreckfish individual transferrable quota (ITQ).

Table 3.3.1. Numbers of valid South Atlantic commercial snapper grouper permits, 2007-2014.

Year	Valid permits		Change		% Change	
	Unlimited	225-lb	Unlimited	225-lb	Unlimited	225-lb
2007	695	165				
2008	665	151	-30	-14	-4.32%	-8.48%
2009	640	144	-25	-7	-3.76%	-4.64%
2010	624	139	-16	-5	-2.50%	-3.47%
2011	569	126	-55	-13	-8.81%	-9.35%
2012	558	123	-11	-3	-1.93%	-2.38%
2013	551	121	-7	-2	-1.25%	-1.63%
2014	541	109	-10	-12	-1.81%	-9.92%

Sources: SAFMC May 22, 2013 (SG Regulatory Amendment 19) for 2007-2013 and NMFS SERO PIMS for 2014 as of March 13.

The largest drop in the number of valid unlimited permits occurred in 2011. A partial explanation for that drop is that by 2011, there were many in-season closures for snapper grouper species, such as vermilion snapper, golden tilefish, and black sea bass, and longer seasonal closures for grouper species. Another explanation is the 2-for-1 permit transfer requirement. A vessel owner intending to obtain a commercial snapper grouper unlimited permit from a permit holder who is not in the vessel owner's immediate family must obtain and exchange two such permits for one permit to be issued. NMFS will transfer a single Snapper Grouper Unlimited permit only to the permit holder's immediate family (e.g., mother, father, brother, sister, son, daughter, or spouse). A transferred permit's catch history follows it to the new holder of or vessel with that permit, which can affect the perceived value of a permit.

During the first quarter of 2014, the total number of snapper grouper permits declined by two (**Table 3.3.2**). After a permit expires, it is not valid, but it can be renewed and transferred up to one year after it expires. Two 225-lbs permits were not renewed/transferred.

Table 3.3.2. Valid and renewable/transferrable South Atlantic commercial snapper grouper permits as of January 30, February 16, and March 13, 2014.

South Atlantic S-G Permits	Unlimited lbs			225 lbs			Total		
	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014	Jan. 30, 2014	Feb. 16, 2014	Mar. 13, 2014
Valid	547	547	541	117	112	109	664	659	650
Renewable/Transferrable	22	22	28	8	12	14	30	34	42
Total	569	569	569	125	124	123	694	693	692

Source: NMFS SERO PIMS.

The largest percentages of commercial snapper grouper permit holders reside in Florida (**Table 3.3.3**). Residents outside the South Atlantic States hold less than 2% of the permits.

Table 3.3.3. Number and percent of valid and renewable/transferable commercial snapper grouper permits by state of residence of permit holder as of February 16, 2014.

State	Unlimited permits		225-lbs permits	
	Number	%	Number	%
FL	394	69.2%	112	90.3%
GA	5	0.9%	0	0.0%
NC	114	20.0%	8	6.5%
SC	49	8.6%	2	1.6%
Other	7	1.2%	2	1.6%
Total	569	100.0%	124	100.0%

Source: NMFS SERO PIMS.

Approximately 30% of the vessels with a 225-lbs limit and 43% with an unlimited trip permit are US Coast Guard (USCG) documented, which is required for all fishing vessels that are five net tons or more. Approximately 81% of the documented vessels with a 225-lbs permit have a USCG hailing port in Florida and 94% of the undocumented vessels with a 225-lbs permit have Florida registration (**Table 3.3.4**). None of the vessels has a hailing port or registration in Georgia, and two have a hailing port/registration outside the South Atlantic States; however, that does not preclude those two vessels from landing catches in the Region. Moreover, vessels with a permit can catch snapper grouper species from the South Atlantic Council's area of jurisdiction and land that catch in states beyond the South Atlantic Region. The average net tonnage of a documented vessel with a 225-lbs permit is approximately 15. Documented vessels with a hailing port in Florida have the highest average net tonnage of 16, followed in turn by North Carolina's documented vessels with an average net tonnage of 13 and South Carolina's with an average of 11 net tons.

Table 3.3.4. Number of documented and undocumented fishing vessels with 225-lb trip limit permit as of February 16, 2014, by state of hailing port or vessel registration and total net tonnage of documented vessels.

State	Documented				Undocumented		All vessels	
	No. vessels	Total net tonnage	Percent of vessels	Percent of total net tonnage	No. vessels	Percent of vessels	All vessels	Percent all vessels
FL	30	484	81.1%	85.7%	82	94.3%	112	90.3%
NC	4	51	10.8%	9.0%	4	4.6%	8	6.5%
SC	2	21	5.4%	3.7%	0	0.0%	2	1.6%
VA	1	9	2.7%	1.6%	0	0	1	0.8%
NJ	0	0	0.0%	0.0%	1	1.1%	1	0.8%
Total	37	565	100.0%	100.0%	87	100.0%	124	100.0%

Source: SERO PIMS for vessels with permits and state of vessel registration, NMFS online USCG Vessel Documentation System for net tonnage and hailing port.

Approximately 43% of the vessels with an unlimited trip permit are USCG documented, and approximately 57% of those vessels have a USCG hailing port in Florida. Approximately 78%

of the undocumented vessels have Florida registration (**Table 3.3.5**). Three of the documented vessels have a hailing port and four undocumented vessels have registration outside the South Atlantic Region. The average net tonnage of a documented vessel with an unlimited weight permit is approximately 16. Within the South Atlantic States Region, documented vessels with a hailing port in Georgia have the highest average net tonnage of 21, followed in turn by South Carolina's documented vessels with an average net tonnage of 17, North Carolina's with an average of 16, and Florida with an average of 15 net tons.

Table 3.3.5. Number of documented and undocumented fishing vessels with an unlimited weight trip limit permit as of February 16, 2014, by state of hailing port or vessel registration and total net tonnage of documented vessels.

State	Documented				Undocumented		All vessels	
	No. vessels	Total net tonnage	Percent of vessels	Percent of total net tonnage	No. vessels	Percent of vessels	All vessels	Percent all vessels
FL	140	2,111	57.1%	53.6%	254	78.4%	394	69.2%
GA	5	107	2.0%	2.7%	0	0.0%	5	0.9%
MI	0	0	0.0%	0.0%	1	0.3%	1	0.2%
NC	58	935	23.7%	23.8%	56	17.3%	114	20.0%
NJ	1	81	0.4%	2.1%	1	0.3%	2	0.4%
NY	0	0	0.0%	0.0%	1	0.3%	1	0.2%
OH	0	0	0.0%	0.0%	1	0.3%	1	0.2%
SC	39	675	15.9%	17.1%	10	3.1%	49	8.6%
VA	2	27	0.8%	0.7%	0	0.0%	2	0.4%
Total	245	3,936	100.0%	100.0%	324	100.0%	569	100.0%

Source: SERO PIMS for vessels with permits and state of vessel registration, NMFS online USCG Vessel Documentation System for net tonnage and hailing port.

Any individual who purchases snapper grouper species harvested from federal waters of the South Atlantic must have a snapper grouper dealer permit, and as of April 8, 2014, there were 194 individuals with a (valid) snapper grouper dealer permit. This permit does not allow the holder to purchase wreckfish harvested from those waters. A dealer must have a wreckfish dealer permit to buy the species.

Species, species complexes, and groups within the snapper grouper fishery

The number of species within the snapper grouper fishery varied considerably from 2008 through 2012. There were 73 until 2011, then 60 in 2012 after 13 species were removed from the FMP: black margate, bluestriped grunt, crevalle jack, French grunt, grass porgy, porkfish, puddingwife, queen triggerfish, sheepshead, smallmouth grunt, Spanish grunt, tiger grouper, and yellow jack. In 2013, blue runner was removed. Consequently, there are currently 59 species within the fishery. Six of the 59 species are designated as ecosystem component species (cottonwick, bank sea bass, rock sea bass, longspine porgy, ocean triggerfish, and schoolmaster) and, as such, there are no ACLs or AMs that directly affect them.

The 59 species can be divided into 11 species groups: sea basses, (3 species), groupers (17 species), wreckfish (1 species), snappers (14 species), porgies (7 species), grunts (5 species), jacks (5 species), tilefishes (3 species), triggerfishes (2 species), wrasses (1 species), and spadefishes (1 species). The six ecosystem component species are found within the sea basses, grunts, jacks, snappers, and triggerfish groups.

Snappers and groupers are the top two groups by annual landings. From 2008 through 2012, they combined to represent 47% of non-confidential landings by weight and 64% by dockside revenue (**Figures 3.3.4** and **3.3.5**).

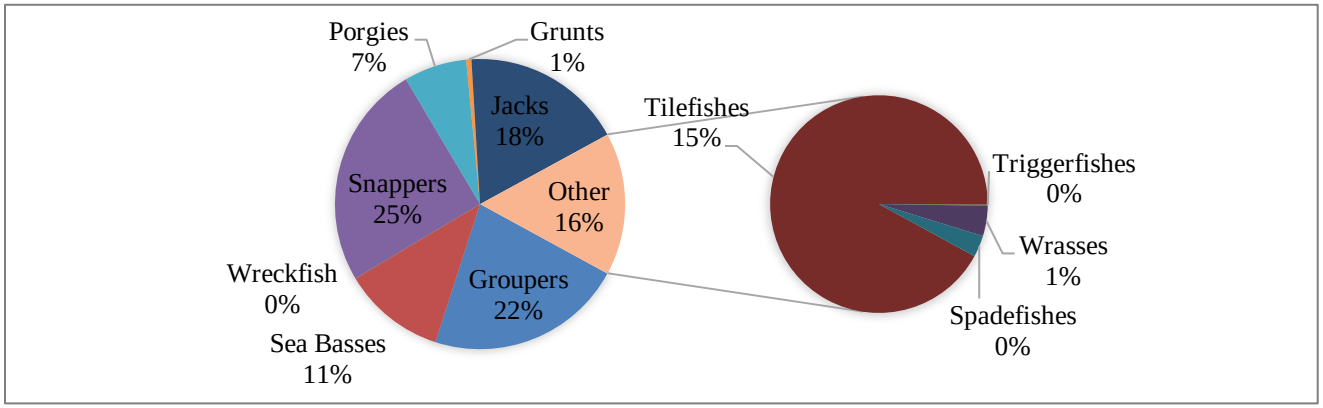

Figure 3.3.4. Percent of snapper grouper commercial landings (lbs ww) by species group, 5-year period from 2008-2012.
Source: NMFS ALS, excluding ecosystem component species and confidential data.

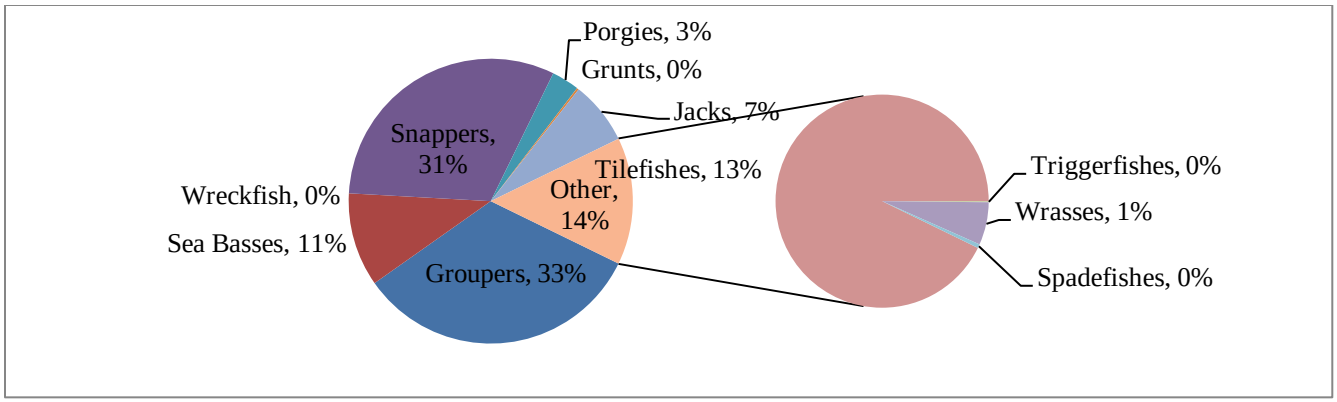

Figure 3.3.5. Percent of snapper grouper dockside revenue by species group, 5-year period from 2008-2012.
Source: NMFS ALS, excluding ecosystem component species and confidential data.

During varying years of the 10-year period from 2003 through 2012, seven snapper grouper stocks (black sea bass, snowy grouper, red grouper, red porgy, red snapper, black grouper, and golden tilefish) were overfished and had rebuilding plans. Ten stocks were undergoing overfishing (black sea bass, black grouper, vermilion snapper, red snapper, snowy grouper, golden tilefish, gag grouper, red grouper, speckled hind, and warsaw grouper) and multiple regulatory measures to end their overfishing were taken (NMFS OSF Status of U.S. Fisheries, 2003-2012). Among the most recent actions are the establishment of ACLs and AMs. The 53 regulated species comprise 28 species and species complexes, each subject to its own ACLs (**Table 3.3.6**). The Deepwater Complex, Grunts Complex, Jacks Complex, Porgies Complex, Shallow Water Grouper Complex, and Snappers Complex are composed of multiple species.

Actions 1-3 in this amendment affect four species and four species complexes: Atlantic spadefish, bar jack, Deepwater Complex, gray triggerfish, Grunts Complex, scamp, Shallow Water Grouper Complex, and Snappers Complex. Henceforth, the remainder of the description of the commercial sector focuses on these species and species complexes. Additional information on commercial landings and fishing for the snapper grouper fishery as a whole or the other groups within it can be found in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), Regulatory Amendment 9 (SAFMC 2011a), and Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c)] and is incorporated herein by reference.

Table 3.3.6. Snapper grouper species, species complexes, and current commercial ACLs.

Species	Species Complex	ACL	Units	Species	Species Complex	ACL	Units
Atlantic spadefish	Atlantic spadefish	35,108	ww	Jolthead porgy	Porgies	36,348	ww
Bar jack	Bar jack	5,265	ww	Knobbed porgy			
Black sea bass	Black sea bass	780,020	ww	Saucereye porgy			
Black snapper	Deepwater Complex[1]	376,469	ww	Scup			
Blackfin snapper				Whitebone porgy			
Blueline tilefish[1]				Red grouper	Red grouper	343,200	ww
Misty grouper				Red porgy	Red porgy	154,500	ww
Queen snapper				Red snapper[2]	Red snapper[2]	50,994	gw
Sand tilefish				Black grouper	Black grouper	96,844	ww
Silk snapper				Scamp	Scamp	333,100	ww
Yellowedge grouper				Coney	Shallow water grouper	49,776	ww
				Graysby			
Gag	Gag	326,722	gw	Red hind			
Golden tilefish	Golden tilefish (hook-n-line)	135,324	gw	Rock hind			
	Golden tilefish (longline)	405,971		Yellowfin grouper			
Goliath grouper	Goliath grouper	0	ww	Yellowmouth grouper			
Gray triggerfish	Gray triggerfish	272,880	ww	Cubera snapper	Snappers	215,662	ww
Greater amberjack	Greater amberjack	800,163	ww	Dog snapper			
Margate	Grunts	218,539	ww	Gray snapper			
Sailor's choice				Lane snapper			
Tomtate				Mahogany snapper			
White grunt				Snowy grouper	Snowy grouper	82,900	gw
Hogfish	Hogfish	49,469	ww	Speckled hind	Speckled hind	0	ww
Almaco jack	Jacks	189,422	ww	Vermilion snapper[3]	Vermilion snapper[3]	892,160	ww
Banded rudderfish				Warsaw grouper	Warsaw grouper	0	ww

Lesser amberjack				Wreckfish	Wreckfish	223,250	ww
Mutton snapper	Mutton snapper	157,743	ww	Yellowtail snapper	Yellowtail snapper	1,596,510	ww
Nassau grouper	Nassau grouper	0	ww				

[1] A temporary ACL is in place for blueline tilefish pending submission and approval of Amendment 32. The temporary commercial ACL for blueline tilefish is 112,207 lbs ww. The temporary commercial ACL for the Deepwater Complex, without blueline tilefish, is 60,371 lbs ww.
[2] The 2014 commercial ACL for red snapper is 50,994 lbs ww.
[3] The vermilion snapper commercial ACL is split into two 6-month quotas of 446,080 lbs ww.

Atlantic Spadefish

Atlantic spadefish is found offshore and in coastal hard bottom reef habitats and reefs. Although it is popular with anglers, Atlantic spadefish is not a commercially targeted species. When landed, it is bycatch from fishing for targeted species. From 2003 through 2012, annual landings ranged from about 23,000 to over 50,000 lbs ww and $7,963 to $14,299 ($2013) (**Figure 3.3.6**). All of the commercial landings of the species in the South Atlantic Region during the above 10-year period occurred in North Carolina and Florida's East Coast. The Atlantic spadefish season is from January 1 through December 31.

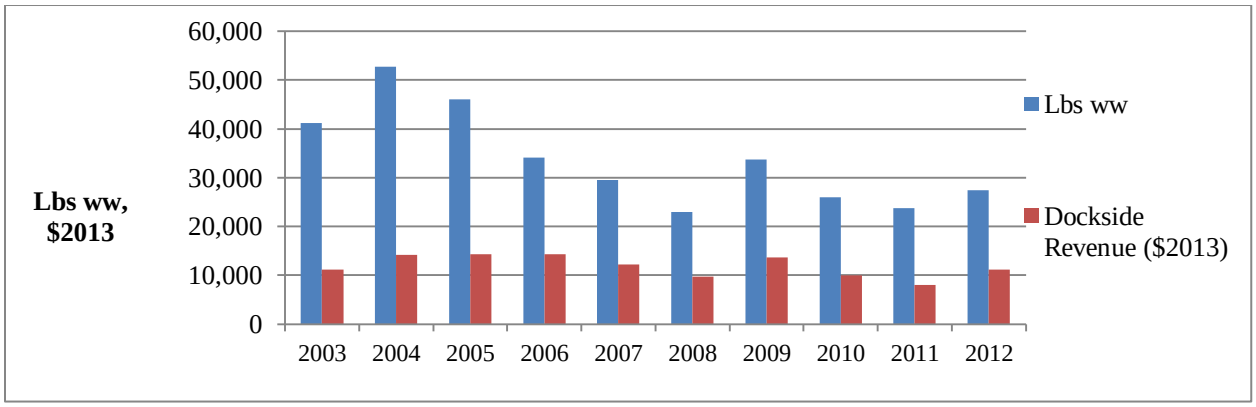

Figure 3.3.6. Annual commercial landings (lbs ww and $2013) of Atlantic spadefish, 2003-2012. Source: SERO ACL.

The commercial ACL for Atlantic spadefish was 36,476 lbs ww in 2012 and 27,416 lbs ww were landed that year. In 2013, the commercial ACL was 35,108 lbs ww and preliminary commercial landings figures indicate less than 4,000 lbs ww were landed last year. The current commercial ACL for Atlantic spadefish is 35,108 lbs ww and preliminary landings as of April 8, 2014, are 307 lbs ww. At that rate, commercial landings of Atlantic spadefish will be less than its ACL from 2012 through 2014.

Bar Jack

Bar jack is not a commercially targeted species and its landings are relatively low by comparison with other snapper grouper species. Florida's East Coast accounted for all of the landings from 2003 through 2012 (NMFS ALS, excluding confidential data). From 2003 through 2012, annual landings varied from 3,037 to 7,830 lbs ww and $3,794 to $10,314 ($2013), while averaging 5,027 lbs ww and $6,239 from 2003 through 2007 and $4,125 lbs ww and $5,017 from 2008 through 2012 (**Figure 3.3.7**).

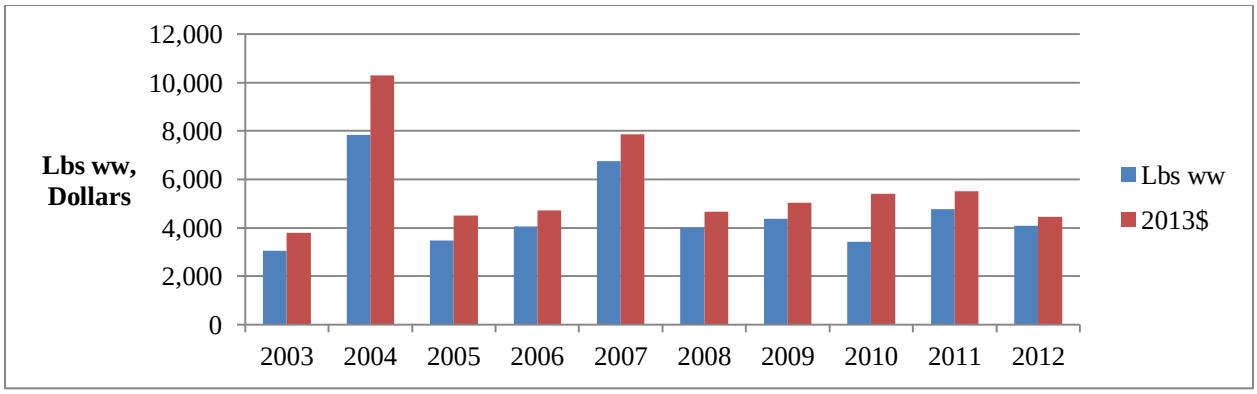

Figure 3.3.7. Annual commercial landings of bar jack, 2003-2012.
Source: SERO ACL.

The bar jack fishing season is from January 1 through December 31. In 2012, the commercial ACL was 6,686 lbs ww, while annual commercial landings were 4,072 lbs ww. Preliminary figures for 2013 indicate commercial landings exceeded the ACL of 5,265 by 985 lbs ww. Because bar jack is not overfished, its commercial ACL was not reduced in 2014 and is currently 5,265 lbs ww. As of April 8, 2014, preliminary commercial landings were 1,855 lb. If that rate continues, the commercial landings of bar jack would reach the ACL by October 6, 2014.

Deepwater Complex

Eight species comprise the Deepwater Complex: two species of groupers (misty grouper and yellowedge grouper), four species of snappers, (black snapper, blackfin snapper, queen snapper, and silk snapper) and two species of tilefishes (blueline tilefish and sand tilefish). However, a temporary rule (79FR 21636) removed blueline tilefish from the complex from April 17, 2014 through October 14, 2014. Amendment 32 to the Snapper Grouper FMP (under development) would permanently remove it from the complex. Consequently, the following description of the complex shows commercial landings of the complex with and without blueline tilefish.

Blueline tilefish comprised the majority of annual commercial landings of the Deepwater Complex from 2003 through 2012 and its landings and share increased significantly after 2007 (**Figure 3.3.8**). From 2003 through 2007, average annual landings of blueline tilefish represented approximately 67% of average annual landings (lbs ww) of the complex and approximately 91% from 2008 through 2012. The average of annual commercial landings of the complex from 2008 through 2012 with blueline tilefish is 405,540 lbs ww and without, it is 36,164 lbs ww.

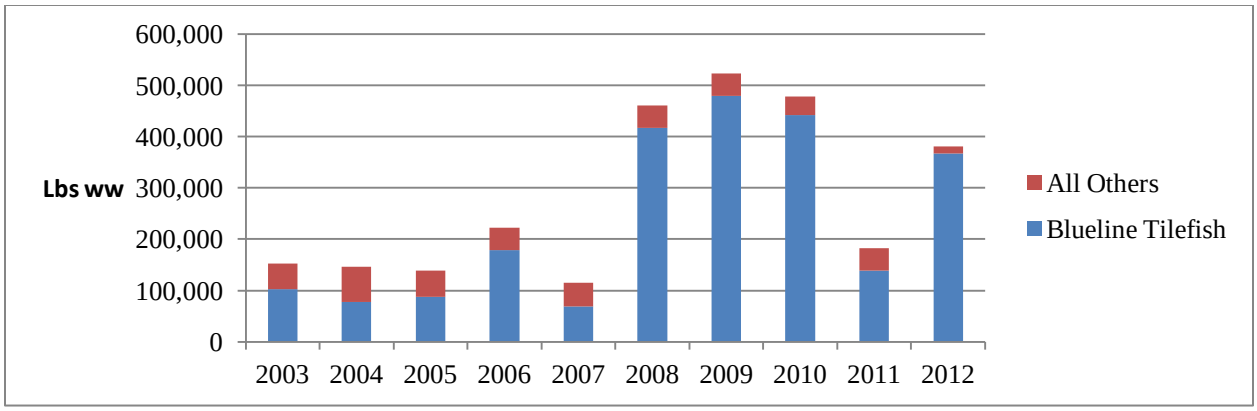

Figure 3.3.8. Annual commercial landings of the deepwater complex, 2003 – 2012, with and without blueline tilefish.
Source: SERO ACL.

From 2003 through 2012, dockside revenue ($2013) varied from approximately $0.28 million to $1.06 million with blueline tilefish landings and from $0.04 million to $0.22 without (**Figure 3.3.9**). Average annual dockside revenue during the first 5-year period (2003-2007) was approximately $0.34 million (2013 $) with blueline tilefish and approximately $0.17 without. Average annual dockside value during the second 5-year period (2008 – 2012) was approximately $0.85 million ($2013) with blueline tilefish and $0.12 million without.

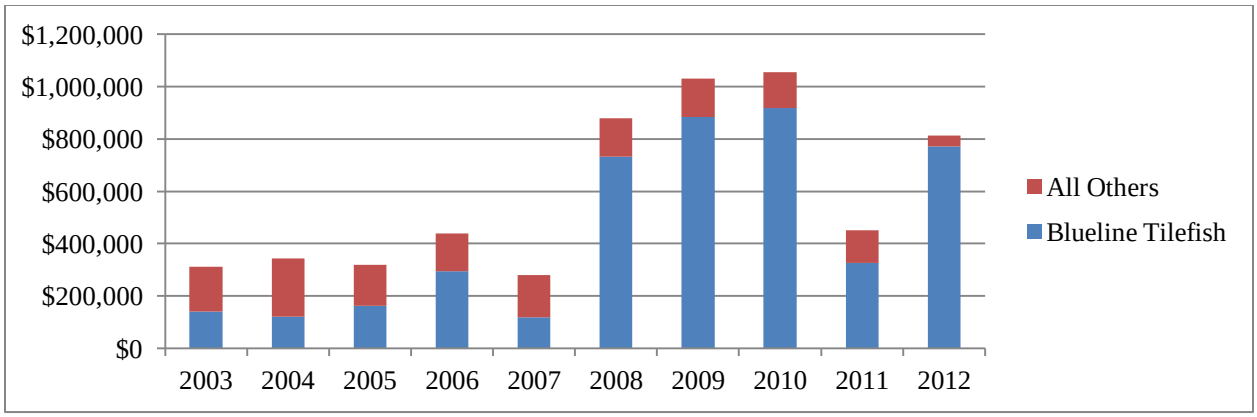

Figure 3.3.9. Annual dockside revenue (2013 $) from deepwater complex landings, 2003-2012.
Source: SERO ACL.

Results of the 2013 stock assessment for blueline tilefish (SEDAR 32 2013) indicate the stock is experiencing overfishing and is overfished according to the current definition of the minimum stock size threshold. Consequently, the recent temporary rule established a commercial ACL for blueline tilefish of 112,207 lbs ww and a commercial ACL for the revised (all but blueline tilefish) Deepwater Complex of 60,371 lbs ww. If commercial landings of

blueline tilefish in 2014 exceed the ACL, the commercial ACL would be reduced in 2015. From 2003 through 2012, combined commercial landings of the other species within the Deepwater Complex only once exceeded 60,371 lbs ww and that occurred in 2004. The annual average landings from 2008 through 2012 is substantially less than that.

3.3.1.4 Gray Triggerfish

Like blueline tilefish, gray triggerfish had increasing commercial landings from 2003 through 2012. The average of annual commercial landings was 262,064 lbs ww worth $395,383 ($2013) from 2003 through 2007 and 403,139 lbs ww and $724,837 from 2008 through 2012 (**Figures 3.3.10** and **3.3.11**). Although there were landings in Virginia during those 10 years, essentially all commercial landings were in the South Atlantic States.

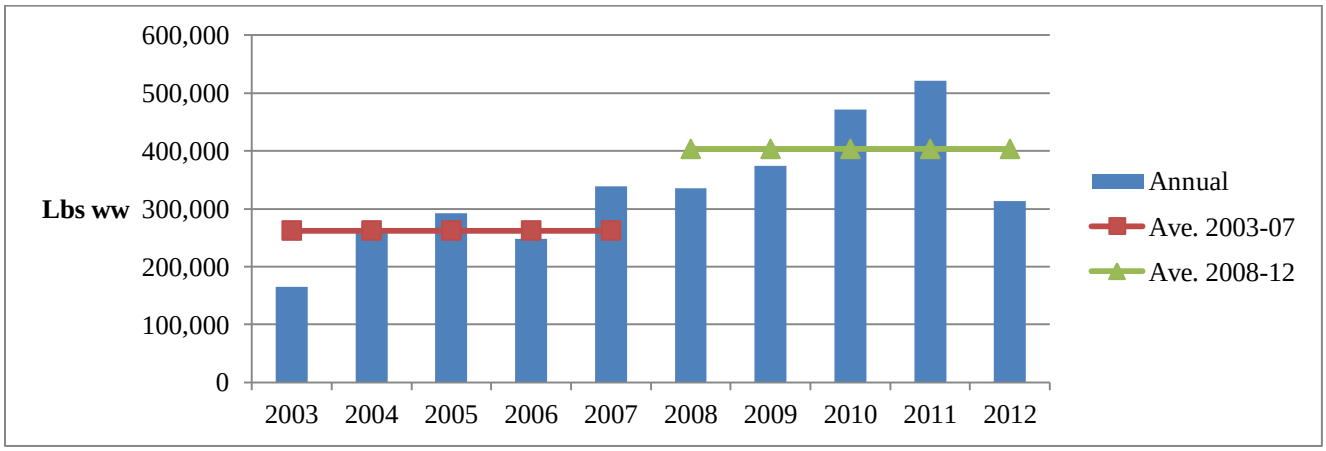

Figure 3.3.10. Annual and average annual commercial landings (lbs ww) of gray triggerfish, 2003-2012.
Source: SERO ACL.

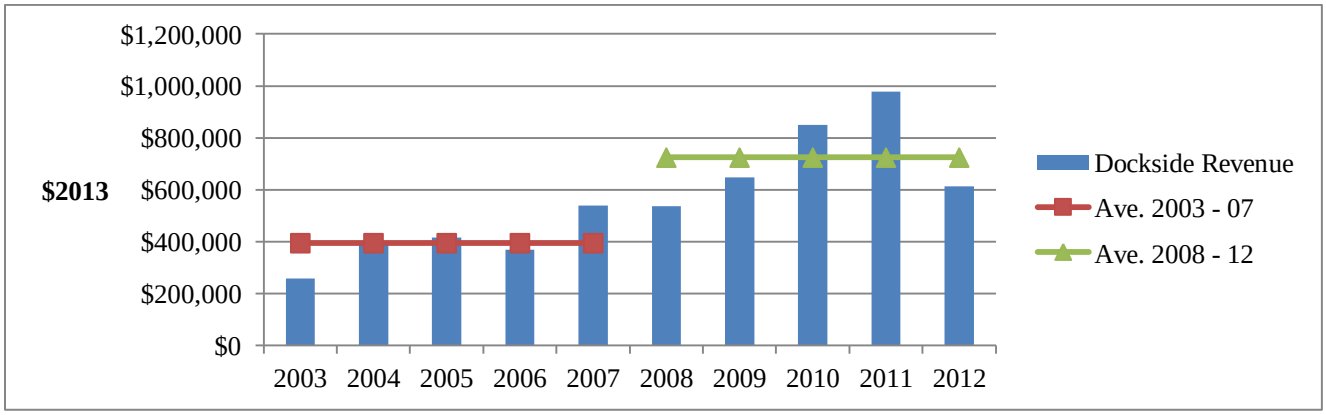

Figure 3.3.11. Annual and average annual commercial dockside revenue ($2013) from gray triggerfish landings, 2003-2012.
Source: SERO ACL.

Currently, the commercial season is from January 1 through December 31 and is open until landings reach or are projected to reach the ACL. In 2012, the commercial season was closed on September 11, but then it was reopened from December 12 through 19. The commercial ACL at that time was 305,262 lbs ww. The commercial ACL was reduced to 272,880 lbs ww in 2013 and the season closed on July 7. The current commercial ACL is the same as last year. As of April 8, 2014, preliminary data indicate 174,496 lbs ww have been landed this year. At that rate, approximately 1,781 lbs ww was landed daily, and if that daily rate continues, the season would close on June 2.

North Carolina ranked first in commercial landings from 2003 through 2012 with from approximately 42% to 71% of annual landings (lbs ww). From 2008 through 2012, it accounted for approximately 51% of average annual landings (**Figure 3.3.12**). South Carolina ranked second with Florida closely behind in third.

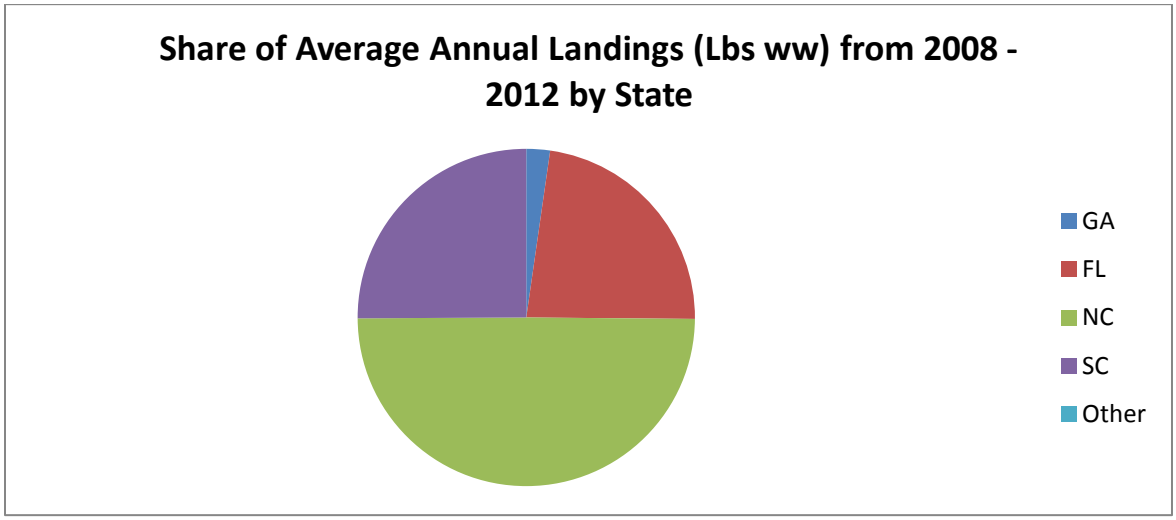

Figure 3.3.12. Share of average annual commercial landings (lbs ww) by state, 2008 – 2012. Source: SERO ACL.

Grunts Complex

The Grunts Complex is composed of white grunt, margate, sailor's choice, and tomtate. Unlike blueline tilefish and gray triggerfish, commercial landings of the Grunts Complex by weight and value declined from 2003 through 2012 (**Figure 3.3.13**). The annual averages from 2003 through 2007 were 195,375 lbs ww and $216,232 and 130,444 lbs ww and $142,057 from 2008 through 2012.

Less than 50% of the commercial ACL was landed in 2012 and 2013. The current commercial ACL is 218,539 lbs ww. As of April 8, 2014, preliminary landings data indicate less than 8% of the current ACL has been landed. At that rate, 2014 commercial landings will be less than the commercial ACL.

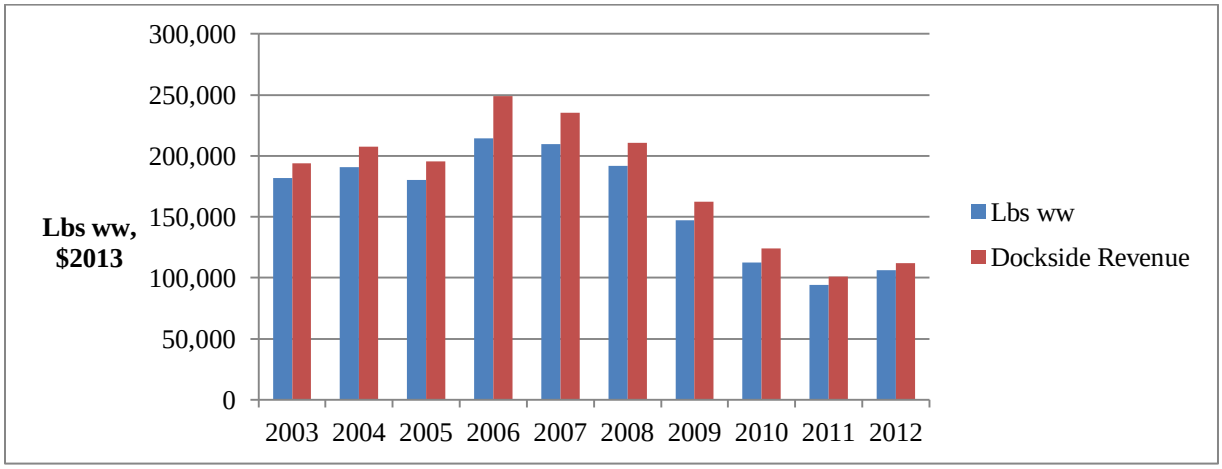

Figure 3.3.13. Annual commercial landings (lbs ww and $2013) of grunts complex, 2003-2012. Source: SERO ACL.

Scamp

Commercial landings of scamp by weight and value showed a general decline over the 10-year period from 2003 through 2012 (**Figures 3.3.14** and **3.3.15**). An average of 322,615 lbs ww with a dockside value of approximately $1.32 million ($2013) was landed annually from 2003 through 2007. That average fell to 222,044 lbs ww with a dockside value of approximately $0.96 million from 2008 through 2012.

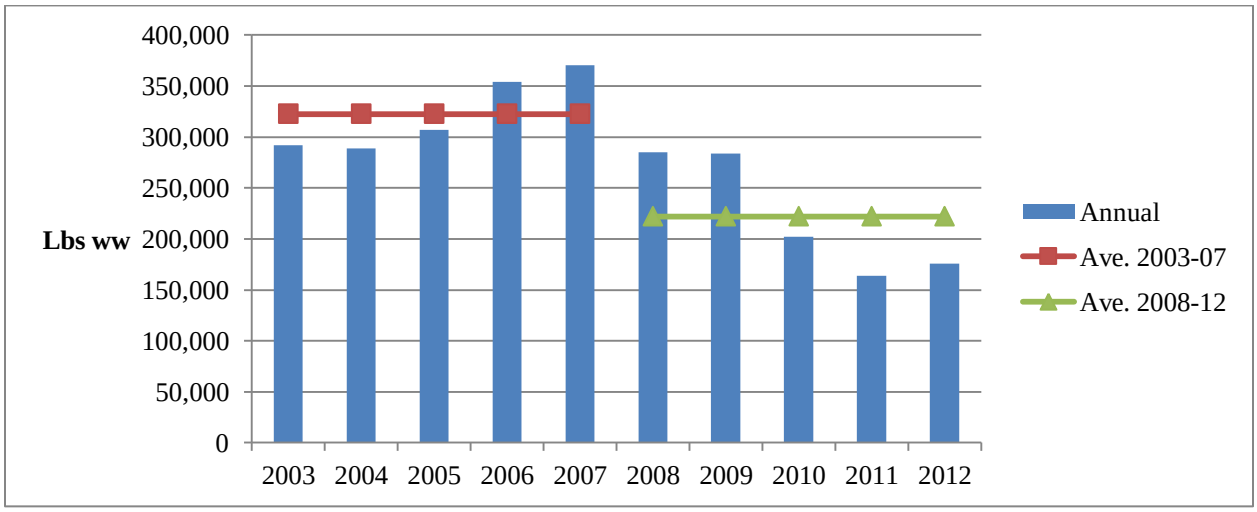

Figure 3.3.14. Annual and average annual commercial landings (lbs ww) of scamp, 2003-2012. Source: SERO ACL.

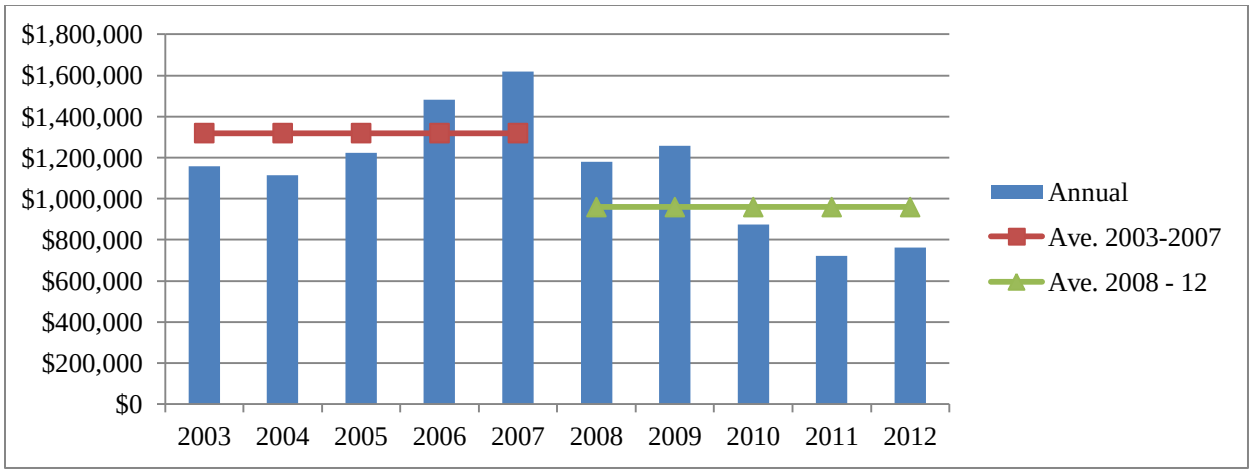

Figure 3.3.15. Annual and average annual dockside revenue ($2013) from scamp landings, 2003 – 2012.
Source: SERO ACL.

Scamp is a shallow water grouper species and its season is closed from January 1 through April each year. Moreover, in 2012, when the gag season closed, the Shallow Water Grouper Complex and scamp seasons closed as well. In 2012, the commercial season closed on October 20 and was reopened from November 13 through 21, not because commercial landings of scamp reached or exceeded the commercial ACL, but because gag landings were reaching its commercial ACL. Commercial landings of scamp in 2013 were approximately 39% of its ACL last year. The current commercial ACL is 333,100 lbs ww.

Shallow Water Grouper

The Shallow Water Grouper Complex is composed of six species: coney, graysby, red hind, rock hind, yellowfin grouper, and yellowmouth grouper. Annual commercial landings (lbs ww and $2013) from 2003 through 2012 show a generally decreasing trend (**Figures 3.3.16** and **3.3.17**). An average of 48,841 lbs ww with a value of $187,665 ($2013) was landed annually from 2003 through 2007. That average fell to 29,902 lbs ww and $118,055 from 2008 through 2012.

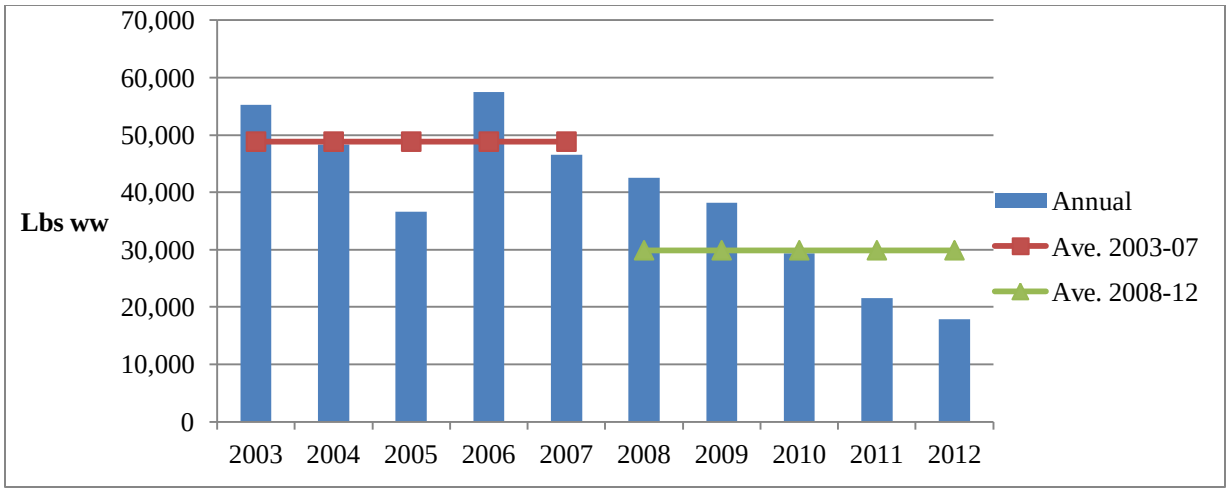

Figure 3.3.16. Annual and average annual commercial landings of shallow-water grouper complex, 2003-2012.
Source: SERO ACL.

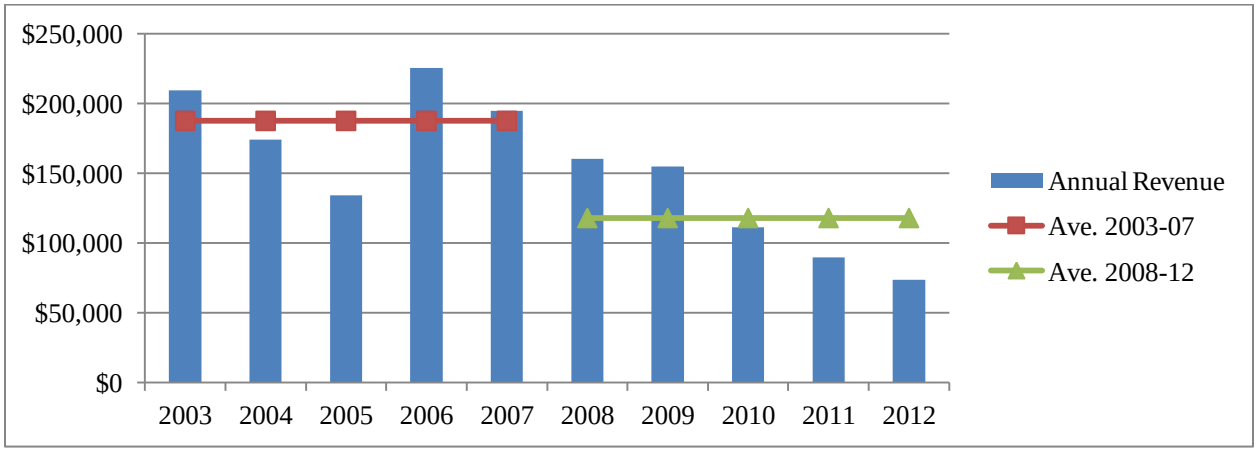

Figure 3.3.17. Annual and average annual dockside revenue ($2013) from commercial landings of shallow water grouper complex, 2003-2012.
Source: SERO ACL.

The Shallow Water Grouper Complex season is closed from January 1 through April each year. In 2012, the season closed on October 20th and was reopened from November 13th through 21st when the gag season closed and reopened. Approximately 36% of the commercial ACL was landed in 2012 and in 2013 approximately 39% of the commercial ACL of 49,776 lbs ww was landed that year. The current commercial ACL is the same as last year: 49,766 lbs ww.

Snappers

The Snappers Complex is composed of five species: gray, lane, cubera, dog, and mahogany snapper. Annual commercial landings from 2003 through 2012 varied from 90,359 lbs ww to 205,393 lbs ww and $220,974 to $514,163 ($2013) and showed a generally decreasing trend (**Figures 3.3.18** and **3.3.19**). The annual average was 145,517 lbs ww with a value of $360,500 ($2013) from 2003 through 2007, then 123,346 lbs ww with a value of $284,699 from 2008 through 2012.

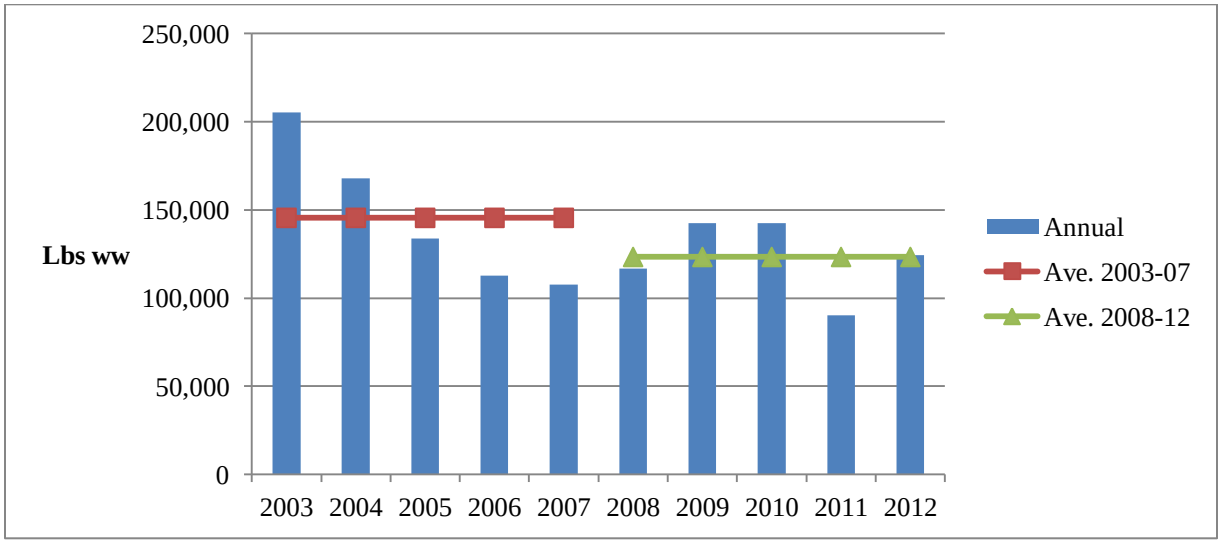

Figure 3.3.18. Annual and average commercial landings (lbs ww) of snappers complex, 2003-2012.
Source: SERO ACL.

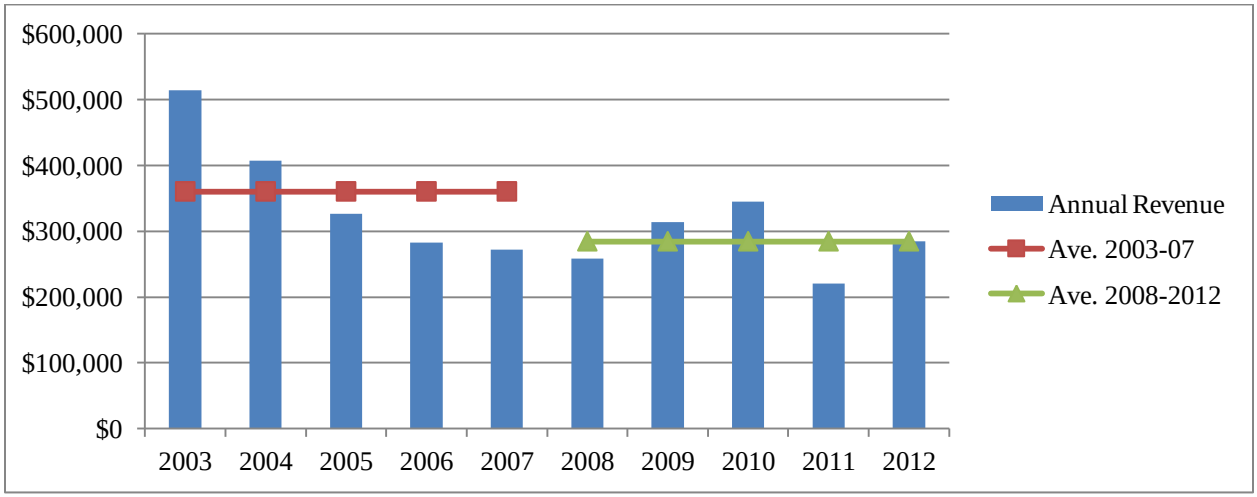

Figure 3.3.19. Annual and average dockside revenue ($2013) from commercial landings of snappers complex, 2003-2012.
Source: SERO ACL.

In 2012 and 2013, commercial landings reached between 61% and 62% of the commercial ACL for the year. The current ACL is 215,662 lbs ww, which is less than annual landings for any year during the 10-year period. Preliminary landings data indicates 9,263 lbs ww were landed as of April 8, 2014. At that rate, approximately 34,500 lbs ww would be landed by December 31, which is substantially less than the commercial ACL.

3.3.1.2 Economic Description of the Recreational Sector

A description of the recreational component of the snapper grouper fishery is contained in the Comprehensive ACL Amendment (SAFMC 2011c) and Snapper Grouper Regulatory Amendment 10 (SAFMC 2010c) and is incorporated herein by reference. The following is a brief summary and updated information, where available.

Amendment 17B (SAFMC 2010b) reported that recreational snapper grouper landings in the South Atlantic averaged approximately 10.8 million pounds (mp) per year during 2005-2009. Private boat anglers accounted for the largest landings, accounting for approximately 6.1 mp, followed by shore anglers (1.7 mp), charter anglers (1.6 mp), and headboat anglers (1.4 mp). In 2010-2011, recreational snapper grouper landings averaged approximately 11.8 mp annually, with 6.7 mp contributed by the private sector, 2.7 mp by the shore sector, 1.2 mp by the charter sector and 1.2 mp by headboats.

Recreational effort derived from the Marine Recreational Fisheries Statistics Survey (MRFSS)/Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

1. Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or the second primary target for the trip. The species did not have to be caught.
2. Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
3. Total recreational trips - The total estimated number of recreational trips in the South Atlantic, regardless of target intent or catch success.

Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b) reported that, over the years 2005-2009, an average of approximately 945,000 individual angler trips per year targeted snapper grouper species across all modes and states in the South Atlantic, or approximately 4% of all recreational shore, charter, and private angler trips. Snapper grouper target effort was highest in Florida, approximately 694,000 trips per year, and in the private mode, approximately 626,000 trips per year. In 2010-2011, total angler target trips for snapper grouper dropped to about 826,000 per year. This still comprised about 4% of all recreational shore, charter, and private angler trips. Florida accounted for the highest number of target trips at about 579,000

trips and the private mode accounted for the highest number of target trips at 592,000 trips. For the most recent five years (2007-2011), total target effort for snapper grouper in the South Atlantic averaged 906,106 trips annually.

Substantially more recreational trips catch snapper grouper species than target these species. Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a) reported that during 2003-2008 an average of approximately 3.5 million individual angler trips in just the shore, private boat, and charter modes caught snapper grouper each year. Over 80% of these trips occurred off Florida. In 2009-2011, an average of about 2.8 million angler trips in the shore, private, and charter modes caught snapper grouper, with about 76% occurring off Florida. In 2005-2009, recreational catch effort for snapper grouper in the South Atlantic averaged approximately 2.7 million trips per year. The corresponding average catch effort for the most recent five years (2007-2011) is 3.3 million trips per year.

Similar analysis of recreational effort is not possible for the headboat sector because headboat data are not collected at the angler level. Estimates of effort in the headboat sector are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. Despite the inability to associate headboat effort with specific species, the stationary bottom nature of headboat fishing, as opposed to trolling, suggests that most headboat trips and, hence, angler days, are snapper grouper trips by intent. Amendment 17B (SAFMC 2010b) reported that over the years 2005-2009, an average of approximately 225,000 angler trips were taken each year in the South Atlantic. The majority of these trips, approximately 153,000 trips per year, were taken in Georgia-Florida (Georgia is combined with Florida because of confidentiality considerations). In 2010-2011, anglers in the South Atlantic took an average of 188,000 trips. Georgia-Florida, with an average of about 144,000 trips, accounted for most of the trips.

Amendment 17A (SAFMC 2010a) reported an average of 1,811 snapper grouper for-hire permits in the South Atlantic for the period 2003-2008. In 2009-2010, South Atlantic snapper grouper for-hire permits averaged 1,953. In both periods, most permit holders listed Florida as their homeport state. For-hire permits do not distinguish charterboats from headboats. Based on a 1997 survey, Holland et al. (1999) estimated that a total of 1,080 charter vessels and 96 headboats supplied for-hire services in all South Atlantic fisheries during 1997. By 2010, the estimated number of headboats supplying for-hire services in all South Atlantic fisheries had fallen to 85, indicating a decrease in fleet size of approximately 11% between 1997 and 2010 (K. Brennan, Beaufort Laboratory, Southeast Fisheries Science Center (SEFSC), personal communication, Feb. 2011). According to the Southeast Regional Office Website, the Constituency Services Branch (Permits) unofficially listed 1,407 current holders of South Atlantic for-hire snapper grouper permits as of January 22, 2014.

Participation, effort, and landings are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is the satisfaction that anglers experience over and above their costs of fishing. The monetary value of this satisfaction is referred to as consumer surplus. The value or benefit derived from the recreational experience is dependent on several

quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips.

Amendments 17A (SAFMC 2010a) and 17B (SAFMC 2010b) contain discussions on estimates of the consumer surplus (CS) associated with fishing for snapper grouper derived from different studies, including Haab et al. (2009), Dumas et al. (2009), and NMFS (2009). The estimated CS per snapper grouper (individual fish) used in the analysis of the expected effects of the management changes proposed in Amendment 17A was $80 in 2009 dollars, or $82.64 in 2011 dollars. More recently, Carter and Liese (2012) estimated CS values for various species. This estimate was specifically developed for use when management measures changed the recreational ACL, which is typically measured in pounds. That estimate was $10.93 per pound in 2009 dollars, which is $11.42 in 2011 dollars.

While anglers receive economic value as measured by the consumer surplus associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus is the measure of the economic value these operations receive. Producer surplus is the difference between the revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the producer surplus associated with for-hire trips are not available. However, proxy values in the form of net operating revenue are available (David Carter, NMFS SEFSC, personal communication, August 2010). These estimates were culled from several studies – Liese et al. (2009), Dumas et al. (2009), Holland et al. (1999), and Sutton et al. (1999). Amendment 17A utilized a value of $128 (2009 dollars), or $132 in 2011 dollars, per charter angler trip to assess the expected change in net operating revenue (NOR) of the proposed management changes on charter vessels. Since NOR from the harvest of a particular species is only attributed to trips targeting that species, NOR per year from trips targeting yellowtail snapper is estimated to have been approximately $113,800 on average for charter vessels between 2007 and 2011. In a more recent study, Holland et al. (2012) reported that charter vessels in the South Atlantic had average revenue of approximately $106,000 per vessel in 2009.

NOR per angler trip is lower for headboats than for charterboats. NOR estimates for a representative headboat trip are $48 in the Gulf of Mexico (all states and all of Florida), and $63-$68 in North Carolina. For full-day and overnight headboat trips, NOR are estimated to be $74-$77 in North Carolina. Comparable estimates are not available for Georgia and South Carolina. Amendment 17A (SAFMC 2010a) utilized a value of $68 (2009 dollars) per headboat angler trip to assess the expected change in net operating revenue of the proposed management changes on headboat vessels. Since target effort by headboat vessels cannot be estimated for specific species. Holland et al. (2012) reported that headboats in the South Atlantic had average revenue of approximately $188,000 per vessel in 2009. Holland et al. (2012) also report that, in 2009, no charter vessels earned more than $500,000 in gross revenues.

These value estimates should not be confused with angler expenditures or the economic activity (impacts) associated with these expenditures. While expenditures for a specific good or

service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

Estimates of the economic impacts (business activity) associated with the recreational snapper grouper fishery were derived using average output (sales) and job (FTE) impact coefficients for recreational angling across all fisheries (species), as derived by an economic add-on to the Marine Recreational Fisheries Statistical Survey (MRFSS), and described and utilized in USDOC (2009). Estimates of the average expenditures by recreational anglers are provided in USDOC (2009) and are incorporated herein by reference.

Because the headboat sector in the Southeast is not covered in the MRFSS, the results do not include estimates of the business activity associated with headboat anglers. Although estimates of the business activity associated with the headboat sector were provided in Amendment 17A, these estimates were based on the model parameters appropriate for the charterboat sector, which are higher than would be expected for the headboat sector because of higher fees charged by charter vessels and other factors discussed in Amendment 17A. As a result, these estimates are not repeated here and updated. More appropriate estimates of the business activity associated with the headboat component of the snapper grouper fishery are not available.

3.3.2 Social Environment

This section includes a description of the commercial and recreational components of select unassessed snapper grouper species including Atlantic spadefish, bar jack, blue runner, cubera snapper, gray snapper, gray triggerfish, lane snapper, margate, red hind, rock hind, scamp, silk snapper, tomtate, yellowedge grouper, and white grunt. The description is based on the geographical distribution of landings and the relative importance of the species for commercial and recreational communities. A spatial approach enables the consideration of fishing communities and the importance of fishery resources to those communities, as required by National Standard 8.

Because so many communities in the South Atlantic benefit from snapper grouper fishing, a discussion of the communities most involved in South Atlantic fishing, is included in **Section 3.8.3.3** of the Comprehensive ACL Amendment (SAFMC 2011c), which is hereby incorporated by reference. Detailed information is included on the importance of individual commercial species to each community and can be partnered with the following narrative to provide an understanding of the dependence by communities on the included snapper grouper species. A description of the social environment of the snapper grouper fishery is included in **Section 3.8.4** of the Comprehensive ACL Amendment and is also incorporated by reference. The Comprehensive ACL Amendment may be found at: http://www.safmc.net/LinkClick.aspx?fileticket=OlK4OjG54Vs%3d&tabid=415.

A description of the social environment of snapper grouper species complexes and individual species including figures showing the spatial distribution of commercial landings is included in Regulatory Amendment 13 (SAFMC 2013a) and is included by reference. In addition, detailed descriptions of fishing communities in the South Atlantic (including community demographics, fishing demographics, fishing employment, and fishing permits) are included in Jepson et al. (2005), which is incorporated herein by reference. The majority of the communities highlighted below as being the most involved in fishing for unassessed snapper grouper species are described in detail in Jepson et al. (2005).

Social Importance of Fishing

Socio-cultural values are qualitative in nature making it difficult to measure social valuation of marine resources and fishing activity. The following description includes multiple approaches to examining fishing importance. These spatial approaches focus on the community level (based on the address of dealers) and identify importance by "community", defined according to geo-political boundaries (cities). A single county may thus have several communities identified as reliant on fishing. Furthermore, while commercial fishing data are available at the species level, these data are not available for recreational fishing, which must be addressed more generally.

To identify communities with the greatest commercial reliance, an approach called the regional quotient (rq) was utilized. The rq is a way to measure the relative importance of a given species across all communities in the region and represents the proportional distribution of commercial landings of a particular species. This proportional measure does not provide the number of pounds or the value of the catch data, which might be confidential at the community level for many places. The rq is calculated by dividing the total pounds (or value) of a species landed in a given community, by the total pounds (or value) for that species for all communities in the region.

In addition to examining the regional quotients to understand how communities are engaged and reliant on fishing, and specifically on select unassessed snapper grouper species, indices were created using secondary data from permit and landings information for the commercial sector and permit information for the recreational sector (Jepson and Colburn 2013). Fishing engagement is primarily the absolute numbers of permits, landings, and value. For commercial fishing, the analysis used the number of vessels designated commercial by homeport and owner address, value of landings, and total number of commercial permits for each community. Recreational fishing engagement is represented by the number of recreational permits and vessels designated as recreational by homeport and owners address. Fishing reliance includes the same variables as fishing engagement divided by population to give an indication of the per capita influence of this activity.

Using a principal component and single solution factor analysis, each community receives a factor score for each index to compare to other communities. Taking the communities with the highest regional quotients, factor scores of both engagement and reliance for both commercial and recreational fishing were plotted. Two thresholds of one and ½ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. The factor

scores are standardized, therefore, a score above 1 is also above one standard deviation. A score above ½ standard deviation is considered engaged or reliant with anything above 1 standard deviation to be very engaged or reliant.

The reliance index uses factor scores that are normalized. The factor score is similar to a z-score in that the mean is always zero and positive scores are above the mean and negative scores are below the mean. Comparisons between scores are relative but one should bear in mind that like a z-score the factor score puts the community on a spot in the distribution. Objectively they have a score related to the percent of communities with those similar attributes. For example, a score of 2.0 means the community is two standard deviations above the mean and is among the 2.27% most vulnerable places in the study (normal distribution curve). Reliance score comparisons between communities are relative. However, if the community scores greater than two standard deviations above the mean, this indicated that the community is dependent on the species. Examining the component variables on the reliance index and how they are weighted by factor score provides a measurement of commercial reliance. The reliance index provides a way to gauge change over time in these communities and also provides a comparison of one community with another.

These measures are an attempt to quantify the importance of the components of the included fisheries to communities around the South Atlantic coast and suggest where impacts from management actions are more likely to be experienced.

Figures 3.3.20-3.3.22 show the top communities in Florida, South Carolina and North Carolina for relative levels of recreational and commercial engagement and reliance for select unassessed snapper grouper species affected by this amendment. These figures will be referenced in the discussions below.

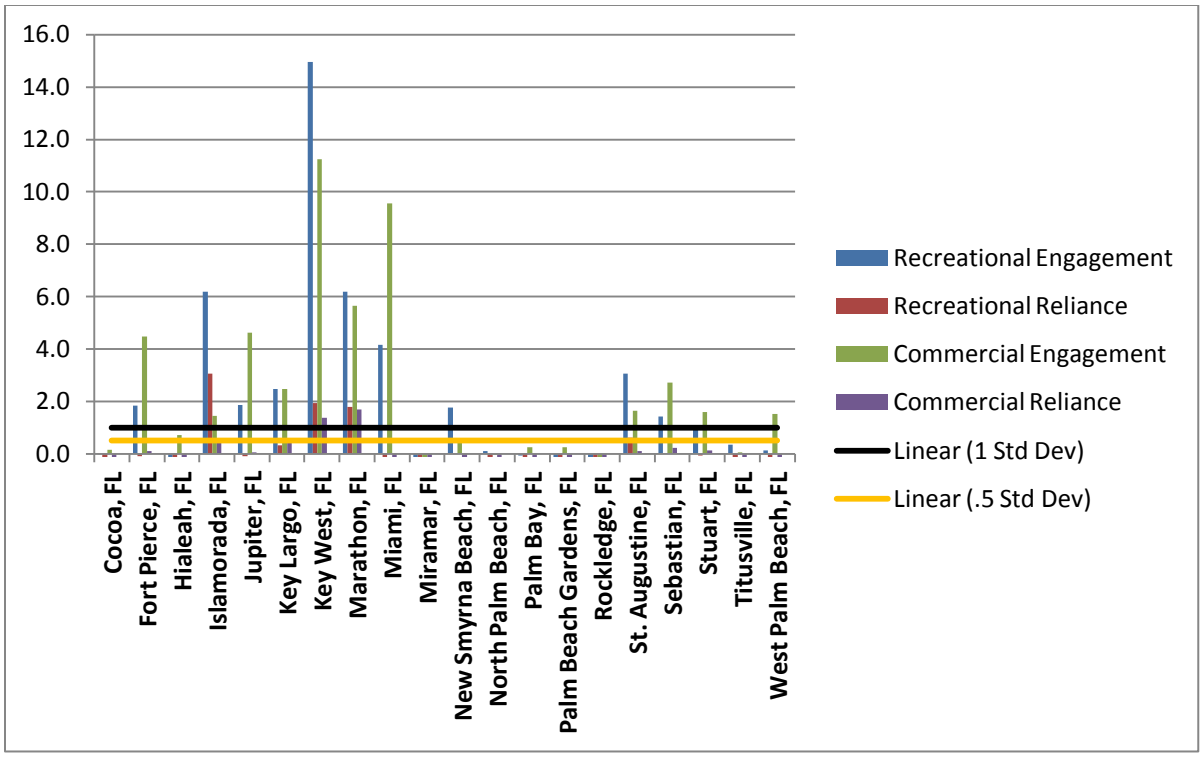

Figure 3.3.20. Commercial and recreational reliance and engagement for Florida communities with top commercial landings of select unassessed snapper grouper species.
Source: Southeast Regional Office Social Indicator Database 2013.

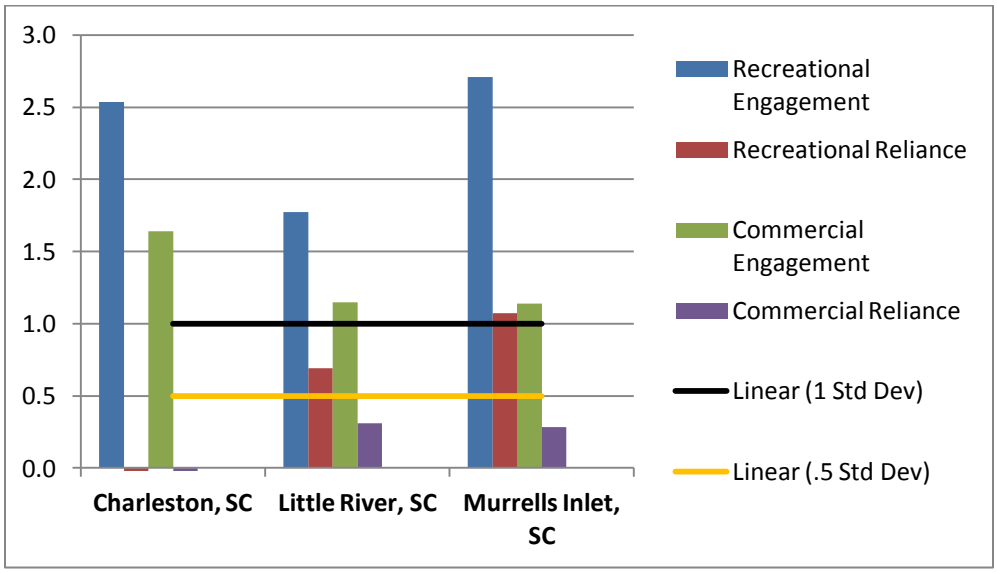

Figure 3.3.21. Commercial and recreational reliance and engagement for South Carolina communities with top commercial landings of select unassessed snapper grouper species.
Source: Southeast Regional Office Social Indicator Database 2013.

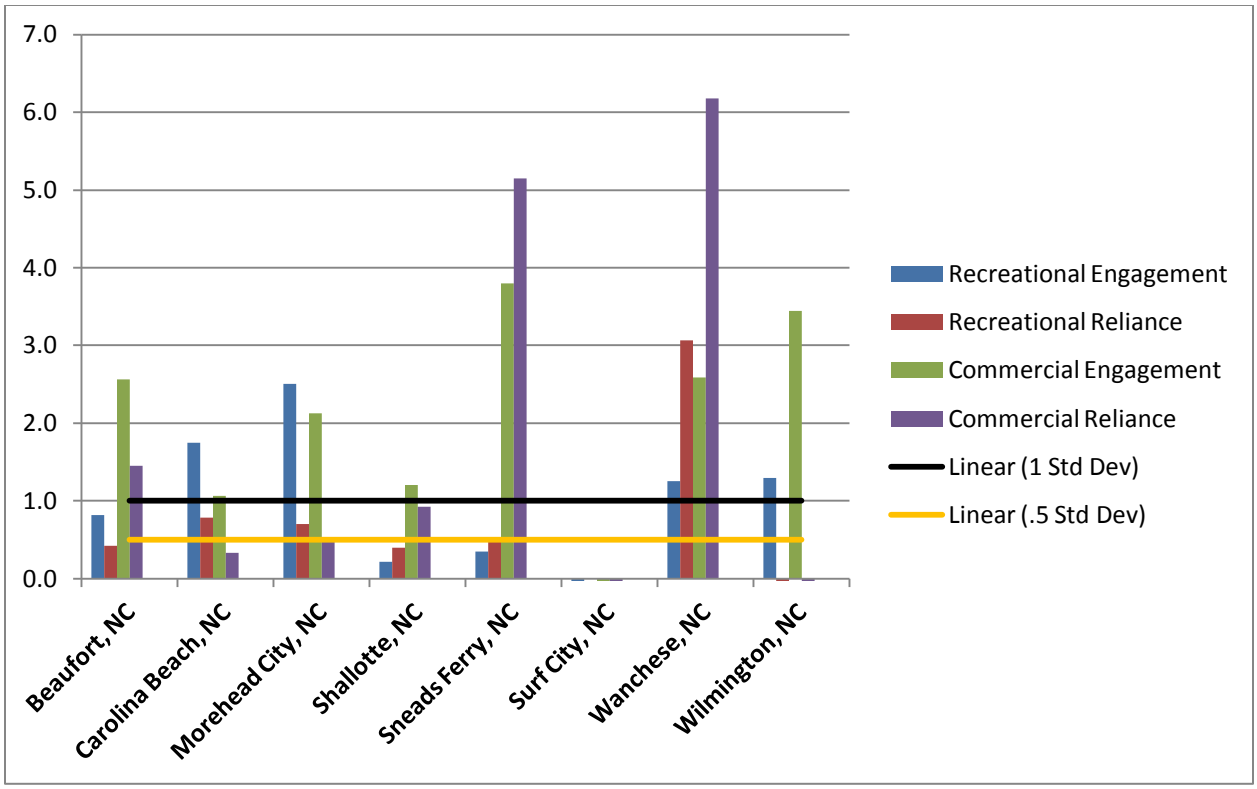

Figure 3.3.22. Commercial and recreational reliance and engagement for North Carolina communities with top commercial landings of select unassessed snapper grouper species.
Source: Southeast Regional Office Social Indicator Database 2013.

Fishing Communities

Atlantic Spadefish

Commercial Communities

Commercial landings are greatest for Atlantic spadefish in Florida, although this species is also landed commercially in South Carolina. **Figure 3.3.23** identifies the communities with commercial landings of Atlantic spadefish. The majority of dealer reported landings are located along the mid-Florida coast, through Florida's lower east coast, and in South Carolina (McClellanville).

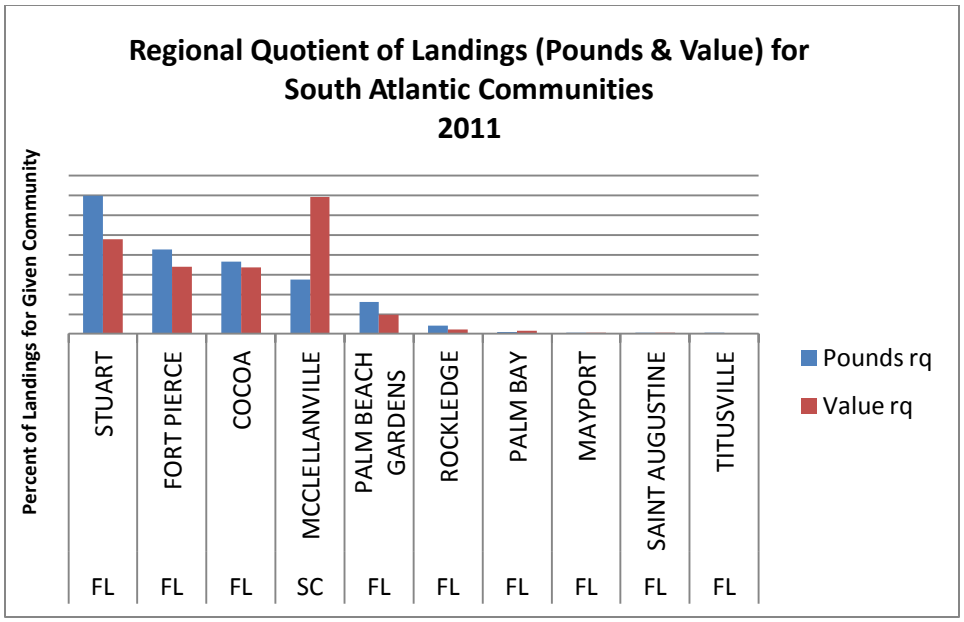

Figure 3.3.23. Proportion (rq) of Atlantic spadefish commercial landings (pounds and value) for South Atlantic communities out of total landings and value of atlantic spadefish. Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For Atlantic spadefish, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance Fort Pierce, St. Augustine, and Stuart, Florida (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species). Communities with substantial recreational engagement and/or reliance include Fort Pierce and St. Augustine, Florida.

Bar Jack

Commercial Communities

Bar jack is landed commercially in Florida. **Table 3.3.7** identifies the communities with commercial landings of bar jack (the regional quotient is not displayed for bar jack for confidentiality reasons). Dealer reported landings are located in the Florida Keys, Miami, and in a few communities located on the mid-Florida coast.

Table 3.3.7. Communities with commercial bar jack landings in descending order based on pounds landed.

STATE	CITY
FL	Key West
FL	Key Largo
FL	Cocoa
FL	Miami
FL	Mayport
FL	Islamorada
FL	Sebastian

Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For bar jack, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Islamorada, Key Largo, Key West, Miami, and Sebastian, Florida (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species). Communities with substantial recreational engagement and/or reliance include Islamorada, Key Largo, Key West, Miami, and Sebastian.

Cubera Snapper

Commercial Communities

Commercial landings are greatest for cubera snapper in Florida, although this species is also landed in North Carolina and South Carolina. **Figure 3.3.24** identifies the communities with the most commercial landings of cubera snapper. The majority of dealer reported landings are located in northern South Carolina, along the Florida coast, in North Carolina (Shallotte), and in the Florida Keys.

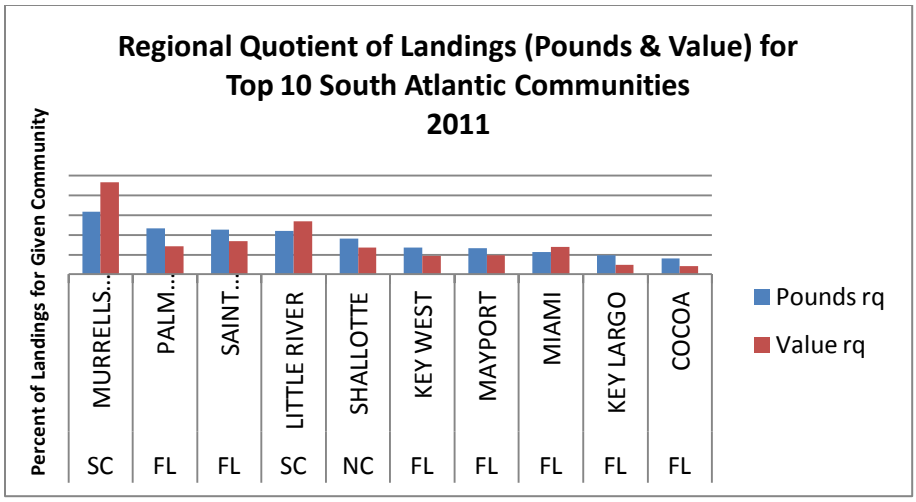

Figure 3.3.24. Proportion (rq) of cubera snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of cubera snapper.
Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For cubera snapper, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key Largo, Key West, Miami, and St. Augustine, Florida; Shallotte, North Carolina; and Little River and Murrells Inlet, South Carolina (included in **Figure 3.3.21** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.22** which details all top South Carolina communities, and **Figure 3.3.24** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key Largo, Key West, Miami, and St. Augustine, Florida and Little River and Murrells Inlet, South Carolina.

Gray Snapper

Commercial Communities

Commercial landings are greatest for gray snapper in Florida, although this species is also landed in North Carolina and South Carolina. **Figure 3.3.25** identifies the communities with the most commercial landings of gray snapper. The majority of dealer reported landings are located in the Florida Keys and along the lower east coast of Florida (Miami, Hialeah, Fort Lauderdale, and North Palm Beach).

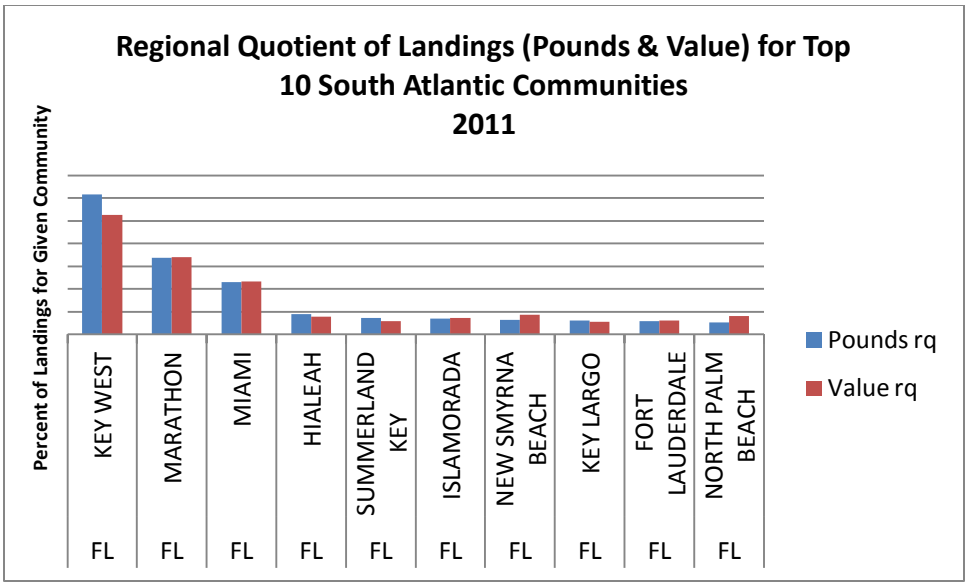

Figure 3.3.25. Proportion (rq) of gray snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of gray snapper.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For gray snapper, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Fort Lauderdale, Islamorada, Key Largo, Key West, Marathon, and Miami, Florida (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species). Communities with substantial recreational engagement and/or reliance include Fort Lauderdale, Islamorada, Key Largo, Key West, Marathon, Miami, and New Smyrna Beach, Florida.

Gray Triggerfish

Commercial Communities

Triggerfish are landed commercially in North Carolina, South Carolina, and Florida. **Figure 3.3.26** identifies the communities with the most commercial landings of triggerfish. The majority of dealer reported landings are located in along the north coast of Florida (Mayport and St. Augustine), South Carolina (Horry and Georgetown Counties), and along the southern North Carolina coast (Brunswick and Carteret Counties). Unclassified triggerfishes were included in this analysis because unclassified triggerfish are usually gray triggerfish.

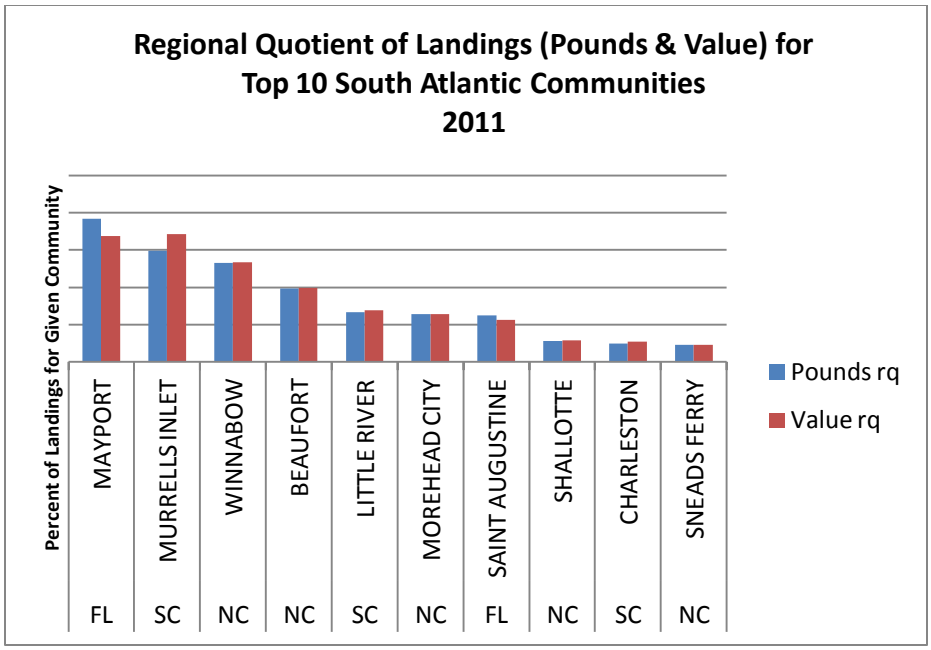

Figure 3.3.26. Proportion (rq) of triggerfish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of triggerfish.
Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For gray triggerfish, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include St. Augustine, Florida; Beaufort, Morehead City, and Shallotte, North Carolina; and Little River and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include St. Augustine, Florida; Morehead City, North Carolina; and Little River and Murrells Inlet, South Carolina.

Grunts Complex

The grunts complex includes white grunt, margate, sailor's choice, and tomtate. All species in this complex except for sailor's choice are unassessed and are thus included in this amendment; however all grunts complex species are included in the community level analysis below because a large portion of the landings are reported as unclassified grunts.

Commercial Communities

Commercial landings are greatest for grunts in Florida (52.4%), although grunts complex species are also landed in North Carolina (33.6%) and South Carolina (14%, ALS 2011). **Figure 3.3.27** identifies the communities with the most commercial landings of grunts complex species.

The majority of dealer reported landings are located in the Florida Keys (Key West and Key Largo make up 22.4% of landings in the year 2011), the southern coast of North Carolina, and the northern coast of South Carolina.

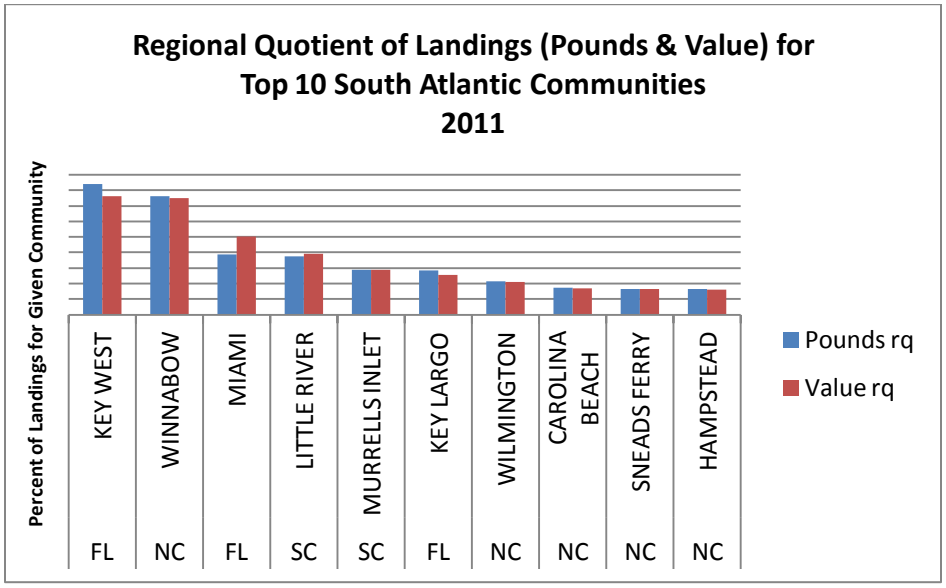

Figure 3.3.27. Proportion (rq) of grunts complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of grunts complex.
Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For grunts, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key Largo and Key West, Florida; Sneads Ferry and Wilmington, North Carolina; and Little River and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key Largo and Key West, Florida; Carolina Beach and Wilmington, North Carolina; and Little River and Murrells Inlet, South Carolina.

Lane Snapper

Commercial Communities

Lane snapper is landed commercially in Florida. **Figure 3.3.28** identifies the communities with the most commercial landings of lane snapper. The majority of dealer reported landings are located in the Florida Keys, along the central coast of Florida (Cocoa), and along the lower east coast of Florida (Miami and Jupiter).

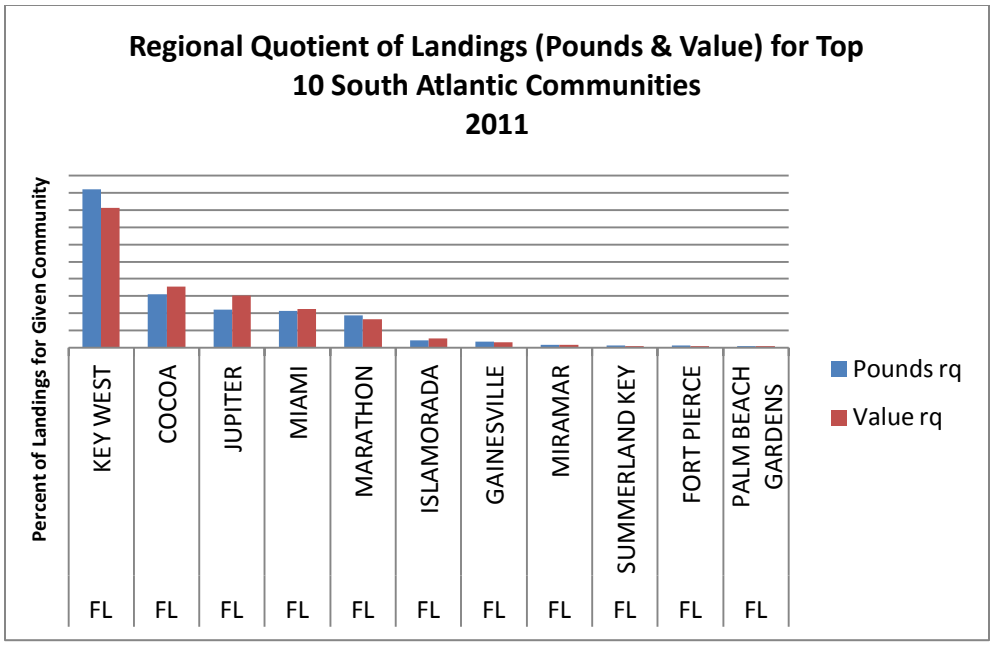

Figure 3.3.28. Proportion (rq) of lane snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of lane snapper.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For lane snapper, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Fort Pierce, Islamorada, Jupiter, Key West, Marathon, and Miami, Florida (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species). Communities with substantial recreational engagement and/or reliance include Fort Pierce, Islamorada, Jupiter, Key West, Marathon, and Miami, Florida.

Red Hind

Commercial Communities

Commercial landings are greatest for red hind in North Carolina, although this species is also landed in Florida. **Figure 3.3.29** identifies the communities with the most commercial landings of red hind. The majority of dealer reported landings are located in North Carolina (approximately 88%, ALS 2011).

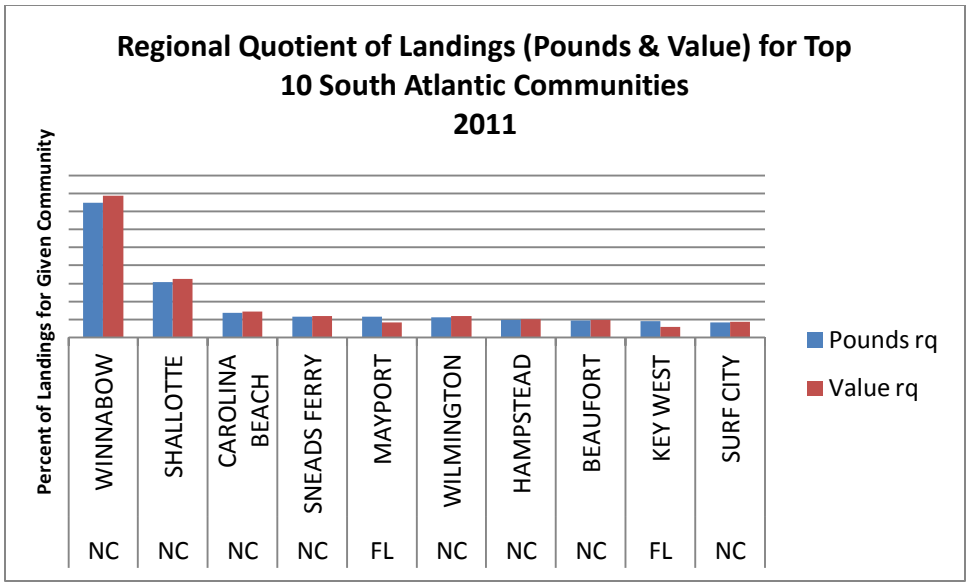

Figure 3.3.29. Proportion (rq) of red hind commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of red hind.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For red hind, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key West, Florida and Beaufort, Shallotte, Sneads Ferry, and Wilmington, North Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key West, Florida and Carolina Beach, and Wilmington, North Carolina.

Rock Hind

Commercial Communities

Commercial landings are greatest for rock hind in South Carolina, although this species is also landed in Florida and North Carolina. **Figure 3.3.30** identifies the communities with the most commercial landings of rock hind. The majority of dealer reported landings are located in South Carolina in Horry and Georgetown Counties.

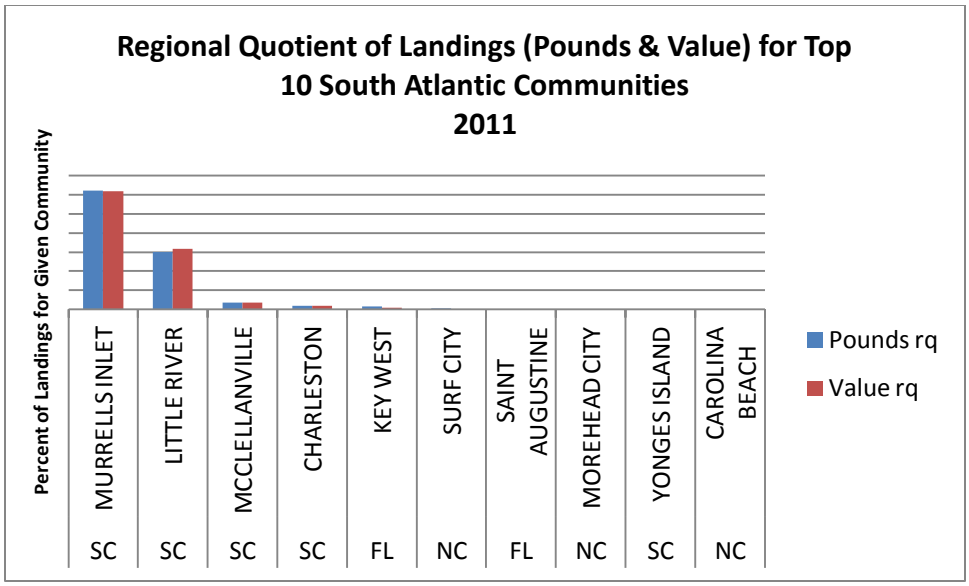

Figure 3.3.30. Proportion (rq) of rock hind commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of rock hind.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For rock hind, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key West and St. Augustine, Florida; Morehead City, North Carolina; and Charleston, Little River, McClellanville, and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key West and St. Augustine, Florida; Carolina Beach and Morehead City, North Carolina; and Charleston, Little River, and Murrells Inlet, South Carolina.

Scamp

Commercial Communities

Commercial landings are greatest for scamp in South Carolina, although this species is also landed in North Carolina and Florida. **Figure 3.3.31** identifies the communities with the most commercial landings of scamp. The majority of dealer reported landings are located in South Carolina (Murrells Inlet, Little River, Charelston, and McClellanville make up over 65% of landings in 2011) and North Carolina.

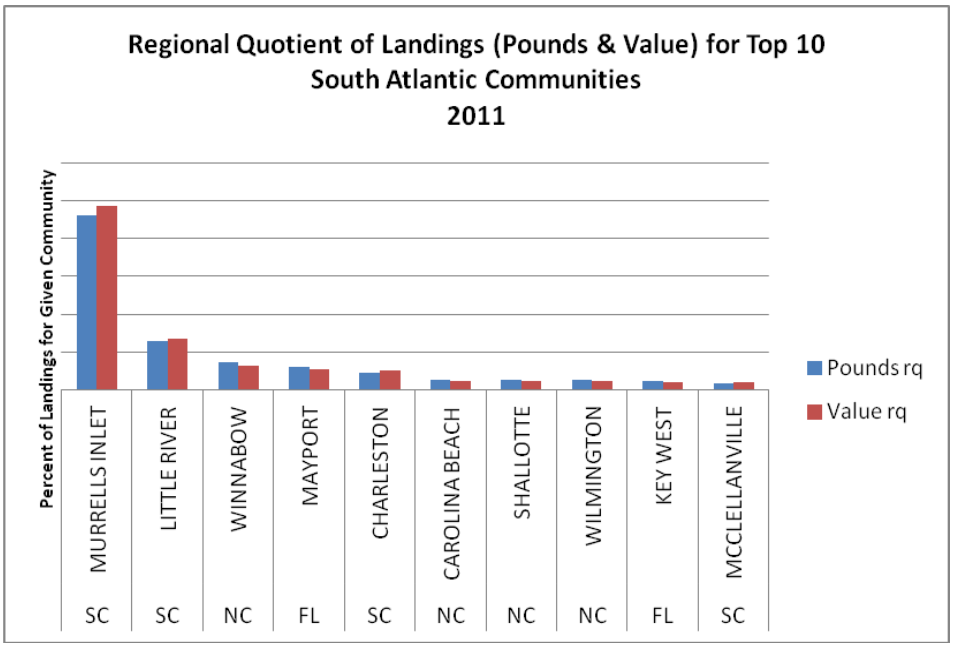

Figure 3.3.31. Proportion (rq) of scamp commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of scamp.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For scamp, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key West, Florida; Shallotte and Wilmington, North Carolina; and McClellanville and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key West, Florida; Carolina Beach and Wilmington, North Carolina; and Charleston, Little River, and Murrells Inlet, South Carolina.

Silk Snapper

Commercial Communities

Commercial landings are greatest for silk snapper in Florida, although this species is also landed in South Carolina, North Carolina, and Georgia. **Figure 3.3.32** identifies the communities with the most commercial landings of silk snapper. The majority of dealer reported landings are located in the Florida Keys.

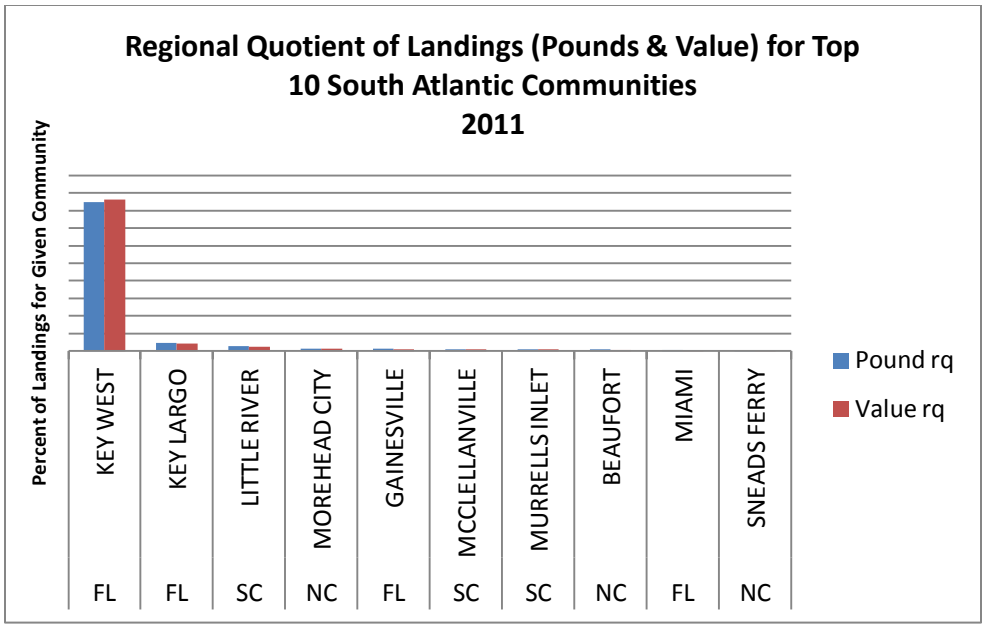

Figure 3.3.32. Proportion (rq) of silk snapper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of silk snapper.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For silk snapper, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key Largo, Key West, and Miami, Florida; Beaufort, Morehead City, and Sneads Ferry, North Carolina; and Little River, McClellanville, and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key Largo, Key West, and Miami, Florida; Morehead City, North Carolina; and Little River and Murrells Inlet, South Carolina.

Yellowedge Grouper

Commercial Communities

Commercial landings are greatest for yellowedge grouper in Florida, although this species is also landed in South Carolina and North Carolina. **Figure 3.3.33** identifies the communities with the most commercial landings of yellowedge grouper. The majority of dealer reported landings are located in the Florida Keys, in northern South Carolina, and along the central and lower east coast of Florida.

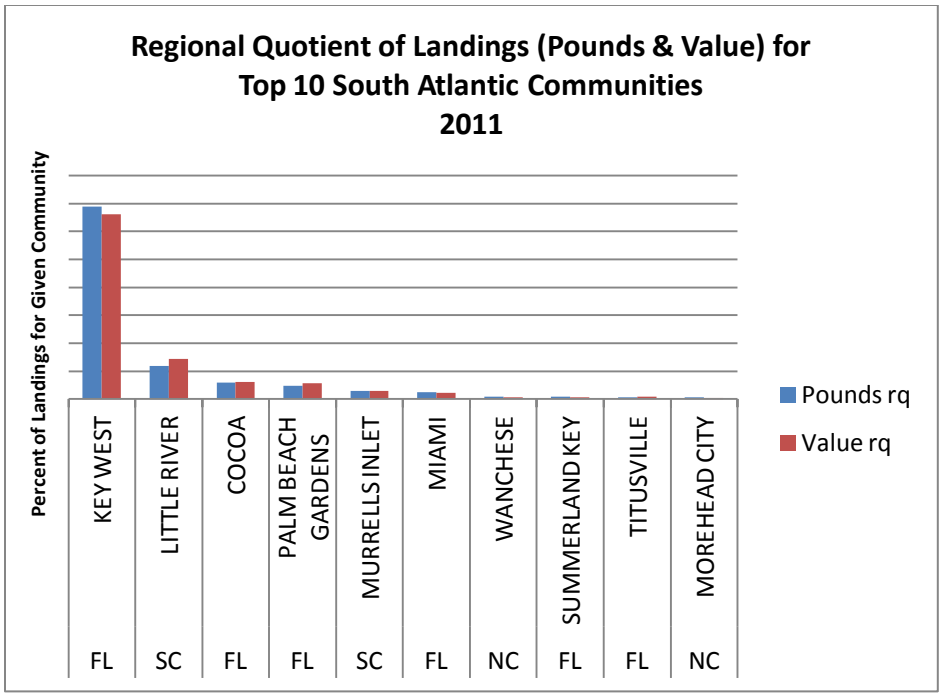

Figure 3.3.33. Proportion (rq) of yellowedge grouper commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of yellowedge grouper.
Values have been omitted because of confidentiality issues. Source: ALS dealer reports 2011.

Reliance and Engagement with Commercial and Recreational Fishing

The details of these indices are explained at the beginning of the Social Environment section. For yellowedge grouper, the primary communities that demonstrate high levels of commercial fishing engagement and/or reliance include Key West and Miami, Florida; Morehead City and Wanchese, North Carolina; and Little River and Murrells Inlet, South Carolina (included in **Figure 3.3.20** which details top Florida communities by commercial landings and value for select unassessed snapper grouper species, **Figure 3.3.21** which details all top South Carolina communities, and **Figure 3.3.22** which details all top North Carolina communities). Communities with substantial recreational engagement and/or reliance include Key West and Miami, Florida; Morehead City and Wanchese, North Carolina; and Little River and Murrells Inlet, South Carolina.

3.3.3 Environmental Justice

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories…" This executive order is generally referred to as environmental justice (EJ).

Commercial fishermen, recreational fishermen, and coastal communities would be expected to be impacted by the proposed action in the South Atlantic. However, information on the race and income status for these individuals is not available. Because the proposed action could be expected to impact fishermen and community members in numerous communities in the South Atlantic, census data have been assessed to examine whether any coastal counties have poverty or minority rates that exceed thresholds for raising EJ concerns.

The threshold for comparison used was 1.2 times the state average for the proportion of minorities and population living in poverty (EPA 1999). If the value for the county was greater than or equal to 1.2 times this average, then the county was considered an area of potential EJ concern. Census data for the year 2010 were used. Estimates of the state minority and poverty rates, associated thresholds, and county rates are provided in **Table 3.3.8**; note that only counties that exceed the minority threshold and/or the poverty threshold are included in the table**.**

While some counties expected to be affected by this proposed amendment may have minority or economic profiles that exceed the EJ thresholds and, therefore, may constitute areas of concern, significant EJ issues are not expected to arise as a result of this proposed amendment. It is anticipated that the impacts from the proposed regulations may impact minorities or the poor, but not through discriminatory application of these regulations.

Table 3.3.8. Environmental Justice thresholds (2010 U.S. Census data) for counties in the South Atlantic region.
Only coastal counties (east coast for Florida) with minority and/or poverty rates that exceed the state threshold are listed.

State	County	Minority Rate	Minority Threshold*	Poverty Rate	Poverty Threshold*
Florida		**39.5**	**47.4**	**13.2**	**15.8**
	Broward	52.0	-4.6	11.7	4.1
	Miami-Dade	81.9	-34.5	16.9	-1.1
	Orange County	50.3	-2.9	12.7	3.1
	Osceola	54.1	-6.7	13.3	2.5
Georgia		**41.7**	**50.0**	**15.0**	**18.0**
	Liberty	53.2	-3.2	17.5	0.5
South Carolina		**34.9**	**41.9**	**15.8**	**19.0**
	Colleton	44.4	-2.5	21.4	-2.4
	Georgetown	37.6	4.3	19.3	-0.3
	Hampton	59.0	-17.1	20.2	-1.2
	Jasper	61.8	-19.9	19.9	-0.9
North Carolina		**32.6**	**39.1**	**15.1**	**18.1**
	Bertie	64.6	-25.5	22.5	-4.4
	Chowan	39.2	-0.1	18.6	-0.5
	Gates	38.8	0.3	18.3	-0.2
	Hertford	65.3	-26.2	23.5	-5.4
	Hyde	44.5	-5.4	16.2	1.9
	Martin	48.4	-9.3	23.9	-5.8
	Pasquotank	43.4	-4.3	16.3	1.8
	Perquimans	27.7	11.4	18.6	-0.5
	Tyrrell	43.3	-4.2	19.9	-1.8
	Washington	54.7	-15.6	25.8	-7.7

*The county minority and poverty thresholds are calculated by comparing the county minority rate and poverty estimate to 1.2 times the state minority and poverty rates. A negative value for a county indicates that the threshold has been exceeded.

Finally, the general participatory process used in the development of fishery management measures (e.g., scoping meetings, public hearings, and open South Atlantic Council meetings) is expected to provide sufficient opportunity for meaningful involvement by potentially affected individuals to participate in the development process of this amendment and have their concerns factored into the decision process. Public input from individuals who participate in the fishery has been considered and incorporated into management decisions throughout development of the amendment.

3.4 Administrative Environment

3.4.1 The Fishery Management Process and Applicable Laws

3.4.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 nautical miles (nm) from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws. In most cases, the Secretary has delegated this authority to NMFS.

The South Atlantic Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has thirteen voting members: one from NMFS; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. On the South Atlantic Council, there are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard, State Department, and Atlantic States Marine Fisheries Commission (ASMFC). The South Atlantic Council has adopted procedures whereby the non-voting members serving on the South Atlantic Council Committees have full voting rights at the Committee level but not at the full South Atlantic Council level. South Atlantic Council members serve three-year terms and are recommended by state governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters, are open to the public. The South Atlantic Council uses its Scientific and Statistical Committee (SSC) to review the data and science being used in assessments and fishery management plans/amendments. In addition, the regulatory process is in accordance with the Administrative Procedure Act, in the form of "notice and comment" rulemaking.

3.4.1.2 State Fishery Management

The state governments of North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. North Carolina's marine fisheries are managed by the Marine Fisheries Division of the North Carolina Department of Environment and Natural Resources. The Marine Resources Division of the South Carolina Department of Natural Resources regulates South Carolina's marine fisheries. Georgia's marine fisheries are managed by the Coastal Resources Division of the Department of Natural Resources. The Marine Fisheries Division of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the South Atlantic Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters.

The South Atlantic States are also involved through the ASMFC in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The ASFMC is also represented at the South Atlantic Council level, but does not have voting authority at the South Atlantic Council level.

NMFS' State-Federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the ASMFC to develop and implement cooperative State-Federal fisheries regulations.

3.4.1.3 Enforcement

Both the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct

patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

Administrative monetary penalties and permit sanctions are issued pursuant to the guidance found in the Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions for the NOAA Office of the General Counsel – Enforcement Section. This Policy is published at the Enforcement Section's website: http://www.gc.noaa.gov/enforce-office3.html.

Chapter 4. Environmental Consequences and Comparison of Alternatives

4.1 Action 1. Update the South Atlantic Council's Acceptable Biological Catch (ABC) Control Rule

> ***Alternatives for Action 1***
>
> **Alternative 1 (No Action).** 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.
>
> **Preferred 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 and the existing Level 4 will be renumbered as Level 5.

4.1.1 Biological Effects

Alternative 1 (No Action) would continue to utilize the South Atlantic Fishery Management Council's (South Atlantic Council) ABC control rule as adopted in the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c) to specify ABCs for snapper grouper species, including those for unassessed species. The ABC control rule, which was developed by the South Atlantic Council's Scientific and Statistical Committee (SSC), involves a systematic inspection of all sources of uncertainty, including variables such as susceptibility, vulnerability, bycatch, and discard information when estimating ABC. For assessed species, the control rule considers the probability of overfishing in determining ABC. The ABC control rule for assessed species has four dimensions included in the framework: assessment information, characterization of uncertainty, stock status, and productivity/susceptibility of the stock. Each dimension contains tiers that can be evaluated for each stock to determine a numerical score. The uncertainty buffer, or difference between an overfishing limit and ABC, is expressed in terms of a reduction in the probability of overfishing, or P*.

For unassessed species, the ABC control rule sets the ABC equal to the third highest or median landings from 1999-2008. **Preferred Alternative 2** would modify the ABC control rule to use the Only Reliable Catch Stocks (ORCS) approach to calculate ABC values for select unassessed stocks. The following unassessed snapper grouper species would be affected by this action: Bar Jack, Margate, Red Hind, Cubera Snapper, Yellowedge Grouper, Silk Snapper, Atlantic Spadefish, Gray Snapper, Lane Snapper, Rock Hind, Tomtate, White Grunt, Scamp, and Gray Triggerfish.

Table 4.1.1 lists unassessed species that would not be subject to the ORCS approach due to SSC concerns on the reliability of catch statistics based on variability, landings, or data collection issues and species identification.

Table 4.1.1. Unassessed species that would not be affected by the revisions to the ABC control rule proposed by this amendment.

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	

Preferred Alternative 2 updates the ABC control rule for unassessed species based on recommendation developed by the South Atlantic Council's SSC. The SSC has developed no other options, modifications, or recommendations to the ABC control rule for the South Atlantic Council's consideration. Therefore, the South Atlantic Council and the National Marine Fisheries Service (NMFS) determined it is not reasonable to include additional alternatives for modifications to the ABC control rule. Updating the ABC control rule as proposed in **Preferred Alternative 2** would not have any direct biological effects. This change would have minor indirect effects on the biological environment since an improved scientific methodology would be adopted to establish ABCs for snapper grouper species that have not been assessed but for which there are reliable catch statistics. ABCs would be used to establish ACLs for individual species and for species complexes (see **Action 3**).

Modifying the ABC control rule for snapper grouper species would not affect protected species because these parameters are not used in determining immediate harvest objectives. Future specific management actions based on the ABC control rule may affect protected species. The biological effects to protected species from future management actions will be evaluated as they are developed.

This action is administrative in nature and would not have any impact on essential fish habitat or habitat areas of particular concern (HAPCs).

4.1.2 Economic Effects

Alternative 1 (No Action) would continue use of the current control rule to specify ABCs for snapper grouper species, while **Preferred Alternative 2** would change the ABC control role used to determine ABCs for species without assessments for which there are reliable catch data. **Alternative 1 (No Action)** and **Preferred Alternative 2** would have no added beneficial or adverse economic impacts because **Action 1** is an administrative action; however, **Preferred Alternative 2** would allow for subsequent actions that would change the ABCs and ACLs (**Actions 2** and **3**) for these stocks that could have beneficial and/or adverse economic impacts beyond the status quo.

4.1.3 Social Effects

Setting of the biological parameters for harvest thresholds has few direct social effects as the effects are more indirect from the implementation of the ABC and any subsequent reduction through other actions to set ACLs, annual catch targets (ACTs), and accountability measures (AMs). Because the ABC control rule already exists under **Alternative 1 (No Action)**, there would be no difference in direct social effects between **Alternative 1 (No Action)** and the proposed change in the ABC control rule under **Preferred Alternative 2**, because there would be no change to the ACLs, ACTs, and AMs that are currently in place through **Action 1**.

Changes in the ACLs that could occur if the rule used to designate an ABC for an unassessed stock is changed based on an SSC-recommended method under **Preferred Alternative 2** are expected to result in beneficial social effects. The SSC supports using this approach for cases with less information, and the ORCS method is expected to be more representative of actual conditions and stock status. More valid assessments of stock status for the species with limited information available would contribute to improved management with an approach tailored to a specific stock. Additionally, some stocks may appear to have poor stock status, which could be attributed to a lack of adequate and updated data instead of actual problems with the species. **Preferred Alternative 2** would be expected to be beneficial to the commercial fleet, for-hire fleet, private anglers, and other resource users because the ORCS method is expected to improve assessment of how much of each stock can be harvested, even if there are not accurate, up-to-date or available fishery-independent data for the stock. Because the ACLs for the species without assessments for which there are reliable catch data would not be adjusted using the new SSC ORCS methodology to specify the ABC for these stocks, including information from fishermen and scientific experts, **Alternative 1 (No Action)** would not result in any social benefits. On the other hand, the proposed updates to the ABC control rule under **Preferred Alternative 2** could help to increase some ABCs and associated ACLs, which would be more beneficial to the commercial and for-hire fleets, recreational fishermen, fishing businesses, and communities than maintaining the current ABC control rule under **Alternative 1 (No Action)**.

4.1.4 Administrative Effects

The mechanisms for specifying ABCs were established with implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and reflects **Alternative 1** (**No Action**). **Preferred Alternative 2**

is an administrative action and would not result in any direct changes to harvest parameters. Therefore, the administrative impacts of **Preferred Alternative 2** would be minimal, and not differ much when compared with **Alternative 1** (**No Action**). Administrative burdens may result from revising the ACL values under the preferred alternatives of **Action 3** would take the form of development and dissemination of outreach and education materials for fishery participants and law enforcement.

4.2 Action 2. Apply the revised ABC control rule to select unassessed snapper grouper species

Alternatives for Action 2

Alternative 1 (No Action). ABCs for select unassessed snapper grouper species are based on the current ABC Control Rule.

Preferred Alternative 2. Assign a risk tolerance scalar to stocks deemed by the SSC to be under low risk of overexploitation (scalar = 2):
- **Sub-alternative 2a.** Apply a risk tolerance scalar of 0.75.
- **Preferred Sub-alternative 2b.** Apply a risk tolerance scalar of 0.90.

Preferred Alternative 3. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderate risk of overexploitation (scalar = 1.5):
- **Sub-alternative 3a.** Apply a risk tolerance scalar of 0.75.
- **Preferred Sub-alternative 3b.** Apply a risk tolerance scalar of 0.80.

Preferred Alternative 4. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderately high risk of overexploitation (scalar = 1.25):
- **Sub-alternative 4a.** Apply a risk tolerance scalar of 0.70.
- **Sub-alternative 4b.** Apply a risk tolerance scalar of 0.75.
- **Sub-alternative 4c.** Apply a risk tolerance scalar of 0.50.
- **Preferred Sub-alternative 4d.** Apply a risk tolerance scalar of 0.70 for rock hind, tomtate, white grunt and gray triggerfish and 0.50 for scamp.

4.2.1 Biological Effects

Alternative 1 (No Action) would not adjust ABCs for select unassessed snapper grouper species based on the revisions to the ABC control rule specified in **Action 1 Table 4.2.1)**.

Preferred Alternatives 2-4 consider adjustments to the ABC for select unassessed snapper grouper species based on modifications to the ABC control rule in **Action 1**. **Table 4.1.1** identifies species that would not be affected by the revisions to the ABC control rule proposed by this amendment.

Based on the methodology in *Calculating Acceptable Biological Catch for Stocks That Have Reliable Catch Data Only (Only Reliable Catch Stocks – ORCS)* (Berkson et al. 2011; **Appendix H**), the South Atlantic Council's SSC recommended an approach (**Preferred Alternative 2** under **Action 1**) to compute the ABC for select unassessed stocks with reliable catch data. The approach involved selection of a "catch statistic", a scalar to denote the risk of overexploitation for the stock, and a scalar to denote the management risk level. Refer to **Section 1.6** for a description of this approach.

The SSC provided the catch statistic and risk of overexploitation for each stock, and the South Atlantic Council specified their risk tolerance level for each stock as described in **Sub-alternatives 2a-4c**. **Sub-alternative 2a** and **Preferred Sub-alternative 2b** would apply risk tolerance scalars of 0.75 and 0.90, respectively, for stocks with low risk of overexploitation (**Tables 4.2.2** and **4.2.3**). **Sub-alternative 3a** and **Preferred Sub-alternative 3b** would apply risk tolerance scalars of 0.75 and 0.80, respectively, for stocks with moderate risk of overexploitation (**Tables 4.2.4** and **4.2.5**). Finally, **Sub-alternatives 4a-4c** would use scalars of 0.70, 0.75, and 0.50, respectively, for stocks with moderately high risk of overexploitation (**Tables 4.2.6-4.2.8**). **Preferred Sub-Alternative 4d** would apply a risk tolerance scalar of 0.70 for rock hind, tomtate, white grunt, and gray triggerfish and 0.50 for scamp (**Table 4.2.9**). The sub-alternatives provide the South Atlantic Council with a range of alternatives to select the risk tolerance level for species at different risk levels of overexploitation as specified by the SSC.

The SSC classified only one species, bar jack, as having a low risk of overexploitation. Both sub-alternatives under **Alternative 2** would increase the ABC for bar jack. However, the increase in the ABC under **Preferred Sub-alternative 2b** would be about 10,000 pounds whole weight (lbs ww) greater than the resulting increase from **Sub-alternative 2a**.

Table 4.2.1. Current ABCs (lbs ww) for species addressed in this amendment.

Species	Current ABC (lbs ww)
Bar Jack	24,780
Margate	29,889
Red Hind	24,867
Cubera Snapper	24,680
Yellowedge Grouper	30,221
Silk Snapper	25,104
Atlantic Spadefish	189,460
Gray Snapper	795,743
Lane Snapper	119,984
Rock Hind	37,953
Tomtate	80,056
White Grunt	674,033
Scamp	509,788
Gray Triggerfish	626,518

Table 4.2.2. Revised ABC under Sub-alternative 2a, which applies a risk tolerance scalar of 0.75 to species with low risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.75	51,875	24,780	+27,095

Table 4.2.3. Revised ABC under **Preferred Sub-alternative 2b**, which applies a risk tolerance scalar of 0.90 to species with low risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Bar Jack	34,583	2	0.90	62,249	24,780	+37,469

The sub-alternatives under **Alternative 3** would affect stocks deemed by the SSC to be under a moderate risk of overexploitation. These stocks are margate, red hind, cubera snapper, yellowedge grouper, silk snapper, Atlantic spadefish, gray snapper, and lane snapper. Both **Sub-alternative 3a** and **Preferred Sub-alternative 3b** would result in increases to the ABCs for all stocks mentioned above.

Table 4.2.4. Revised ABCs under Sub-alternative 3a, which applies a risk tolerance scalar of 0.75 to species with moderate risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.75	71,992	29,889	+42,103
Red Hind	27,570	1.5	0.75	31,016	24,867	+6,149
Cubera Snapper	52,721	1.5	0.75	59,311	24,680	+34,631
Yellowedge Grouper	46,330	1.5	0.75	52,121	30,221	+21,900
Silk Snapper	75,269	1.5	0.75	84,678	25,104	+59,574
Atlantic Spadefish	677,065	1.5	0.75	761,698	189,460	+572,238
Gray Snapper	1,039,277	1.5	0.75	1,169,187	795,743	+373,444
Lane Snapper	169,572	1.5	0.75	190,769	119,984	+70,785

Table 4.2.5. Revised ABCs under **Preferred Sub-alternative 3b**, which applies a risk tolerance scalar of 0.80 to species with moderate risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Margate	63,993	1.5	0.80	76,792	29,889	+46,903
Red Hind	27,570	1.5	0.80	33,084	24,867	+8,217
Cubera Snapper	52,721	1.5	0.80	63,265	24,680	+38,585
Yellowedge Grouper	46,330	1.5	0.80	55,596	30,221	+25,375
Silk Snapper	75,269	1.5	0.80	90,323	25,104	+65,219
Atlantic Spadefish	677,065	1.5	0.80	812,478	189,460	+623,018
Gray Snapper	1,039,277	1.5	0.80	1,247,132	795,743	+451,389
Lane Snapper	169,572	1.5	0.80	203,486	119,984	+83,502

Sub-alternatives under **Alternative 4** would affect 5 stocks (rock hind, tomtate, white grunt, scamp, and gray triggerfish) deemed by the SSC to be under moderately high risk of overexploitation.

Table 4.2.6. Revised ABCs under Sub-alternative 4a, which applies a risk tolerance scalar of 0.70 to species with moderately high risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.70	522,269	509,788	+12,481
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

Table 4.2.7. Revised ABCs under Sub-alternative 4b, which applies a risk tolerance scalar of 0.75 to species with moderately high risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference of ABC
Rock Hind	42,849	1.25	0.75	40,171	37,953	+2,218
Tomtate	105,909	1.25	0.75	99,290	80,056	+19,234
White Grunt	735,873	1.25	0.75	689,881	674,033	+15,848
Scamp	596,879	1.25	0.75	559,574	509,788	+49,786
Gray Triggerfish	819,428	1.25	0.75	768,214	626,518	+141,696

Table 4.2.8. Revised ABCs under Sub-alternative 4c, which applies a risk tolerance scalar of 0.50 to species with moderately high risk of overexploitation.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.50	26,781	37,953	-11,172
Tomtate	105,909	1.25	0.50	66,193	80,056	-13,863
White Grunt	735,873	1.25	0.50	459,921	674,033	-214,112
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.50	512,143	626,518	-114,375

Table 4.2.9. Revised ABCs under **Preferred Sub-alternative 4d**, which applies a risk tolerance scalar of 0.70 to rock hind, tomtate, white grunt, and gray triggerfish, and a risk tolerance scalar of 0.50 to scamp.

Stock	Catch Statistic (Highest landings 1999-2007)	Risk of Overexploitation Scalar	Risk Tolerance Scalar	New ABC (lbs ww)	Current ABC (lbs ww)	Difference in ABC
Rock Hind	42,849	1.25	0.70	37,493	37,953	-460
Tomtate	105,909	1.25	0.70	92,670	80,056	+12,614
White Grunt	735,873	1.25	0.70	643,889	674,033	-30,144
Scamp	596,879	1.25	0.50	373,049	509,788	-136,739
Gray Triggerfish	819,428	1.25	0.70	717,000	626,518	+90,482

Action 2 would not functionally increase the ACLs, the revisions to ABCs would have impacts on ACLs, sector ACLs (based on commercial and recreational allocations) and the recreational ACT specified in **Action 3**. **Preferred Sub-alternatives 2b** and **3b** would result in an increase in ABC for all species. **Sub-alternative 4a** would result in ABC decreases for two stocks (rock hind and white grunt) and increases for tomtate, scamp, and gray triggerfish, with the highest increase in ABC affecting gray triggerfish. **Sub-alternative 4b** would result in an increase in ABC for all stocks deemed to be at a moderately high risk of overexploitation; whereas, under **Sub-alternative 4c** the ABC for all stocks would decrease. Changes in the ABCs would result in changes to the ACLs for species and species complexes (see **Action 3**) as ACL is a function of the ABC. **Preferred Sub-alternative 4d** would result in ABC decreases for three stocks (rock hind, white grunt, and scamp) and increases for tomtate and gray triggerfish, with the highest increase in ABC affecting gray triggerfish.

Any increase in harvest can have a negative biological impact on a species. However, all of the sub-alternatives under this action were developed by the South Atlantic Council's SSC's recommended ORCS approach and would not be expected to establish ABCs that would lead to overfishing and result in negative biological impacts. There is uncertainty involved through the selection of the risk of overexploitation scalar (determined by the SSC) and the selection of the risk tolerance scalar (selected by the South Atlantic Council). If the South Atlantic Council selects the risk tolerance scalar to achieve the most conservative values of ABC, any biological impacts would be minimized. However, while conservative ABCs, which allow for lower ACLs and harvest (**Action 3**), may provide the greatest biological benefit to the species, higher ABCs, which would allow for higher ACLs and harvest (**Action 3**), would not be expected to negatively impact the stock as long as harvest is maintained at a sustainable level and overfishing does not occur.

Applying the revised ABC control rule will not, in and of itself, affect protected species or essential fish habitat since immediate harvest objectives are based off, and not set by, the ABC. Establishing the future ACLs for select unassessed snapper grouper species in **Action 3** is an example of a specific management actions based on the ABC control rule may affect protected species or habitat. The biological effects to protected species and habitat are discussed under **Action 3**.

4.2.2 Economic Effects

Action 2 is an administrative action and would have no direct economic impact. Any indirect impact is dependent on subsequent action (**Action 3**) that would change the ACLs (because of changes to the ABCs), which could affect annual landings and economic benefits from those landings.

Alternative 2 would assign the highest scalar value, **Alternative 3** the second highest, and **Alternative 4** the lowest. **Preferred Sub-alternative 2b** would yield a higher ABC for bar jack than **Sub-alternative 2a**. **Preferred Sub-alternative 3b** would yield higher ABCs for eight snapper grouper species than **Sub-alternative 3a**. **Preferred Sub-alternative 4d** would yield higher ABCs for five species than **Sub-alternative 4c**, but lower ABCs than **Sub-alternative 4b** and **4a.** The higher the scalar value, the higher the ABC, and, potentially, the greater the increase of the ACL, annual landings, and economic benefits that derive from those landings.

4.2.3 Social Effects

As discussed in **Section 4.1.3**, the ORCS methodology is designed to incorporate expert knowledge of the species and fishery to compensate for unavailable data on some stocks, which provides some flexibility in stock status determination with unassessed stocks and presumably a more accurate account of the stock. Additionally, the use of the risk tolerance scalar allows the South Atlantic Council to incorporate expertise and direct knowledge of the stocks in this action into proactive management. This type of decision-making is beneficial to fishermen and other resource users by taking advantage of experience and knowledge of South Atlantic Council members and the public when selecting the level of risk for an ORCS species.

Adjustments in the ABC for any stock would not directly affect resource users, but the level of the ABC and the associated ACL would affect fishermen if the ACL is met or exceeded and AMs are triggered. Because the ABC for a stock is the highest level at which the ACL can be set, the specification of higher or lower ABCs in this action would result in positive and negative effects on fishermen and associated businesses and communities. In general, a higher ABC would be more beneficial to commercial and recreational fishermen as long as it is set at a level that prevents overfishing.

For bar jack, margate, rock hind, cubera snapper, yellowedge grouper, silk snapper, Atlantic spadefish, gray snapper, and lane snapper, the ACL would increase under all alternatives except for **Alternative 1 (No Action)**, which would be expected to benefit commercial and recreational fishermen by increasing access to these stocks. However, the ACLs (commercial or recreational) for most of the species have not recently been met or exceeded, and the increased ABC under **Alternative 2** (bar jack) and **Alternative 3 (**rock hind, cubera snapper, yellowedge grouper, silk snapper, Atlantic spadefish, gray snapper, and lane snapper) would not be expected to affect commercial and recreational fishermen harvesting these species except for providing room for growth if harvest increases in the future.

Because species in **Alternative 4** are designated as moderately high risk of exploitation, a lower or decrease in the ACL would be expected to benefit fishermen in the long term by reducing the risk of

overfishing to occur. The proposed decreased ABC for rock hind in **Sub-alternatives 4a, 4c**, and **Preferred Sub-alternative 4d** and proposed decreased ABC for tomtate in **Sub-alternative 4c** could have some negative effects on fishermen if an AM is triggered due to a reduction in the ACL for the shallow water grouper complex. However, meeting the complex ACL and triggering the AM would not be expected. The increased ABC for these stocks under **Sub-alternative 4b** would be expected to benefit fishermen as long as overfishing does not occur.

The decreased ABC for white grunt proposed under **Sub-alternatives 4a**, **4c**, and **Preferred Sub-alternative 4d**, and for scamp under **Sub-alternatives 4c** and **Preferred 4d** could limit fishing opportunities for these species, particularly with white grunt for recreational anglers in south Florida and the Florida Keys, where the species is a popular, easy-to-target recreational species. The increased ABCs for white grunt and scamp proposed under **Sub-alternative 4b** would be expected to benefit fishermen as long as overfishing does not occur. Access to another popular species, gray triggerfish, could also be affected by changes to the ACL, particularly because of in-season closures for gray triggerfish in recent years. Under **Sub-alternative 4a**, **Sub-alternative 4b**, and **Preferred Sub-alternative 4d**, the commercial ACL for gray triggerfish is expected to increase (**Tables 4.2.6**, **4.2.7**, and **4.2.9**), which could help lengthen the commercial season for gray triggerfish. However, under **Sub-alternative 4c** the commercial ACL for gray triggerfish would decrease, respectively, which could result in more frequent and earlier closures for both sectors.

Because there is concern about the status of the scamp stock by fishermen and South Atlantic Council members due to decreasing landings in recent years, a lower risk tolerance under **Preferred Sub-alternative 4d** could be more beneficial to fishermen in the long term, even if the ABC is reduced for a period.

4.2.4 Administrative Effects

The mechanisms for determining ABCs through application of the ABC control rule were put in place with implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and reflect **Action 2**, **Alternative 1** (**No Action**). Furthermore, allocations to specify sector ACLs from ABCs were identified in previous amendments. Amendment 29 considers new mechanisms for utilization of an ABC control rule to establish harvest parameters in **Action 3**. Therefore, the administrative impacts of **Preferred Alternatives 2-4**, and associated sub-alternatives would be minimal, and not differ much from **Alternative 1** (**No Action**). The administrative burden would be greater for **Action 3** than for **Action 2**, because **Action 3** considers revisions to ACLs, which include the need to monitor landings and implement AMs when ACLs are met or are projected to be met. **Action 2** would revise the ABCs but may not necessarily result in changes to the ACLs.

4.3 Action 3. Establish ACLs for select unassessed snapper grouper species

Alternatives for Action 3

1. (No Action). ACL=OY=Current ABC

2. ACL=OY=Proposed ABC
   - **Preferred 2a.** Snappers Complex
   - **Preferred 2b.** Grunts Complex
   - **Preferred 2c.** Shallow Water Grouper
   - **Preferred 2d.** Bar Jack
   - **Preferred 2e.** Atlantic Spadefish
   - 2f. Scamp
   - **Preferred 2g.** Gray Triggerfish

3. ACL=OY=0.95*Proposed ABC
   - 3a. Snappers Complex
   - 3b. Grunts Complex
   - 3c. Shallow Water Grouper
   - 3d. Bar Jack
   - 3e. Atlantic Spadefish
   - 3f. Scamp
   - 3g. Gray Triggerfish

4. ACL=OY=0.90*Proposed ABC
   - 4a. Snappers Complex
   - 4b. Grunts Complex
   - 4c. Shallow Water Grouper
   - 4d. Bar Jack
   - 4e. Atlantic Spadefish
   - **Preferred 4f. Scamp**
   - 4g. Gray Triggerfish

5. ACL=OY=0.80*Proposed ABC
   - 5a. Snappers Complex
   - 5b. Grunts Complex
   - 5c. Shallow Water Grouper
   - 5d. Bar Jack
   - 5e. Atlantic Spadefish
   - 5f. Scamp
   - 5g. Gray Triggerfish

4.3.1 Biological Effects

ACLs for unassessed snapper grouper species were set equal to the ABC in the Comprehensive ACL Amendment (SAFMC 2011c), Amendment 24 to the Snapper Grouper FMP (SAMFC 2011d), Regulatory Amendment 12 (SAFMC 2012), Regulatory Amendment 15 to the Snapper Grouper FMP (SAFMC 2013b), Regulatory Amendment 18 to the Snapper Grouper FMP (SAFMC 2013c), and Regulatory Amendment 19 to the Snapper Grouper FMP (SAFMC 2013d) since the South Atlantic Council felt that the ABC control rule was prescriptive enough to render a buffer between the ABC and ACL unnecessary. The Comprehensive ACL Amendment (SAFMC 2011c) further established recreational ACTs for species in the Snapper Grouper FMP. The ACTs adjust the ACLs by 50% or by one minus the percent standard error (PSE) of recreational landings, whichever is greater based on data from 2005-2009. PSEs for species affected by this amendment are included in **Table 4.3.1**. The South Atlantic Council concluded that including the PSE for the catch estimates into a formula to establish ACT adds a larger buffer for species that are not commonly landed, further accounting for uncertainty. The current ACT functions as a performance standard, and does not trigger an AM. If an evaluation concludes that the ACT and ACL are being chronically exceeded for a species, and post-season AMs are repeatedly needed to correct for ACL overages, adjustments to management measures would be made. For the commercial snapper grouper sector, the South Atlantic Council concluded that quota monitoring and AMs were sufficient to account for management uncertainty. Therefore, the South Atlantic Council did not establish a commercial ACT.

The Comprehensive ACL Amendment (SAFMC 2011c) also specified sector allocations for species addressed by Amendment 29 based on landings information from 1986-2008 and 2006-2008; thereby, combining past and present participation. Current sector allocations for species addressed in Amendment 29 are shown in **Table 4.3.1**. The values in **Table 4.3.1** were used to specify proposed sector ACLs in **Alternatives 2-5**.

Table 4.3.1. Existing commercial and recreational allocations for species with proposed changes in ABC. Average percent standard error (PSE) from MRIP for 2005-2009.

Species	Allocations		PSE
	Comm	Rec	
Bar jack	21.25%	78.75%	76
Margate	18.88%	81.12%	46
Red hind	73.60%	26.40%	77
Cubera snapper	19.57%	80.43%	74
Yellowedge grouper	90.77%	9.23%	86
Silk snapper	73.95%	26.05%	69
Atlantic spadefish	18.53%	81.47%	38
Gray snapper	24.23%	75.77%	11
Lane snapper	14.75%	85.25%	24
Rock hind	60.90%	39.10%	61
Tomtate	0.00%	100.00%	31
White grunt	31.59%	68.41%	21
Scamp	65.34%	34.66%	47
Gray triggerfish	43.56%	56.44%	20

Alternative 1 (No Action) would not change the current ACLs. ACL would be set equal to the optimum yield (OY), which would be set equal to the current ABC. Under this alternative, ACL values would not change from the status quo regardless of whether or not the ABC values are revised in **Action 2**. **Table 4.3.2** shows the current commercial and recreational ACLs and recreational ACTs for the species groups and individual species affected by this action.

Table 4.3.2. Current commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for unassessed species in Action 3 (Alternative 1).

Species or Complex	Comm ACL	Rec ACL	Rec ACT
Snappers Complex[a]	215,662	728,577	624,197
Grunts Complex[b]	218,539	588,113	442,970
SWG Complex[c]	49,776	46,656	23,595
Bar Jack	5,265	19,515	9,758
Atlantic Spadefish	35,108	154,352	96,470
Scamp	333,100	176,688	94,316
Gray Triggerfish	272,880	353,638	284,325

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Alternative 2 would set ACL=OY=Proposed ABC for selected sub-alternatives. **Preferred Sub-alternative 2a** would apply to the snappers complex, **Preferred sub-alternative 2b** would apply to the grunts complex, **Preferred Sub-alternative 2c** would apply to the shallow water complex, **Preferred Sub-alternative 2d** would apply to the bar jack, **Preferred Sub-alternative 2e** would apply to Atlantic spadefish, and **Preferred Sub-alternative 2g** would apply to gray triggerfish. **Sub-alternative 2f** would apply to scamp but was not selected as preferred under **Alternative 2**. Under **Action 2**, the ABC would increase for most species using the ORCS approach. As such, the ACLs would also increase. **Table 4.3.3** shows the proposed changes based on the preferred ABC alternatives in **Action 2** and **Alternative 2** in **Action 3**.

Table 4.3.3. Proposed commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for unassessed snapper grouper species in Action 3, Alternative 2 where ACL=OY=Proposed ABC. Based on preferred ABC alternatives in Action 2.

Species or Complex Sub-alt	Action 3, Alternative 2		
	Comm ACL	Rec ACL	Rec ACT
Sub-Alt 2a (Preferred) - Snappers Complex[a]	**344,884**	**1,172,832**	**984,898**
Sub-Alt 2b (Preferred) - Grunts Complex[b]	**217,903**	**618,122**	**455,962**
Sub-Alt 2c (Preferred) - SWG Complex[c]	**55,542**	**48,648**	**20,542**
Sub-Alt 2d (Preferred) - Bar Jack	**13,228**	**49,021**	**11,912**
Sub-Alt 2e (Preferred) - Atlantic Spadefish	**150,552**	**661,926**	**413,704**
Sub-Alt 2f - Scamp	243,750	129,299	69,020
Sub-Alt 2g (Preferred) - Gray Triggerfish	**312,325**	**404,675**	**325,359**

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Alternative 3 would revise the ACL definition to set ACL=OY=0.95*(Proposed ABC) for the complexes and species specified in **Sub-alternatives 3a-3g**. The proposed ABC would be based on the ORCS approach in **Action 1** and **Action 2**. **Alternative 3** would provide a buffer between ABC and ACL providing greater biological protection to species and species complexes. Proposed revisions to the ACLs and recreational ACT are in **Table 4.3.4**.

Table 4.3.4. Proposed commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for unassessed snapper grouper species in Action 3, Alternative 3, where ACL=OY=95%Proposed ABC. Based on preferred ABC alternatives in Action 2.

Species or Complex Sub-alt	Action 3, Alternative 3		
	Comm ACL	Rec ACL	Rec ACT
Sub-Alt 3a - Snappers Complex[a]	327,640	1,114,191	935,653
Sub-Alt 3b - Grunts Complex[b]	794,224	207,008	433,164
Sub-Alt 3c - SWG Complex[c]	98,981	52,764	19,515
Sub-Alt 3d - Bar Jack	12,567	46,570	11,912
Sub-Alt 3e - Atlantic Spadefish	143,025	628,830	393,018
Sub-Alt 3f - Scamp	231,563	122,834	65,569
Sub-Alt 3g - Gray Triggerfish	296,709	384,441	309,091

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Alternative 4 would revise the ACL definition to set ACL=OY=0.90*(Proposed ABC) for the species and species complexes specified in **Sub-alternatives 3a-3g**. The proposed ABC would be based on the ORCS approach in **Action 2**. **Preferred Sub-alternative 4f** was selected as preferred for the commercial and recreational ACL and recreational ACT for scamp. **Alternative 4** would provide a greater buffer between ABC and ACL than **Alternative 3,** which would lead to greater biological

protection to the species. **Table 4.3.5** provides proposed commercial and recreational ACLs and recreational ACTs based on **Alternative 4**.

Table 4.3.5. Proposed commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for unassessed snapper grouper species in Action 3, Alternative 4, where ACL=OY=90%Proposed ABC. Based on preferred ABC alternatives in Action 2.

Species or Complex Sub-alt	Action 3, Alternative 4		
	Comm ACL	Rec ACL	Rec ACT
Sub-Alt 4a - Snappers Complex[a]	310,395	1,055,549	886,408
Sub-Alt 4b - Grunts Complex[b]	752,423	196,113	410,366
Sub-Alt 4c - SWG Complex[c]	93,771	49,987	18,488
Sub-Alt 4d - Bar Jack	11,905	44,119	11,317
Sub-Alt 4e - Atlantic Spadefish	135,497	595,733	372,333
Sub-Alt 4f **(Preferred)** - Scamp	219,375	116,369	62,118
Sub-Alt 4g - Gray Triggerfish	281,093	364,207	292,823

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Alternative 5 would revise the ACL definition to set ACL=OY=0.80*(Proposed ABC) for the species and species complexes specified in **Sub-alternatives 5a-5g**. The proposed ABC would be based on the ORCS approach in **Action 1** and **Action 2**. **Alternative 5** would provide the largest buffer between ABC and ACL and would provide the greatest biological protection to the species. **Table 4.3.6** provides proposed commercial and recreational ACLs and recreational ACTs based on **Alternative 5**.

Table 4.3.6. Proposed commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for unassessed snapper grouper species in Action 3, Alternative 5 where, ACL=OY=80%Proposed ABC. Based on preferred ABC alternatives in Action 2.

Species or Complex Sub-alt	Action 3, Alternative 5		
	Comm ACL	Rec ACL	Rec ACT
Sub-Alt 5a - Snappers Complex[a]	275,907	938,266	787,918
Sub-Alt 5b - Grunts Complex[b]	174,322	494,498	364,770
Sub-Alt 5c - SWG Complex[c]	44,434	38,918	16,434
Sub-Alt 5d - Bar Jack	10,582	39,217	9,530
Sub-Alt 5e - Atlantic Spadefish	120,442	529,541	330,963
Sub-Alt 5f - Scamp	195,000	103,439	55,216
Sub-Alt 5g - Gray Triggerfish	249,860	323,740	260,287

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Table 4.3.7 displays the proposed revised ACLs under **Alternatives 2-5** based on the preferred ABC alternatives specified in **Action 2**. **Table 4.3.8** illustrates the difference between the current ACLs (**Alternative 1, No Action**) and the ACLs under **Alternatives 2-5** that would result from the preferred ABC alternatives in **Action 2**.

Table 4.3.7. Proposed commercial and recreational ACLs (lbs ww) and recreational ACT (lbs ww) for preferred sub-alternatives for **Alternatives 2** and **4** in Action 3. Based on preferred ABC alternatives in Action 2.

Species or Complex Sub-alt	Action 3, Alternatives 2 & 5		
	Comm ACL	Rec ACL	Rec ACT
Sub-Alt 2a (Preferred) - Snappers Complex[a]	344,884	1,172,832	984,898
Sub-Alt 2b (Preferred) - Grunts Complex[b]	217,903	618,122	455,962
Sub-Alt 2c (Preferred) - SWG Complex[c]	55,542	48,648	20,542
Sub-Alt 2d (Preferred) - Bar Jack	13,228	49,021	11,912
Sub-Alt 2e (Preferred) - Atlantic Spadefish	150,552	661,926	413,704
Sub-Alt 4f (Preferred) - Scamp	219,375	116,369	62,118
Sub-Alt 2g (Preferred) - Gray Triggerfish	312,325	404,675	325,359

(a) Snappers: Gray snapper, lane snapper, cubera snapper, dog snapper, mahogany snapper
(b) Grunts: White grunt, margate, sailor's choice, tomtate
(c) Shallow Water Grouper: Red hind, rock hind, coney, graysby, yellowfin grouper, yellowmouth grouper

Under all of the alternatives in **Action 3** (based on preferred ABC alternatives in **Action 2**), the sector ACLs would increase for the Snappers Complex (**Table 4.3.8**). **Alternative 2** and associated **Preferred Sub-alternatives 2a, 2d, 2e**, and **2g** would result in increases in the ACL for the Snappers Complex as well as bar jack, Atlantic spadefish, and gray triggerfish. **Preferred Sub-alternative 2b** would result in a slight decrease in the ACL for the commercial grunts ACL. The ACL for scamp would also decrease through **Preferred Alternative 4**, **Preferred Sub-alternative 4f**. **Table 4.3.9** shows the difference in commercial and recreational ACLs among the alternatives in **Action 3** and based on the preferred ABC alternatives in **Action 2**.

Table 4.3.8. Stock or stock complex commercial and recreational ACLs (lbs ww) for alternatives in Action 3 based on preferred alternatives in Action 2. Highlighted cells indicate South Atlantic Council's preferred ACL change.

STOCK OR STOCK COMPLEX NAME	Alt 1 (No Action)		Alt 2 ACL=OY=ABC		Alt 3 ACL=OY=95%ABC		Alt 4 ACL=OY=90%ABC		Alt 5 ACL=OY=80%ABC	
	Comm	Rec	Comm	Rec	Comm	Rec	Comm	Rec	Comm	Rec
SNAPPERS	215,662	728,577	344,884	1,172,832	327,640	1,114,191	310,395	1,055,549	275,907	938,266
Gray snapper	192,830	602,913	302,180	944,952	287,071	897,704	271,962	850,457	241,744	755,962
Lane snapper	17,695	102,289	30,014	173,472	28,513	164,798	27,013	156,125	24,011	138,778
Cubera snapper	4,829	19,851	12,381	50,884	11,762	48,340	11,143	45,796	9,905	40,707
Dog snapper	273	3,012	273	3,012	259	2,861	246	2,711	218	2,410
Mahogany snapper	36	512	36	512	34	486	32	461	29	410
GRUNTS	218,539	588,113	217,903	618,122	207,008	587,216	196,113	556,310	174,322	494,498
White grunt	212,896	461,136	203,405	440,484	193,235	418,460	183,065	396,436	162,724	352,387
Sailors choice	0	22,674	0	22,674	0	21,540	0	20,407	0	18,139
Tomtate	0	80,056	0	92,670	0	88,037	0	83,403	0	74,136
Margate	5,643	24,246	14,498	62,294	13,773	59,179	13,048	56,065	11,598	49,835
SHALLOW WATER GROUPERS	49,776	46,656	55,542	48,648	52,765	46,216	49,988	43,783	44,434	38,918
Red hind	18,303	6,564	24,350	8,734	23,133	8,297	21,915	7,861	19,480	6,987
Rock hind	23,115	14,838	22,833	14,660	21,691	13,927	20,550	13,194	18,266	11,728
Yellowmouth grouper	44	3,995	44	3,995	42	3,795	40	3,596	35	3,196
Yellowfin grouper	4,879	4,379	4,879	4,379	4,635	4,160	4,391	3,941	3,903	3,503
Coney	665	2,053	665	2,053	632	1,950	599	1,848	532	1,642
Graysby	2,771	14,827	2,771	14,827	2,632	14,086	2,494	13,344	2,217	11,862
INDIVIDUAL STOCKS										
Atlantic spadefish	35,108	154,352	150,552	661,926	143,025	628,830	135,497	595,733	120,442	529,541
Bar jack	5,265	19,515	11,023	40,852	12,567	46,570	11,905	44,119	10,582	39,217
Gray triggerfish	272,880	353,638	312,325	404,675	296,709	384,441	281,093	364,207	249,860	323,740
Scamp	333,100	176,688	243,750	129,299	231,563	122,834	219,375	116,369	195,000	103,439

Table 4.3.9. Stock or stock complex differences in commercial and recreational for ACLs (lbs ww) for alternatives in Action 3 based on preferred alternatives in Action 2.
Highlighted cells indicate South Atlantic Council's preferred ACL change.

STOCK OR STOCK COMPLEX NAME	Alt 1 (No Action)		Alt 2 ACL=OY=ABC		Alt 3 ACL=OY=95%ABC		Alt 4 ACL=OY=90%ABC		Alt 5 ACL=OY=80%ABC	
	Comm	Rec	Diff Comm	Diff Rec	Diff Comm	Diff Rec	Diff Comm	Diff Rec	Diff Comm	Diff Rec
SNAPPERS	215,662	728,577	129,222	444,255	111,978	385,614	94,733	326,972	60,245	209,689
Gray snapper	192,830	602,913	109,350	342,039	94,241	294,791	79,132	247,544	48,914	153,049
Lane snapper	17,695	102,289	12,319	71,183	10,818	62,509	9,318	53,836	6,316	36,489
Cubera snapper	4,829	19,851	7,552	31,034	6,933	28,489	6,314	25,945	5,076	20,856
Dog snapper	273	3,012	0	0	-14	-151	-27	-301	-55	-602
Mahogany snapper	36	512	0	0	-2	-26	-4	-51	-7	-102
GRUNTS	218,539	588,113	-636	30,009	-11,531	-897	-22,426	-31,803	-44,217	-93,615
White grunt	212,896	461,136	-9,492	-20,652	-19,661	-42,676	-29,832	-64,700	-50,172	-108,749
Sailors choice	0	22,674	0	0	0	-1,134	0	-2,267	0	-4,535
Tomtate	0	80,056	0	12,614	0	7,981	0	3,347	0	-5,920
Margate	5,643	24,246	8,856	38,048	8,130	34,933	7,405	31,819	5,955	25,589
SHALLOW WATER GROUPERS	49,776	46,656	5,766	1,992	2,989	-440	212	-2,873	-5,342	-7,738
Red hind	18,303	6,564	6,047	2,171	4,830	1,733	3,612	1,297	1,177	423
Rock hind	23,115	14,838	-282	-178	-1,424	-911	-2,565	-1,644	-4,849	-3,110
Yellowmouth grouper	44	3,995	0	0	-2	-200	-4	-400	-9	-799
Yellowfin grouper	4,879	4,379	0	0	-244	-219	-488	-438	-976	-876
Coney	665	2,053	0	0	-33	-103	-67	-205	-133	-411
Graysby	2,771	14,827	0	0	-139	-741	-277	-1,483	-554	-2,965
INDIVIDUAL STOCKS									0	0
Atlantic spadefish	35,108	154,352	115,444	507,574	107,917	474,478	100,389	441,381	85,334	375,189
Bar jack	5,265	19,515	5,759	21,336	7,302	27,055	6,640	24,604	5,318	19,701
Gray triggerfish	272,880	353,638	39,445	51,037	23,829	30,803	8,212	10,569	-23,020	-29,898
Scamp	333,100	176,688	-89,350	-47,390	-101,537	-53,854	-113,725	-60,319	-138,100	-73,249

Alternatives 3-5 and associated sub-alternatives would have a greater positive biological effect than **Alternative 2** and associated sub-alternatives because they would create a buffer between the ACL/OY and ABC, with **Alternative 5** and associated sub-alternatives setting the most conservative ACL at 80% of the ABC (**Tables 4.3.1-4.3.8**). Creating a buffer between the ACL/OY and ABC would provide greater assurance that overfishing is prevented, and the long-term average biomass is near or above SSB_{MSY}. However, the South Atlantic Council's ABC control rule takes into account scientific uncertainty. The National Standard 1 guidelines indicate the ACL may typically be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur.

Alternatives under **Action 3** would increase the ACL for some species or species complexes or decrease the ACL for species or species complexes. For most species and species complexes affected by the actions in this amendment, the ACLs are currently not being met. If harvest is less than the proposed ACLs, biological effects would be expected to be minimal.

Regardless of the alternative or sub-alternative selected, none is anticipated to have adverse effects on listed coral species, large whales, or any distinct population segment (DPS) of Atlantic sturgeon. Previous Endangered Species Act (ESA) consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect listed coral species, large whales, or any DPS of Atlantic sturgeon. For the species that may interact with the fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. The impacts from **Alternatives 2-5** (and associated sub-alternatives) on sea turtles and smalltooth sawfish are unclear. If alternatives, which increase ACLs, lead to greater fishing effort in the fishery as a whole, both preferred alternatives would likely be less biologically beneficial to sea turtles and smalltooth sawfish. Conversely, if the proposed ACL increases do not increase fishing effort as a whole but simply shift the level of existing effort then these alternatives are unlikely to change the level of interaction between sea turtles and smalltooth sawfish and the fishery as a whole. Based on the same rationale, alternatives that result in the smallest ACLs are likely to have more biological benefit to sea turtles and smalltooth sawfish than those alternatives that result in larger ACLs.

Regardless of the alternative or sub-alternatives selected as preferred, none is expected to have impacts on essential fish habitat or HAPCs. ACLs for some species may increase, potentially causing increased effort in the snapper grouper fishery. However, this increased effort is not expected to have an impact on habitat.

4.3.2 Economic Effects

Alternative 1 (**No Action**) would not change the ACLs for any snapper grouper species or complex, whereas **Alternatives 2-5** would change the ACLs for three species complexes and four species. None of the alternatives of **Action 3** would affect the ACL of the Deepwater Complex or status quo net economic benefits that derive from landings of the Deepwater Complex. Among the action alternatives,

Alternative 2 would allow for the largest increases in the ACLs, followed in turn by **Alternatives 3**, **4**, and **5**.

Preferred Sub-alternatives 2a-2e and **2g** would generate the largest increases in the total ACLs for Atlantic spadefish, bar jack, gray triggerfish, Grunts Complex, Shallow Water Grouper Complex and Snappers Complexes. **Sub-alternative 5f** would generate the largest decrease in the total ACL for scamp, followed in turn by **Preferred Sub-alternatives 4f**, **3f**, **2f**, and **Alternative 1 (No Action).** These changes represent potential changes in net economic benefits that derive from landings of the three complexes and four species. Actual economic impacts are dependent on baseline landings relative to the current and revised ACLs.

None of the alternatives are expected to change annual commercial landings of Atlantic spadefish, Grunts Complex, scamp, Shallow Water Grouper Complex, or Snappers Complex because baseline landings are less than the current and alternative commercial ACLs (**Table 4.3.10**). **Preferred Sub-alternative 2g** yields the largest increase in annual commercial landings of gray triggerfish and associated economic net benefits, followed in turn by **Sub-alternatives 3g** and **4g.** **Alternative 5** would reduce annual commercial landings and associated economic benefits from gray triggerfish. **Preferred Sub-alternative 2d** and **Sub-alternatives 3d**, **4d**, and **5d** would generate the same increase in commercial landings of and associated economic benefits from bar jack.

Table 4.3.10. Comparison of baseline commercial landings and alternative commercial ACLs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells represent where commercial ACL for gray triggerfish would be less than its baseline landings.

Species or Complex	Commercial ACL (lbs ww)					Baseline landings (lbs ww)
	1	2	3	4	5	
Atlantic Spadefish (a)	35,108	150,552	143,025	135,497	120,442	2,747 - 15,284
Bar Jack (d)	5,265	13,228	12,567	11,905	10,582	5,161 - 6,694
Gray Triggerfish (g)	272,880	312,325	296,709	281,093	249,860	295,858 - 307,606
Grunts (b)	218,539	217,903	207,008	196,113	174,322	91,310 - 100,785
Scamp (f)	333,100	243,750	231,563	219,375	195,000	153,253 - 193,412
Shallow Water Grouper (c)	49,776	55,542	52,765	50,823	46,105	18,615 - 35,424
Snappers (e)	215,662	344,884	327,640	310,549	275,907	78,101 - 129,303

A comparison of baseline recreational landings and the alternative recreational ACLs shows none of the alternatives of Action 3 would produce a change in annual recreational landings of Atlantic spadefish, bar jack, Grunts Complex, scamp, Shallow Water Grouper Complex, or Snappers Complex (**Table 4.3.11**). **Preferred Sub-alternative 2g** and **Sub-alternative 3g** would yield the same increases in recreational landings of and associated economic benefits from gray triggerfish. **Sub-alternatives 4g** and **5g** would reduce annual recreational landings of and associated economic benefits from gray triggerfish, with **Sub-alternative 5g** having the largest adverse impact.

Table 4.3.11. Comparison of baseline recreational landings and recreational ACLs based on alternatives in Action 3 and preferred alternatives in Action 2. Highlighted cells represent where recreational ACL would be less than baseline landings.

Species or Complex	Recreational ACL (lbs ww)					Baseline landings (lbs ww)
	1	2	3	4	5	
Atlantic Spadefish (a)	154,352	661,926	628,830	595,733	529,541	120,492
Bar Jack (d)	19,515	49,021	46,570	44,119	39,217	2,384
Gray Triggerfish (g)	353,638	404,675	384,441	364,207	323,740	378,725
Grunts (b)	588,113	618,122	588,350	558,577	499,032	383,850
Scamp (f)	176,688	129,299	122,834	116,369	103,439	62,130
Shallow Water Grouper (c)	46,656	48,648	47,478	46,309	43,969	23,256
Snappers (e)	728,577	1,172,832	1,114,190	1,055,549	938,766	616,216

4.3.3 Social Effects

The specified catch levels can have substantial negative effects when an ACL is met or exceeded, in which case AMs, which restrict or close harvest, could negatively impact the commercial fleet, for-hire fleet, and private anglers. In general, the higher the ACL, the greater the short-term social and economic benefits that would be expected to accrue, assuming overfishing does not occur. Adherence to sustainable harvest goals is assumed to result in net long-term positive social and economic benefits. Additionally, adjustments in an ACL based on updated information from a stock assessment would be the most beneficial in the long term to fishermen and communities because catch limits would be based on the current conditions.

Because **Alternative 1 (No Action)** would not update the ACLs based on the ABCs specified in **Action 2**, commercial and recreational fishermen could not benefit from the proposed increases in harvest levels, which reduce the likelihood of triggering an in-season closure or payback provision due to an overage. Additionally, under **Alternative 1 (No Action)** the ACLs would not be based on the most updated, relevant information about the stocks that is provided in the ORCS methodology as they are in **Alternatives 2-5**. **Alternatives 2-5** would update the ACLs based on the ABCs specified in **Action 2**, but depending on the percentage of the ABC that is selected, could only provide benefits to the fishermen if the proposed ACL is an increase over the current ACL for a given stock. **Preferred Sub-alternatives 2a, 2b, 2c, 2d, 2e,** and **2g** would be the most beneficial to fishermen targeting these species by setting the ACL at the highest level allowed by the ABC specified in **Action 2**, and **Sub-alternatives 5a-5g** under **Alternative 5** would be the least beneficial, with the exception of scamp under **Sub-alternative 5f,** which provides an additional buffer for scamp to reduce the risk of overfishing. However, because the ABCs set in **Action 2** are based on ORCS methodology and for stocks with limited available data, a buffer as in **Alternatives 3-5** could be more beneficial to resource users in the long term, if future data indicate the ABCs should be lower.

4.3.4 Administrative Effects

Alternatives that result in higher ACLs for species or species complexes could slightly reduce administrative burdens because the likelihood of triggering AMs would be reduced. Conversely, alternatives that decrease ACLs could increase the administrative burden because it would be more likely that AMs would be triggered, and action would be needed to ensure overfishing did not occur. Administrative burdens also may result from revising the values under the alternatives in the form of development and dissemination of outreach and educational materials for fishery participants and law enforcement.

4.4 Action 4: Modify the minimum size limit for gray triggerfish

Alternatives for Action 4

Alternative 1 (No Action). The minimum size limit is 12 inches total length (TL) in federal waters off the east coast of Florida and 12 inches fork length (FL) in state waters off the east coast of Florida.

Alternative 2. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off the east coast of Florida.
Sub-alternative 2a. The minimum size limit applies to the commercial sector.
Sub-alternative 2b. The minimum size limit applies to the recreational sector.

Preferred Alternative 3. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off North Carolina, South Carolina, and Georgia.
Preferred Sub-alternative 3a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 3b. The minimum size limit applies to the recreational sector.

Alternative 4. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off North Carolina, South Carolina, Georgia, and the east coast of Florida.
Sub-alternative 4a. The minimum size limit applies to the commercial sector.
Sub-alternative 4b. The minimum size limit applies to the recreational sector.

Preferred Alternative 5. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off the east coast of Florida.
Preferred Sub-alternative 5a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 5b. The minimum size limit applies to the recreational sector.

4.4.1 Biological Effects

Currently, the commercial and recreational minimum size limit for South Atlantic gray triggerfish is 12 inches total length (TL) in federal waters off the east coast of Florida and 12 inches fork length (FL) in east Florida state waters (**Alternative 1, No Action**). In the Gulf of Mexico EEZ, and in state waters off the west coast of Florida, the commercial and recreational minimum size limit is 14 inches FL. The South Atlantic Council is considering alternatives to modify the minimum size limit.

A stock assessment for South Atlantic gray triggerfish (SEDAR 32 2013) provided an equation to estimate TL from a FL measurement (**Table 4.4.1**). Unfortunately, significant discrepancies in ageing led the analysts to postpone completion of the assessment until 2015. Based on this equation, a 12-inch TL gray triggerfish is equal to a 10.46 inch FL gray triggerfish. SEDAR 32 determined the mid-range of discard mortality to be 12.5%. This information was used in the size limit analysis for **Action 4**. Additional information on the details on the gray triggerfish size limit analysis can be found in **Appendix G**.

Table 4.4.1. Total length to fork length conversions for South Atlantic gray triggerfish.

Conversion	Model
Total Length (mm) to Fork Length (mm)	Total Length = 1.19*(Fork Length) – 11.42

Source: SEDAR 32.

Commercial Sector

Alternative 1 (No Action) would retain the minimum size limit for gray triggerfish at 12 inches TL in federal waters off east Florida and 12 inches FL in east Florida state waters. During 2007-2012, there was a slight increase in average length of gray triggerfish harvested by the commercial sector (**Table 4.4.2** and **Figure 4.4.1**).

Table 4.4.2. Average fork length of gray triggerfish for the South Atlantic commercial sector by year, 2007-2012.

Year	Average Fork Length (inches)	Number measured (n)
2007	15.07	1,882
2008	14.98	1,714
2009	14.73	1,845
2010	15.36	2,148
2011	15.42	2,680
2012	15.29	1,862

Source: SEFSC Trip Interview Program (TIP) data.

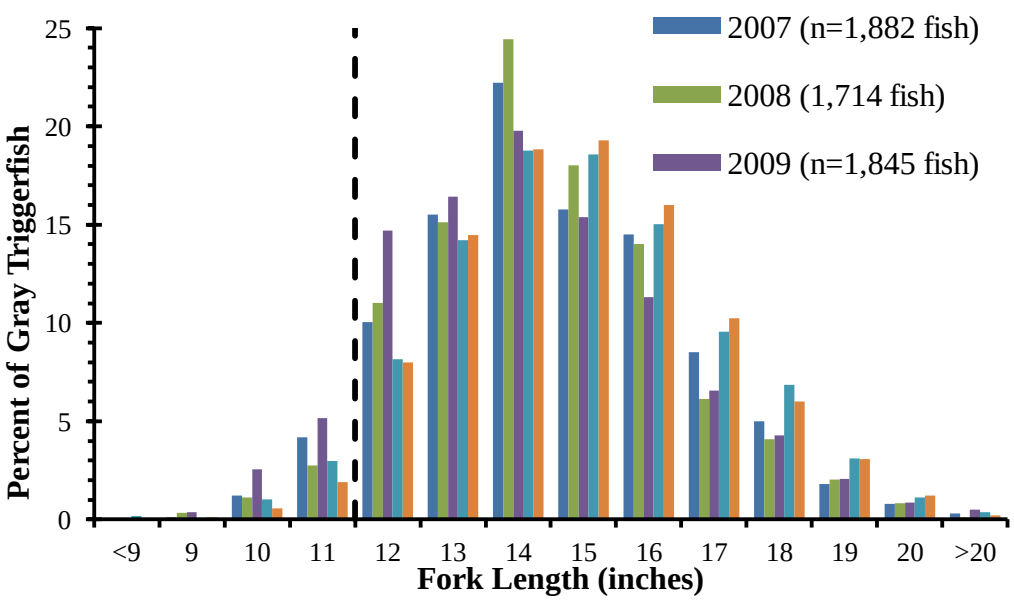

Figure 4.4.1. Distribution of gray triggerfish lengths by year for the commercial sector in the South Atlantic. Note: dashed line represents 12 inches folk length.

Alternative 2 would specify a minimum size limit for gray triggerfish of 12 inches FL in federal waters off east Florida. Currently the commercial and recreational minimum size limit for South Atlantic gray triggerfish is 12 inches TL in federal waters off east Florida and 12 inches FL in east Florida state waters. Under **Alternative 2**, commercial harvest of gray triggerfish in Florida could be reduced by 2.1% (± 2.0%) in 2014. On a monthly basis, this might reduce commercial landings in Florida by up to 6% (**Table 4.4.3**). On average, during 2007-2012, commercial landings in Florida accounted for 19% (± 5%) of the annual gray triggerfish commercial harvest in the South Atlantic (**Table 4.4.3**). As this reduction is only 2.1% of 19% of the total harvest, it is relatively minor (0.4% reduction), and only adds around one fishing day to the season (**Table 4.4.4**).

Table 4.4.3. Mean percent commercial gray triggerfish landings in Florida between 10.46 – 12 inches FL, during 2007-2012.

MONTH	MEAN (2007-2012)	SD	N
January	0%	1%	435
February	0%	0%	257
March	1%	1%	304
April	1%	1%	109
May	0%	1%	175
June	0%	0%	209
July	6%	7%	367
August	5%	6%	378
September	0%	1%	223
October	2%	6%	165
November	6%	14%	132
December	4%	5%	232

Table 4.4.4. Projected commercial gray triggerfish quota closure dates for the 2014 fishing season under **Alternative 2** (12" FL off east Florida) for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	26-Jul	No Closure	21-Apr
312,325	Action 3, Alt 2	19-Aug	No Closure	12-May
296,709	Action 3, Alt 3	9-Aug	No Closure	3-May
281,093	Action 3, Alt 4	2-Aug	No Closure	26-Apr
249,860	Action 3, Alt 5	8-Jul	No Closure	8-Apr

Currently there is no minimum size limit off North Carolina, South Carolina, and Georgia, which account for 81% of the gray triggerfish commercial landings, and the minimum size limit for South Atlantic gray triggerfish is 12 inches TL (10.46 inches FL) in federal waters off east Florida and 12 inches FL in east Florida state waters. **Preferred Alternative 3** would specify a minimum size limit for gray triggerfish of 12 inches FL in federal waters off North Carolina, South Carolina, and Georgia. Establishing a 12-inch FL minimum size limit off Georgia, South Carolina, and North Carolina, with no change in the minimum size limit off east Florida, would provide a slight reduction in harvest rates of

gray triggerfish (**Table 4.4.5**). These reductions in harvest would extend the gray triggerfish season by 2-4 days (**Table 4.4.6**).

Table 4.4.5. Mean percent of commercial gray triggerfish landings less than 12 inches FL in the South Atlantic during 2007-2012.

MONTH	MEAN	SD
January	2%	2%
February	2%	1%
March	2%	1%
April	1%	1%
May	2%	1%
June	3%	1%
July	4%	4%
August	3%	3%
September	2%	1%
October	2%	3%
November	2%	3%
December	4%	1%

Table 4.4.6. Projected commercial gray triggerfish quota closure dates for the 2014 fishing season under **Preferred Alternative 3** (12" FL off NC, SC, and GA) for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	30-Jul	No Closure	23-Apr
312,325	Action 3, Alt 2	21-Aug	No Closure	15-May
296,709	Action 3, Alt 3	11-Aug	No Closure	5-May
281,093	Action 3, Alt 4	4-Aug	No Closure	28-Apr
249,860	Action 3, Alt 5	11-Jul	No Closure	10-Apr

Alternative 4 would specify a minimum size limit for gray triggerfish of 14 inches FL in federal waters off North Carolina, South Carolina, Georgia, and east Florida, which is equal to the minimum size limit that is currently in place in state and federal waters of west Florida and the Gulf of Mexico. Establishing a minimum size limit of 14 inches FL off Georgia, South Carolina, and North Carolina, and increasing the federal minimum size limit off east Florida, would provide a reduction in harvest rates under **Alternative 4** (**Table 4.4.7**). These reductions would extend the gray triggerfish season by 25-37 days (**Table 4.4.8**).

Preferred Alternative 5 would specify a 14-inch FL minimum size limit for gray triggerfish in federal waters off east Florida. If only **Preferred Alternative 5** is selected, the commercial fishing season would be extended by 3 to 7 days (**Table 4.4.9**). If both **Preferred Alternatives 3** and **5** are selected, the commercial fishing season would be extended by 6 to 11 days (**Table 4.4.10**)

Table 4.4.7. Mean percent of commercial gray triggerfish landings less than 14 inches FL in the South Atlantic during 2007-2012.

MONTH	MEAN	SD
January	14%	3%
February	12%	5%
March	15%	5%
April	15%	5%
May	19%	7%
June	25%	7%
July	26%	5%
August	25%	7%
September	22%	11%
October	14%	11%
November	11%	7%
December	19%	4%

Table 4.4.8. Projected commercial gray triggerfish quota closure dates for the 2014 fishing season under Alternative 4 (14" FL off NC, SC, GA, and FL) for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	31-Aug	No Closure	16-May
312,325	Action 3, Alt 2	20-Sep	No Closure	11-Jun
296,709	Action 3, Alt 3	11-Sep	No Closure	30-May
281,093	Action 3, Alt 4	4-Sep	No Closure	21-May
249,860	Action 3, Alt 5	14-Aug	No Closure	1-May

Table 4.4.9. Projected commercial gray triggerfish quota closure dates for the 2014 fishing season under **Preferred Alternative 5** (14" FL off east Florida) for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	2-Aug	No Closure	24-Apr
312,325	Action 3, Alt 2	25-Aug	No Closure	16-May
296,709	Action 3, Alt 3	15-Aug	No Closure	7-May
281,093	Action 3, Alt 4	7-Aug	No Closure	29-Apr
249,860	Action 3, Alt 5	13-Jul	No Closure	11-Apr

Table 4.4.10. Projected commercial gray triggerfish quota closure dates for the 2014 fishing season under combined effects of **Preferred Alternative 3** and **Preferred Alternative 5** for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	5-Aug	No Closure	27-Apr
312,325	Action 3, Alt 2	29-Aug	No Closure	19-May
296,709	Action 3, Alt 3	18-Aug	No Closure	9-May
281,093	Action 3, Alt 4	10-Aug	No Closure	2-May
249,860	Action 3, Alt 5	17-Jul	No Closure	13-Apr

There would be little difference in the biological benefits of **Alternatives 1 (No Action)-5,** since the establishment of a minimum size limit would not be very restrictive on the commercial harvest of gray triggerfish. A minimum size limit of 12 inches FL for North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** would provide slightly greater spawning opportunities for gray triggerfish, relative to no action (**Alternative 1**). A minimum size limit of 14 inches FL under **Alternative 4** (North Carolina, South Carolina, Georgia, and east Florida), and **Preferred Alternative 5** (east Florida only) would provide the greatest spawning opportunities among the alternatives considered. Therefore, biological benefits would be greatest for **Alternative 4**, followed by **Preferred Alternative 5**, **Preferred Alternative 3**, **Alternative 2**, and **Alternative 1** (**No Action**) for the commercial sector.

Recreational Sector

A recreational ACL of 367,303 lbs ww was implemented for the South Atlantic gray triggerfish recreational sector in the Comprehensive ACL Amendment on April 16, 2012 (SAFMC 2011c). However, this ACL was based on Marine Recreational Fisheries Statistics Survey (MRFSS) data, and the recreational survey method was recently modified and changed to the Marine Recreational Information Program (MRIP). Effective July 17, 2013, Regulatory Amendment 13 (SAFMC 2013a) revised the gray triggerfish recreational ACL using MRIP data, which resulted in a recreational ACL of 353,638 lbs ww. **Table 4.4.11** shows the proposed recreational ACLs for gray triggerfish based on the ABC for gray triggerfish specified under **Preferred Sub-alternative 4a** in **Action 2**. Applying the proposed alternatives in **Action 3** to that ABC would result in the ACLs listed in **Table 4.4.11.** Recreational landings from 2007 to 2012 are provided for comparison. Recreational landings for 2011-2012 would not have exceeded the proposed ACLs under **Alternatives 2-5** of **Action 3**.

Table 4.4.11. Annual recreational landings for gray triggerfish in the South Atlantic (2007-2012) compared with the current recreational ACL and the proposed commercial ACLs from Action 3.

Year	Landings (lbs ww)	Act 3 Alt 1	% of Alt 1	Act 3 Alt 2	% of Alt 2	Act 3 Alt 3	% of Alt 3	Act 3 Alt 4	% of Alt 4	Action 3 Alt 5	% of Alt 5
2007	490,370	353,638	139%	404,675	121%	384,441	128%	364,207	135%	323,740	151%
2008	587,697	353,638	166%	404,675	145%	384,441	153%	364,207	161%	323,740	182%
2009	537,773	353,638	152%	404,675	133%	384,441	140%	364,207	148%	323,740	166%
2010	462,836	353,638	131%	404,675	114%	384,441	120%	364,207	127%	323,740	143%
2011	355,817	353,638	101%	404,675	88%	384,441	93%	364,207	98%	323,740	110%
2012	351,030	353,638	99%	404,675	87%	384,441	91%	364,207	96%	323,740	108%

Source: SEFSC ACL Data (November 2013).
***Note. An ACL was not established for gray triggerfish until 2012.**

The average length of gray triggerfish increased during the period 2008 to 2012 (**Table 4.4.12** and **Figure 4.4.2**). Changes in fish size over time can influence the reduction of landings estimated from changes in the minimum size limit. To control for this impact, only data from the previous three years (2010-2012) were used for size limit analysis. These are also the three most recent fishing years, which most likely represent future landings.

Table 4.4.12. Average fork length of gray triggerfish for the South Atlantic recreational sector, 2008-2012.

Year	Average Fork Length (inches)	n
2008	13.4	832
2009	13.5	1,055
2010	13.6	1,863
2011	13.8	1,487
2012	13.8	1490

Source: MRIP and headboat survey.

Figure 4.4.3 shows the distribution of length information from the Florida east coast based on data from MRIP intercepts. Headboat length data were not included since there is no information on location of catch in federal and state waters.

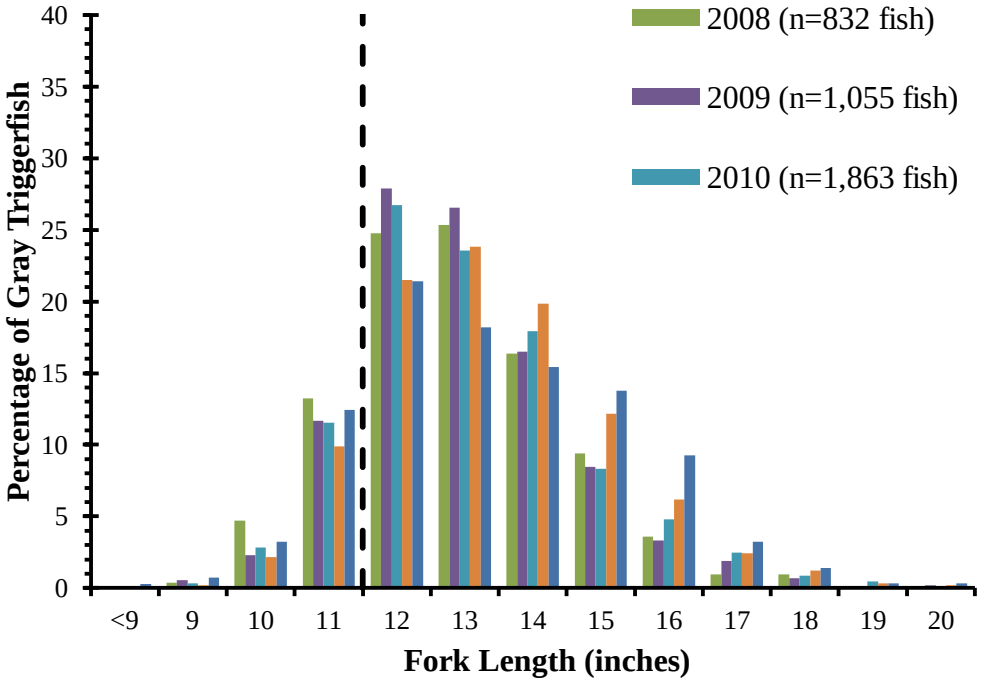

Figure 4.4.2. Distribution of South Atlantic gray triggerfish lengths by year from the recreational sector, 2008-2012.
MRIP and headboat data are included. Dashed line represents 12 inches fork length.

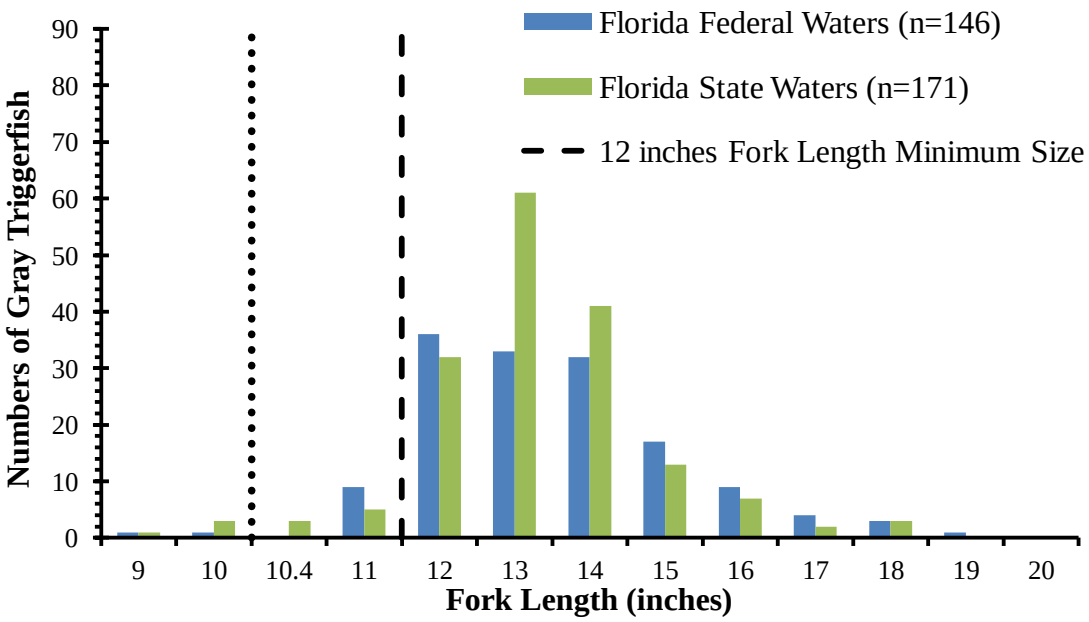

Figure 4.4.3. Distribution of Florida east coast gray triggerfish lengths from the recreational sector separated by catches in federal and state waters, 2010-2012.
Dotted line represents 10 inches fork length.

Alternative 2 would change the minimum size limit in federal waters off the east coast of Florida from 12 inches TL to 12 inches FL. This would be an increase from 10.46 inches FL to 12 inches FL. The percent reduction in harvest from increasing the minimum size to 12 inches FL in east Florida federal waters is shown in **Table 4.4.13.** The reduction in annual gray triggerfish landings in the South Atlantic during 2010 to 2012 resulting from a 12 inch FL minimum size limit off east Florida ranges from 0.82 to 1.06% (**Table 4.4.14**).

Table 4.4.13. Percent reduction in the South Atlantic recreational gray triggerfish landings for increasing the minimum size in Florida waters from 12 inches total length (10.46 inches FL) to 12 inches fork length (Alternative 2).

MRIP		
	Charter	Private
12 inches FL	5.3	1.5
Headboat		
January	6.3	
February	13.7	
March	7.5	
April	10.1	
May	10.9	
June	11.4	
July	10.7	
August	6.3	
September	4.5	
October	5.2	
November	3	
December	4.5	

Note: Reductions were calculated in terms of gray triggerfish weight (lb) following SERO-LAPP-2012-02. The percent reductions for MRIP were calculated for federal waters. Headboat length data did not have jurisdictional information on the catch location (federal or state waters) so the percent reductions reflect both federal and state waters combined. Monthly percent reductions were calculated for headboat data since monthly samples sizes were adequate.

Table 4.4.14. Percent reduction in annual South Atlantic recreational sector gray triggerfish landings from increasing the minimum size in Florida federal waters from 12 inches TL (10.46 inches FL) to 12 inches FL.

Year	% Reduction in Total Landings
2010	0.82
2011	1.07
2012	1.06

Note: MRIP and headboat landings included.

Preferred Alternative 3 considers a minimum size limit of 12 inches FL for gray triggerfish in federal waters of North Carolina, South Carolina, and Georgia, and no change to the minimum size limit off east Florida. Currently there is no minimum size limit off North Carolina, South Carolina, and Georgia. The percent reductions in harvest by mode from increasing the minimum size to 12 inches FL (**Preferred Alternative 3**) are shown in **Table 4.4.15**.

Table 4.4.15. Percent reductions in gray triggerfish landings for the South Atlantic recreational sector by mode from implementing a 12-inch FL minimum size limit off North Carolina, South Carolina, and Georgia (**Preferred Alternative 3**).

Mode	MRIP		Headboat
	Charter	Private	Charter
12 inches FL	6.7	1.6	8

Note: Harvest reductions were calculated in terms of gray triggerfish weight (lbs ww). The percent reductions for MRIP were calculated for federal waters. Headboat length data did not have jurisdictional information on the catch location (federal or state waters). Thus, the percent reductions reflect both federal and state waters combined.

Table 4.4.16 provides the results of the annual reduction in landings for the recreational sector (all modes combined) for 2010-2012.

Table 4.4.16. Percent reduction in annual South Atlantic gray triggerfish landings for the recreational sector from implementing a 12-inch FL size limit in North Carolina, South Carolina, and Georgia federal waters.

Year	% Reduction in Total Landings
2010	2.7
2011	2.7
2012	3.7

Note: MRIP and headboat landings included.

Alternative 4 proposes a minimum size limit of 14 inches FL for the federal waters of North Carolina, South Carolina, Georgia, and east Florida. Currently there is no minimum size limit off North Carolina, South Carolina, and Georgia. However, there is a minimum size limit in federal waters of east Florida, which would be increased from 12 inches TL to 14 inches FL. Furthermore, a 14-inch FL minimum size is in place in state and federal waters of west Florida. **Tables 4.4.17** and **4.4.18** provide percent harvest reduction results.

Table 4.4.17. Percent reduction in gray triggerfish harvest generated from MRIP data for the South Atlantic recreational sector from implementing a 14-inch FL minimum size limit in federal waters of North Carolina, South Carolina, Georgia, and east Florida (Alternatives 4 and 5).

Location	Mode	
	Charter	Private
Federal FL Waters	41.8	36.8
Federal NC, SC, and GA Waters	37.1	21.4

Note: Percent reductions were calculated in terms of gray triggerfish weight (lbs).

Table 4.4.18. Percent reduction in gray triggerfish harvest generated from headboat data for the South Atlantic recreational sector from implementing a 14-inch FL minimum size limit in North Carolina, South Carolina, Georgia, and east Florida (Alternatives 4 and 5).

	Month	Reduction
FL Waters	January	47.6
	February	50.4
	March	52.4
	April	48.9
	May	45.5
	June	54.7
	July	51.9
	August	46.6
	September	36.5
	October	38.1
	November	38.9
	December	38.1
NC, SC, and GA Waters	45.1	

Note: Percent reductions were calculated in terms of gray triggerfish weight (lbs ww). Headboat length data did not have jurisdictional information on the catch location (federal or state waters) so the percent reductions reflect both federal and state waters combined.

To reflect the management change in **Alternative 4**, the percent reductions in harvest were applied to federal waters landings on the east coast of Florida and the percent reductions in harvest generated for North Carolina, South Carolina, and Georgia were applied to the federal waters landings of those three states. The reduced east Florida federal landings and reduced North Carolina, South Carolina, and Georgia federal landings were then added to the North Carolina, South Carolina, Georgia, and east Florida state water landings.

Preferred Alternative 5 would specify a 14-inch FL minimum size limit for gray triggerfish in federal waters off east Florida. If only **Preferred Alternative 5** is selected, the expected reduction in gray triggerfish recreational harvest for the South Atlantic would range from 4.9 to 6.0% (**Table 4.4.19**). If both **Preferred Alternatives 3** and **5** are selected, the reduction in gray triggerfish harvest would range from 7.5 to 9.7% (**Table 4.4.19**).

Table 4.4.19. Percent reduction in annual South Atlantic recreational sector gray triggerfish landings from implementing size limits under Alternatives 2-5 and **Preferred Alternatives 3** and **5** combined.

Year	Alt 2	Pref Alt 3	Alt 4	Pref Alt 5	Pref Alts 3 and 5
2010	0.8	2.7	22.3	4.9	7.5
2011	1.1	3.7	21.9	6.0	8.7
2012	1.1	3.7	28.0	6.0	9.7

Note: MRIP and headboat landings included.

There would be little difference in the biological benefits of **Alternatives 1 (No Action), Alternative 2,** and **Preferred Alternative 3** since the establishment of a 12 inch FL minimum size limit under **Alternative 2** and **Preferred Alternative 3** would do little to restrict commercial or recreational harvest of gray triggerfish in the South Atlantic. A minimum size limit of 12 inch FL for North Carolina, South Carolina, and Georgia under **Preferred Alternative 3** would provide slightly greater spawning opportunities for gray triggerfish, relative to no action (**Alternative 1**). A minimum size limit of 14 inches FL under **Alternative 4** (North Carolina, South Carolina, Georgia, and east Florida), and **Preferred Alternative 5** (east Florida only) would provide the greatest spawning opportunities of the alternatives considered. Therefore, biological benefits would be greatest for **Alternative 4**, followed by **Preferred Alternatives 3** and **5** combined, **Preferred Alternative 5, Preferred Alternative 3, Alternative 2**, and **Alternative 1** (**No Action**) for the recreational sector.

In terms of discard mortality, the absence of a minimum size limit would seem most biologically beneficial. However, as mentioned previously, gray triggerfish experience low discard mortality (12.5%) and the latter was taken into account when calculating percent reductions in harvest as a result of the proposed changes. Therefore, discard mortality is not expected to result in negative biological impacts.

Modifying minimum size limits for gray triggerfish would not have an impact on habitat or HAPCs or protected species. Each alternative, regardless of the one selected, is unlikely to have adverse effects on listed coral species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect listed coral species, large whales, or any DPS of Atlantic sturgeon. For the species that may interact with the fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. For both sectors, the biological benefits to sea turtles and smalltooth sawfish are likely to be greatest from **Alternative 4**. This alternative is the most restrictive and if it ultimately reduces the overall effort in the fishery, the likelihood of interaction between these species and the fishery as a whole may decrease. However, if the alternative simply displaces effort and does not reduce it, **Alternative 4** may have very little biological benefit for these species. Following the same rationale, **Alternative 2**, **Preferred Alternative 3,** and **Preferred Alternative 5** are likely to be similar in their overall benefit to the species, which is likely to be less biologically beneficial than **Alternative 4**.

4.4.2 Economic Effects

Alternative 1 (No Action) would have no added adverse or beneficial economic impact. **Alternative 1 (No Action)** and **Sub-alternatives 2a** and **2b** would have the same economic impact on commercial and recreational fishermen of North Carolina, South Carolina, and Georgia. **Preferred Sub-alternatives 3a** and **3b** would have the second smallest adverse economic impact on commercial and recreational fishermen of North Carolina, South Carolina, and Georgia but no added economic impact on commercial or recreational fishermen of Florida. **Sub-alternatives 4a** and **4b** would have the largest adverse economic impact because it would establish the largest minimum size limit in the largest area. **Preferred Sub-alternative 5a** and **5b** would have the same adverse economic impact on commercial and recreational fishermen of Florida as **Sub-alternatives 4a** and **4b**, but no added impact on those of North Carolina, South Carolina, or Georgia because it only applies to Florida.

It is estimated that **Preferred Sub-alternative 3a** would reduce baseline commercial landings of the North Carolina, South Carolina, and Georgia from 1% to 3% and **Preferred Sub-alternative 5a** would reduce baseline commercial landings in Florida from 14% to 22% (see **Appendix I**). The combined impact of **Actions 3** and **4** is expected to be a net increase in annual commercial landings of gray triggerfish by weight and value in the South Atlantic Region; however, there would be a net beneficial impact in North Carolina, South Carolina, and Georgia and a net adverse impact in Florida. The net annual increase of dockside revenues from gray triggerfish landings in North Carolina, South Carolina, and Georgia would range from $22,548 to $27,064 if the states' combined landings represent 76% of the total and from $29,363 to $37,020 if the states' landings represent 86% of the total. The net annual decrease of dockside revenues from gray triggerfish landings in Florida would range from $4,087 to $6,803 if 14% of the landings occur in Florida or from $7,012 to $11,662 if 24% of total landings are in Florida.

It is estimated that **Preferred Sub-alternative 3b** and **Preferred Sub-alternative 5b** would reduce annual recreational landings of gray triggerfish from 12,394 to 16,984 lbs ww and from 22,493 to 27,542 lbs ww, respectively. If North Carolina, South Carolina, and Georgia recreational fishermen harvest gray triggerfish in federal waters north of Florida, their combined losses would be the economic losses from decreases of 12,394 to 16,984 lbs ww. Similarly, if Florida recreational fishermen stay in federal waters off Florida, their annual economic losses would be from the reduction of 22,493 lbs ww to 27,542 lbs ww of gray triggerfish they could no longer land.

4.4.3 Social Effects

Gray triggerfish is an increasingly important commercial and recreational species, with growing effort and market demand associated with closures for other species. Gray triggerfish is an important part of the commercial sector of the snapper grouper fishery in the communities of Murrells Inlet, Little River, and Charleston in South Carolina; Mayport and St. Augustine in north Florida; and the North Carolina communities of Winnabow, Beaufort, Morehead City, Shallotte, and Sneads Ferry (**Figure 3.3.26**). Although commercial fishermen in these communities likely do not depend completely on gray triggerfish to maintain their operations, the species is an important part of the catch combination for

fishing trips, particularly those targeting vermilion snapper. Any management changes that affect the commercial sector could affect crew and vessel owners, and associated businesses in the communities.

Gray triggerfish is also a popular menu item at restaurants in coastal communities in the South Atlantic. As with other regional species, gray triggerfish is marketed as a unique regional dish that contributes to the overall experience of visiting a coastal community. Changes that restrict or modify access for the commercial sector could also affect availability of gray triggerfish for restaurants, which are associated with tourism and local economies in many coastal areas. Particularly with the expansion of the local food movement and the increase in culinary tourism, consistent availability of locally caught species is important to many restaurant owners and chefs, and associated staff and businesses. Additionally, gray triggerfish has grown in popularity for the recreational sector, and is an important target species in private and for-hire trips for many recreational anglers, including coastal residents and tourists visiting a coastal area. **Section 3.3.2** includes information about the important recreational fishing communities in the South Atlantic that could be affected by changes in gray triggerfish management measures.

Different regulations among states and between state and federal waters can have negative consequences by reducing compliance and making enforcement difficult. Changing the minimum size limit to measure in fork length under **Alternative 2** to be consistent with the east Florida minimum size limit requirements in state waters would be beneficial to commercial (**Sub-alternative 2a**) and recreational (**Sub-alternative 2b**) fishermen in Florida waters, by removing inconsistency between the state and federal requirements that would continue under **Alternative 1 (No Action)**. Establishing a minimum size limit for federal waters of North Carolina, South Carolina, and Georgia (**Alternative 3** and **Alternative 4**) would make the federal regulations consistent for the EEZ of all the South Atlantic states for commercial (**Preferred Sub-alternative 3a** and **Sub-alternative 4a**) and recreational (**Preferred Sub-alternative 3b** and **Sub-alternative 4b**) fishermen. Further, a 14-inch FL minimum size limit specified in **Alternative 4** for recreational (**Sub-alternative 4b**) and commercial fishermen (**Sub-alternative 4a**) for all states would allow for consistent regulations in the Gulf of Mexico and South Atlantic; inconsistent regulations are particularly troublesome for both recreational and commercial fishermen in the Florida Keys. **Preferred Alternative 5** would also remove the inconsistency between federal regulations for commercial (**Preferred Sub-alternative 5a**) and recreational (**Preferred Sub-alternative 5b**) fishermen working in both the Gulf of Mexico and South Atlantic, but would be inconsistent with Florida's current minimum size requirement in state waters. Overall, consistency among state and federal regulations is a common concern and request from commercial and recreational fishermen and enforcement.

Preferred Alternative 3, Preferred Sub-alternatives 3a/**3b**, and **Alternative 4, Sub-alternatives 4a**/**4b** could have some negative effects on recreational and commercial fishermen harvesting gray triggerfish in the EEZ of states that currently do not have size limits by reducing the number of fish that can be kept. Because **Alternative 1 (No Action), Alternative 2, Sub-alternatives 2a** and **2b,** and **Alternative 5, Preferred Sub-alternatives 5a**/**5b** would not implement minimum size limits for the states without a size limit, there would be no expected effects on commercial or recreational fishermen targeting gray triggerfish in North Carolina, South Carolina, and Georgia.

Some social effects of minimum size limits would be associated with the positive and negative biological effects of minimum size limits on the gray triggerfish stock (**Section 4.4.1**). Positive effects

of allowing only fish of a certain size that are caught in the South Atlantic EEZ to be landed could help maintain sustainability of harvest and the health of the stock, which would be beneficial to recreational and commercial fishermen in the long term. Negative effects of potential increases in discard mortality due to a newly established size limit in North Carolina, South Carolina, and Georgia under **Alternative 3, Preferred Sub-alternatives 3a**/**3b** and **Alternative 4, Sub-alternatives 4a**/**4b**, compared to allowing all fish to be landed in those states under **Alternative 1 (No Action)**, **Alternative 2**, and **Preferred Alternative 5, Preferred Sub-alternatives 5a**/**5b,** could affect the stock and in turn, commercial and recreational fishing opportunities. Florida fishermen would experience increased discards under **Preferred Alternative 5**. However, survival of released gray triggerfish is estimated to be very high (SEDAR 32 determined the mid-range of discard mortality to be 12.5%) and larger minimum size limits could have minimal negative effects on the stock.

Implementation of a minimum size limit for the EEZ off North Carolina, South Carolina, and Georgia would likely have more impact on recreational fishermen and for-hire businesses targeting gray triggerfish. Under **Preferred Alternative 3, Preferred Sub-alternatives 3a**/**3b** a small reduction in recreational landings is expected if the 12-inch FL minimum size is required for states that currently do not have a minimum size requirement (**Table 4.4.18**). However, under **Alternative 4**, recreational landings are expected to be reduced substantially if a 14-inch FL minimum size requirement was implemented (**Table 4.4.20**). For recreational fishermen targeting gray triggerfish in Florida, the increase in the minimum size limit under **Alternative 4** and **Preferred Alternative 5, Preferred Sub-alternatives 5a/5b** could change fishing behavior and opportunities to land gray triggerfish caught by recreational fishermen. However, the reduction in recreational landings estimated under **Preferred Sub-alternatives 3a, 3b, 5a,** and **5b** is not as high (**Table 4.4.21**), and would have less negative effects on recreational fishermen and for-hire trips that target gray triggerfish than under **Alternative 4**.

4.4.4 Administrative Effects

Beneficial administrative effects would be expected from **Alternative 2**, **Preferred Alternative 3**, **Alternative 4**, and **Preferred Alternative 5** when compared with **Alternative 1** (**No Action**). Alternatives that specify a consistent minimum size limits in state and federal waters throughout the South Atlantic Council's jurisdiction would help the public avoid confusion with regulations and aid law enforcement. **Alternative 4** and **Preferred Alternative 5** would avoid confusion with regulations and aid law enforcement by specifying the same minimum size limit (14 inches TL) that is specified in federal waters of the Gulf of Mexico and in state waters of west Florida. Administrative impacts on the agency associated with the action alternatives would be incurred by rulemaking, outreach, education and enforcement.

4.5 Action 5. Establish a commercial split season for gray triggerfish

4.5.1 Biological Effects

Alternatives for Action 5

Alternative 1 (No Action). The commercial fishing year for gray triggerfish is the calendar year (January 1- December 31). The commercial ACL is allocated for the entire year.

Preferred Alternative 2. Allocate the directed commercial gray triggerfish ACL into two quotas: 50% to the period January 1 through June 30 and 50% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Alternative 3. Allocate the directed commercial gray triggerfish ACL into two quotas: 40% to the period January 1 through June 30 and 60% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Action 5 would divide the commercial fishing season for gray triggerfish into two time periods. The purpose of **Action 5** would be to provide opportunities to fish for gray triggerfish throughout South Atlantic and throughout the calendar year. With the specification of an ACL for gray triggerfish through the Comprehensive ACL Amendment in 2012 (SAFMC 2011c), and Regulatory Amendment 13 in 2013 (SAFMC 2013a), in-season closures have taken place when the ACLs have been met. In 2012, when the commercial ACL was 305,262 lbs ww, commercial harvest of gray triggerfish closed on September 11, 2012, but was reopened from December 12 to December 19. In 2013, the ACL was decreased to 272,880 lbs ww, and commercial harvest for gray triggerfish was closed on July 7, and reopened from October 18 to November 14. **Action 3** proposes commercial ACLs for gray triggerfish based on the preferred alternative for ABC (**Preferred Sub-alternative 4d**) in **Action 2**.

Alternative 1 (No Action) would maintain the current 12-month time period for harvest of the commercial ACL. **Table 4.5.1** shows the expected dates the commercial ACLs proposed in **Action 3** would be met, assuming a 12-inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14-inch FL minimum size limit is put into place for east Florida under (**Preferred Alternatives 3** and **5** under **Action 4**).

Table 4.5.1. Expected dates the gray triggerfish ACL based on Action 3 alternatives is expected to be met under Action 5, Alternative 1 (No Action), assuming a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida under (Preferred Alternatives 3 and 5 under Action 4).

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	5-Aug	No Closure	27-Apr
312,325	Action 3, Alt 2	29-Aug	No Closure	19-May
296,709	Action 3, Alt 3	18-Aug	No Closure	9-May
281,093	Action 3, Alt 4	10-Aug	No Closure	2-May
249,860	Action 3, Alt 5	17-Jul	No Closure	13-Apr

Preferred Alternative 2 and **Alternative 3** would allocate the directed commercial gray triggerfish ACL into seasonal quotas. By dividing the commercial ACL into two six-month fishing quotas,

fishermen would be given the opportunity to fish for gray triggerfish at the beginning of the year and during the summer. The divided commercial quota would provide fishermen in the northern and southern areas of the South Atlantic a chance to fish for gray triggerfish when weather conditions are favorable in their respective areas.

Preferred Alternative 2 would allocate 50% of the commercial gray triggerfish ACL to January 1 through June 30, and 50% to July 1 through December 31. As a result, the current commercial ACL or proposed commercial ACLs in **Action 3** would be divided into two seasonal quotas of equal amounts (**Table 4.5.2**). For **Alternative 1 (No Action)** the two seasonal quotas would be 136,440 lbs ww. For the ACLs proposed under **Action 3**, the two seasonal quotas would range from 124,930 lbs ww to 156,163 lbs ww. Any remaining quota from season 1 would transfer to season 2 but any remaining ACL from season 2 would not be carried forward.

Table 4.5.2. Expected dates the gray triggerfish semi-annual quotas (based on ACL alternatives in Action 3) would have been met for January-June and July-December split seasons (**Preferred Alternative 2)**, assuming a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (**Preferred Alternatives 3** and **5** under Action 4).

ACL (lbs ww)	January-June			
	ACL Alternative	Mean	L95%	U95%
136,440	Current ACL	20-Mar	No Closure	18-Feb
156,162	Action 3, Alt 2	9-Apr	No Closure	25-Feb
148,354	Action 3, Alt 3	31-Mar	No Closure	22-Feb
140,546	Action 3, Alt 4	24-Mar	No Closure	19-Feb
124,930	Action 3, Alt 5	9-Mar	No Closure	14-Feb

ACL (lbs ww)	July-December			
	ACL Alternative	Mean	L95%	U95%
136,440	Current ACL	21-Sep	27-Nov	30-Aug
156,162	Action 3, Alt 2	30-Sep	No Closure	5-Sep
148,354	Action 3, Alt 3	26-Sep	21-Dec	3-Sep
140,546	Action 3, Alt 4	23-Sep	3-Dec	1-Sep
124,930	Action 3, Alt 5	17-Sep	15-Nov	25-Aug

* Unused quota from January-June would roll over to July-December.
** Landings during September-December 2012 are assumed to be similar to those of 2008-2011.

The expected dates that the split season quotas would be met (**Table 4.5.2**) assume that the preferred alternatives for the minimum size limits from **Action 4** would be in place. Under **Preferred Alternative 2**, there is little difference in the expected closure dates of gray triggerfish for the different ACL alternatives under **Action 3**. If the seasonal quotas were 136,440 lbs ww (based on current ACL), the expected dates that a commercial closure would occur for gray triggerfish would be mid-March during season 1. The 136,440 lbs ww quota for January-June would not have been met in 2008 or 2009. During the second season, the 136,440 lbs ww quota would likely be met in late September. The expected dates that split season quotas would be met based on proposed ACL alternatives from **Action 3** would be similar (**Table 4.5.2**). For the January-June season, the expected dates that the split season quota would be met range from March 9 to April 9. For the July-December season, the dates the split season quota would be met range from September 17 to September 30.

An examination of landings during 2009-2011 reveals that 40% of the commercial landings were during January-June, and 60% were during July-December (**Table 4.5.3**). **Alternative 3** would allocate the seasonal quotas of gray triggerfish according to the monthly distribution of landings shown in **Table 4.5.3** where 40% of the commercial gray triggerfish ACL would go to January 1 through June 30, and 60% to July 1 through December 31. As a result, the current commercial ACL of 272,880 lbs ww would be divided into two seasonal quotas of 109,152 lbs ww and 163,728 lbs ww. The proposed commercial ACLs under **Action 3** would be divided in a similar manner. Any remaining quota from season 1 would transfer to season 2, but any remaining quota from season 2 would not be carried forward.

Table 4.5.3. Percentage of commercial gray triggerfish landings by month during 2008-2011.

Month	Percent
January	9%
February	7%
March	6%
April	5%
May	7%
June	6%
July	6%
August	10%
September	13%
October	14%
November	11%
December	6%

Source: SEFSC ALS data.

The expected dates that the split season quotas would be met under **Alternative 3** assume that the preferred alternatives for the minimum size limits from **Action 4** would be in place. If the season 1 quota were 109,152 lbs ww (based on current ACL), the expected dates that a commercial closure would occur for gray triggerfish would be in late February based on 2011 and 2012 landings. The expected dates that split season quotas would be met based on proposed ACL alternatives from **Action 3** would be similar (**Table 4.5.4**). For the January-June season, the expected dates that the split season quota would be met range from February 21 to March 9. For the July-December season, the dates the split season quota would be met range from September 27 to October 5.

Table 4.5.4. Expected dates the gray triggerfish semi-annual quotas (based on ACL alternatives in Action 3) would have been met for January-June and July-December split seasons (**Alternative 3)**, assuming a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (Preferred Alternatives 3 and 5 under Action 4).

ACL (lbs ww)	January-June			
	ACL Alternative	Mean	L95%	U95%
109,152	Current ACL	25-Feb	No Closure	8-Feb
124,930	Action 3, Alt 2	9-Mar	No Closure	14-Feb
118,684	Action 3, Alt 3	4-Mar	No Closure	12-Feb
112,437	Action 3, Alt 4	27-Feb	No Closure	9-Feb
99,944	Action 3, Alt 5	21-Feb	No Closure	5-Feb

ACL (lbs ww)	July-December			
	ACL Alternative	Mean	L95%	U95%
163,728	Current ACL	3-Oct	No Closure	7-Sep
187,395	Action 3, Alt 2	15-Oct	No Closure	15-Sep
178,025	Action 3, Alt 3	10-Oct	No Closure	12-Sep
168,656	Action 3, Alt 4	5-Oct	No Closure	9-Sep
149,916	Action 3, Alt 5	27-Sep	25-Dec	3-Sep

The biological impacts of a split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** are likely to be neutral since overall harvest would be limited to the sector ACL and split-season quotas, and AMs would be triggered if the ACL or quotas were exceeded. Dividing the ACL into two time periods could result in gray triggerfish being open for a short period of time, and possibly encourage derby conditions to a greater extent than **Alternative 1 (No Action) (Tables 4.5.2** and **4.5.4)**. Similarly, due to a very short season 1 fishing season under **Alternative 3**, derby conditions in season 1 would be expected to be more pronounced than in season 2. Discards of gray triggerfish would be expected after quotas are met under **Preferred Alternative 2** and **Alternative 3** due to fishermen targeting co-occurring species. However, the magnitude of discards would be expected to be similar under the two alternatives. Furthermore, survival of discarded gray triggerfish is estimated to be very high (about 88%). Thus, any negative effects from alternatives that might result in an increase in regulatory discards would be expected to be minor. **Preferred Alternative 2** and **Alternative 3** would establish fishing seasons that have opening and closing dates similar to vermilion snapper. Since gray triggerfish and vermilion snapper are co-occurring species that are caught together, **Preferred Alternative 2** and **Alternative 3** could reduce bycatch of both species. Split season quotas would allow fishermen in different regions to target gray triggerfish when weather is good in their area. Therefore, alternatives that divide the ACL into two time period quotas would allow for a greater opportunity among all areas to catch gray triggerfish. Furthermore, dividing the ACL into two seasons would allow fishermen to target gray triggerfish in summer when historical catches have been the best.

Establishing a split season for commercial gray triggerfish will not result in impacts to EFH, HAPCs or protected resources. Regardless of the alternative selected, none of them are anticipated to have adverse effects on listed coral species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect listed coral species, large whales, or any DPS of Atlantic sturgeon. Regardless of the alternative selected, this action is not anticipated to increase the potential for interactions with

smalltooth sawfish. However, the biological impact of these alternatives on sea turtles is unclear. **Alternative 1 (No Action)** may be the most beneficial if it reduces the likelihood of a derby condition developing during sea turtle nesting season. Sea turtles nest along the east coast of the United States from April-October, with peak nesting occurring from May-July. Sea turtle nesting brings gravid females closer to shore where they are more susceptible to interaction with snapper grouper fishing gear. Strictly based on the number of months fishing is projected to occur during sea turtle nesting season, **Preferred Alternative 2** and **Alternative 3** may have similar biological effects. For **Preferred Alternative 2,** the projected closure date of season 1 would likely be sometime in March. This would overlap slightly with sea turtle nesting season. Season 2 would likely close sometime in September; overlapping with sea turtle nesting season by 3 months, including 1 peak nesting month. For **Alternative 3,** the projected closure date for season 1 would likely be late-February or early-March. Under **Alternative 3**, season 1 would likely overlap with sea turtle nesting season only slightly, if at all. Season 2 would likely close sometime in October; overlapping with sea turtle nesting season by 4 months, including 1 peak nesting month. However, the opening months of season 2 might see greater fishing effort if pent up demand leads to derby conditions. This greater fishing effort at the beginning of season 2 (right in the middle of peak sea turtle nesting season) might offset any biological benefits gained by the fishery closing in season 1 prior to the beginning of sea turtle nesting. Conversely, if the 60% allocation for season 2, lessens the likelihood of derby fishing during sea turtle nesting months by extending fishing over a longer period, this alternative may be more biologically beneficial. If it does not, then both **Preferred Alternative 2** and **Alternative 3** are likely to have similar biological benefits.

4.5.2 Economic Effects

The 2012 commercial season for gray triggerfish was open for a total of 260 days and the 2013 season for a total of 204 days. The following analysis uses the shorter open season in 2013 to assess the potential economic effects of the alternatives.

As of December 31, 2013, 305,856 lbs ww of gray triggerfish had been landed commercially in the South Atlantic (NMFS SERO: http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html), which is higher than the ACL of 272,880 lbs ww. The above landings as of December 31 divided by the 204 days the season was open suggests an average daily catch in 2013 of approximately 1,499 lbs ww per day. For the season to have remained open for the entire year (365 days), the average daily catch rate would have had to be approximately 748 lbs ww based on the current commercial ACL of 272,880 lbs ww. However, consideration must be given to the other ACLs that could result from the various alternatives of **Action 3**. **Table 4.5.5** is a synthesis of the mean estimated lengths of the gray triggerfish seasons based on the alternatives of **Action 5** (**Tables 4.5.1**, **4.5.2**, and **4.5.4**), given the various alternatives of **Action 3** and assuming at 14 inch FL size limit for east Florida, and a 12 inch FL size limit for North Carolina, South Carolina, and Georgia (**Preferred Alternatives 3** and **5** under **Action 4**).

Table 4.5.5. Estimated length of the commercial gray triggerfish season for Action 5 alternatives based on Action 3 alternatives for setting the ACL for gray triggerfish. Action 3 ACLs are listed in lbs ww.

		Day Season Would Close				
		Action 3				
Action 5	**Season**	**Alternative 1 (ACL = 272,880)**	**Alternative 2 (ACL = 312,325)**	**Alternative 3 (ACL = 296,709)**	**Alternative 4 (ACL = 281,093)**	**Alternative 5 (ACL = 249,860)**
Alt. 1	Jan 1 - Dec 31	5-Aug	29-Aug	18-Aug	10-Aug	17-Jul
Preferred Alt. 2	Jan 1 - Jun 30	20-Mar	9-Apr	31-Mar	24-Mar	9-Mar
	Jul 1 - Dec 31	21-Sep	30-Sep	26-Sep	23-Sep	17-Sep
Alt. 3	Jan 1 - Jun 30	25-Feb	9-Mar	4-Mar	27-Feb	21-Feb
	Jul 1 - Dec 31	3-Oct	15-Oct	10-Oct	5-Oct	27-Sep

Whether a single 12-month season or two 6-month seasons, annual commercial landings are capped by the commercial ACL. This action would affect the rate of commercial landings, but likely would not affect the annual total. Although it is unknown how having split seasons for gray triggerfish would actually affect future fishing behavior, it may reduce the current average monthly rate from January through June and increase the current average monthly rate from July through December.

Split seasons for a snapper grouper species is not new. Vermilion snapper currently is managed under a split season scenario, similar to the one proposed by **Preferred Alternative 2** and **Alternative 3**. Between 2011 and 2014, the first vermilion snapper split season that began on January 1, closed between February 13th and April 19th (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/historical/index.html, accessed on April 14, 2014.)

Commercial fishermen may target gray triggerfish in the beginning of the year and begin to target shallow water groupers as well after that season opens on May 1. **Preferred Alternative 2** and **Alternative 3** could result in the first season for gray triggerfish closing before the opening of the shallow water grouper season. It is not possible to determine accurately what the economic effects of closing the gray triggerfish first season would be prior to the opening of the shallow water grouper season, as this scenario has not occurred in the past. Historically, fishermen who target gray triggerfish also fish for vermilion snapper and shallow water groupers. As it is very likely that the first split season for gray triggerfish would close prior to the May 1 start of the shallow water grouper season, at least some snapper grouper commercial fishermen would not be able to participate in other snapper grouper complex fisheries between the date of the closure and May 1st. If commercial harvest of gray triggerfish is closed, commercial fishermen would either have to target other snapper grouper species or other species that they are allowed to harvest or stay in port.

The second split season is less likely to experience the direct negative economic effects from the first split season discussed above, as trips that land gray triggerfish from July through December tend to have lower landings of the species and increased quantities of other snapper grouper species such as black sea bass, vermilion snapper, and shallow water groupers. By reserving 50% (**Preferred Alternative 2**) or 60% (**Alternative 3**) of the commercial ACL for the second split season, it is likely that participants in the second season would see the second split season last longer than the past closure date of September 11, 2012 (later reopened From December 12 to December 19) or July 7, 2013 (later

reopened from October 28 to November 14). A longer second split season would result in fewer discards and trips that are potentially more profitable the longer the season continues.

In summary, there would be no difference in annual economic impacts among **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** because there would be no change in annual total landings and dockside revenues, assuming all of the ACL is caught each year and the price of gray triggerfish remains relatively constant. **Preferred Alternative 2** and **Alternative 3** redistribute when fishing and landings of gray triggerfish can occur through the year. The degree of economic effects depends primarily on the timing of the closures in relationship to other seasonal closures. For the first split season, **Alternative 1 (No Action)** would be the status quo as no closure would be expected as is currently the case. **Preferred Alternative 2** is expected to have a minor in-season direct negative economic effect; however, **Alternative 3** is expected to have even greater direct negative economic effects due to the predicted timing of seasonal closures, potentially leaving at least some snapper grouper commercial fishermen with no species to target. The second split season is expected to close prior to the end of the calendar year, however, **Alternative 1 (No Action)** would have the season close sooner than either **Preferred Alternative 2** or **Alternative 3**, resulting in greater direct negative economic effects. Because **Alternative 3** would extend the second split season longer than **Preferred Alternative 2**, it is expected to have a greater positive direct economic benefit.

4.5.3 Social Effects

Gray triggerfish is an increasingly important commercial species, with growing effort and market demand that are likely associated with closures for other species, as discussed in **Section 4.4.3**. The effects on the commercial fleet due to changing the gray triggerfish commercial fishing year into split seasons would depend on the ACL and the rate of catch. Under **Actions 2** and **3**, the ACL for gray triggerfish could be increased or decreased, which would affect how a split season would provide positive or negative effects on commercial harvesters. If the commercial ACL ever needed to be lowered in the future, this would be expected to result in shorter available fishing time in a full-year season or split seasons, and could generate (or perpetuate) derby conditions. In addition to concerns about safety at sea that arise from the race to fish, a derby could result in a large amount of gray triggerfish on the market in a very short period of time. This may cause reduced market value and lower product quality, and the bust-and-boom nature of the commercial gray triggerfish sector may hinder business stability and steady job opportunities for captain and crew.

Additionally, management changes that affect the commercial fleet's access to gray triggerfish could have some effects on the associated restaurants and fish houses that sell the popular species in coastal communities. The broad effects of this are described in detail in **Section 4.4.3**.

A split season under **Preferred Alternative 2** or **Alternative 3** would likely be beneficial to commercial fishermen harvesting gray triggerfish in North Carolina and South Carolina. Because the current fishing year starts in January 1 (**Alternative 1 (No Action)**), fishermen in North Carolina and South Carolina sometimes have limited or no access to gray triggerfish in the early months due to weather, or could risk unsafe conditions to fish. A split season under **Preferred Alternative 2** or **Alternative 3** would likely increase access to the commercial ACL for North Carolina and South Carolina, which would be beneficial to commercial businesses in these areas. Additionally, as noted in

Section 4.5.1, a split season for gray triggerfish under **Preferred Alternative 2** or **Alternative 3** could reduce discards of vermilion snapper because the two species are commonly caught together. This could improve trip efficiency and help reduce regulatory discards for vessels catching vermilion snapper. When compared to **Alternative 1 (No Action)** minor social benefits are expected from **Preferred Alternative 2** or **Alternative 3**. The proposed 40%-60% split in the gray triggerfish commercial ACL for the two fishing seasons under **Alternative 3** reflects recent harvest patterns for the species, and would be expected to result in fewer changes for the commercial fleet than under **Preferred Alternative 2**, which could impose some limited access to the commercial ACL during the second part of the year.

4.5.4 Administrative Effects

Alternative 1 (**No Action)** would have fewer administrative impacts than **Preferred Alternative 2** or **Alternative 3** because only one quota would need to be monitored. Relative to **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** would increase the administrative impacts in the form of rulemaking, outreach, education, monitoring, and enforcement. However, these impacts are not expected to be significant.

4.6 Action 6. Establish a commercial trip limit for gray triggerfish

4.6.1 Biological Effects

Alternatives for Action 6

Alternative 1 (No Action). There is no commercial trip limit for gray triggerfish in the South Atlantic region.

Preferred Alternative 2. Establish a commercial trip limit for gray triggerfish in the South Atlantic region.

- **Sub-alternative 2a.** 500 pounds whole weight (lbs ww)
- **Preferred Sub-alternative 2b.** 1,000 lbs ww
- **Sub-alternative 2c.** 1,500 lbs ww

Alternative 3. When 75% of the gray triggerfish commercial ACL is met or is projected to be met, the trip limit is reduced to

- **Sub-alternative 3a.** 200 lbs ww
- **Sub-alternative 3b.** 500 lbs ww
- **Sub-alternative 3c.** 750 lbs ww

Alternative 1 (No Action) would not establish a trip limit for gray triggerfish. Currently, the commercial ACL is 272,880 lbs ww. Based on 2012 landings data, the 272,880 lbs ww commercial ACL would have been met in late July, and the 312,325 lbs ww commercial ACL would have been met in mid-August (**Table 4.6.1**). In 2012, the commercial ACL was 306,262 lbs ww, and gray triggerfish was closed on September 11, 2012, but was reopened from December 12 to December 19. In 2013, the commercial ACL was 272,880 lbs ww, and gray triggerfish was closed on July 7, 2013, but was reopened from October 28 to November 14. **Table 4.4.2** shows that landings in most years would have exceeded the ACLs proposed in **Action 3** of this amendment. Thus, without a trip limit, commercial closures for gray triggerfish are expected.

Table 4.6.1. Projected quota closure dates for the 2014 fishing season for the commercial sector of gray triggerfish under Alternative 1 (No Action) for the current commercial ACL of 272,880 lbs ww, and proposed commercial ACLs under Action 3.

ACL (lbs ww)	Alternative	Mean	L95%	U95%
272,880	Current ACL	26-Jul	No Closure	21-Apr
312,325	Action 3, Alt 2	18-Aug	No Closure	12-May
296,709	Action 3, Alt 3	9-Aug	No Closure	3-May
281,093	Action 3, Alt 4	1-Aug	No Closure	25-Apr
249,860	Action 3, Alt 5	8-Jul	No Closure	7-Apr

The effects of trip limits proposed in **Preferred Alternative 2** and **Alternative 3** for 2008-2012 landings are based on logbook data. **Preferred Alternative 2** and associated sub-alternatives would establish commercial trip limits ranging from 500 lbs ww to 1,500 lbs ww. Landings information from 2012 (**Table 4.6.2**) show that about 8% of the trips had landings greater than 500 lbs ww (**Sub-alternative 2a**), 2% of the trips had landings greater than 1,000 lbs ww (**Preferred Sub-alternative 2b**), and less than 1% of the trips had landings greater than 1,500 lbs ww (**Sub-alternative 2c**). Thus, commercial closures would still be expected under **Sub-alternatives 2a-2c**.

Table 4.6.2. Trip limit, number of trips, percentage of trips greater than trip limit, and harvest reduction provided by trip limit for 2012.

Trip Limit (lbs ww)	2012		
	# Trips	% Trips	Harvest Reduction
0	1,702	100.00%	100.00%
100	652	38.31%	65.24%
112	616	36.19%	62.53%
150	505	29.67%	55.02%
175	441	25.91%	50.81%
200	394	23.15%	47.09%
224	364	21.39%	43.84%
250	323	18.98%	40.66%
300	268	15.75%	35.40%
337	239	14.04%	32.10%
500	143	8.40%	21.31%
600	111	6.52%	16.74%
700	80	4.70%	13.24%
800	66	3.88%	10.67%
900	48	2.82%	8.69%
1,000	39	2.29%	7.16%
1,100	28	1.65%	5.98%
1,200	22	1.29%	5.08%
1,300	18	1.06%	4.36%
1,400	15	0.88%	3.76%
1,500	14	0.82%	3.24%
1,600	9	0.53%	2.89%
1,700	8	0.47%	2.58%
1,800	6	0.35%	2.32%
1,900	4	0.24%	2.13%
2,000	3	0.18%	2.00%

Source: Coastal logbook data from June 2013.

There has been a shift towards increased targeting of gray triggerfish in the commercial snapper grouper fishery in recent years (**Figure 4.6.1**). Mean catch per trip increased from 142 lbs/trip to 225 lbs/trip between 2009-2013. This change in catch was considered in estimating when a trip limit would be expected to be met in 2014.

Using the SEFSC commercial logbook, the impacts of various trip limit alternatives for the commercial South Atlantic gray triggerfish portion of the snapper grouper fishery were explored by replacing trips with harvest exceeding the trip limit with the trip limit level harvest. Trip level landings of gray triggerfish were summarized from captain reported logbooks assuming both "gray triggerfish" and "triggerfish, unclassified" were gray triggerfish, as this is consistent with the ACL monitoring of the stock. Trip limits above 500 lbs ww had little impact upon gray triggerfish harvest (**Table 4.6.3**).

Table 4.6.3. Commercial gray triggerfish percent of status quo harvest, by month, under various proposed trip limits, as 3-year average of 2011-2013.

TRIP LIMIT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1500-lb	99%	100%	95%	97%	96%	94%	100%	100%	100%	89%	98%	99%	98%
1000-lb	96%	95%	85%	86%	93%	92%	99%	99%	99%	79%	94%	96%	93%
750-lb	90%	90%	76%	75%	90%	89%	98%	99%	95%	73%	88%	89%	87%
500-lb	78%	77%	62%	60%	83%	83%	95%	95%	89%	63%	80%	74%	77%
300-lb	60%	59%	46%	43%	70%	71%	85%	87%	79%	54%	73%	53%	61%
200-lb	46%	45%	36%	32%	57%	62%	73%	78%	70%	45%	67%	40%	49%
100-lb	27%	27%	21%	19%	38%	44%	53%	63%	56%	31%	60%	24%	31%

Source: SEFSC Commercial Logbook (Nov 2013).
Note: 2013 data are currently incomplete.

Evaluation of trip limit impacts on season length accounted for the recent trends in landings by fitting a seasonal autoregressive integrated moving average model (SARIMA) to commercial catch-per-day and forward projecting one year (see **Appendix G**). Analysis for trip limit alternatives assumes a 12- inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14- inch FL minimum size limit is put into place for east Florida (preferred alternatives in **Action 4**).

Tables 4.6.4 to **4.6.8** show the dates that the commercial ACLs proposed in **Action 3** would be expected to be met under the proposed alternatives of **Action 6**. The tables include the analysis for the trip limit scenarios (**Sub-alternatives 3a-3c**) as well as the sub-alternatives that would incorporate a step-down trip limit when 75% of the ACL is met.

Under **Action 3**, **Alternative 1 (No Action)** and **Preferred Alternative 2** under **Action 5**, the commercial ACL of 272,880 lbs ww would be divided into two quotas (136,440 lbs ww) for a January-June and July-December season. With this quota, a 500 lbs ww trip limit (**Sub-alternative 2a**) would be expected to extend the January-June commercial fishing season by almost two months, a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by about a week, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would be expected to extend the fishing season by about one day (**Table 4.6.4**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by almost two months (**Sub-alternative 3a**), about three weeks (**Sub-alternative 3b**), and about a week (**Sub-alternative 3c**). The July-December fishing season would be expected to be extended by four days with a 500 lbs ww trip limit (**Sub-alternative 2a**), a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by about a day, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have no effect (**Table 4.6.4**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by three weeks (**Sub-alternative 3a**), two days (**Sub-alternative 3b**), and one day (**Sub-alternative 3c**).

Table 4.6.4. Commercial gray triggerfish projected mean closure dates for the preferred split season alternative in Action 5, with 95% confidence limits, under a variety of trip limit scenarios for the current commercial ACL of **272,880 lbs ww** (Action 3 Alternative 1). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

		Jan-June 136,440 lbs ww			July-Dec 136,440 lbs ww		
Alt	**Trip Limit**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
1	No trip limit	17-Mar	No Closure	16-Feb	18-Sep	22-Nov	26-Aug
2c	1500-lb trip limit	18-Mar	No Closure	17-Feb	18-Sep	26-Nov	26-Aug
2b	1000-lb trip limit	25-Mar	No Closure	19-Feb	19-Sep	5-Dec	27-Aug
	750-lb trip limit	7-Apr	No Closure	22-Feb	20-Sep	21-Dec	27-Aug
2a	500-lb trip limit	11-May	No Closure	3-Mar	22-Sep	No Closure	29-Aug
	300-lb trip limit	27-Jun	No Closure	8-Apr	29-Sep	No Closure	3-Sep
	200-lb trip limit	No Closure	No Closure	19-May	14-Oct	No Closure	9-Sep
	100-lb trip limit	No Closure	No Closure	No Closure	17-Nov	No Closure	25-Sep
3a	200-lb trip limit @ 75% ACL	13-May	No Closure	3-Mar	24-Sep	No Closure	29-Aug
3b	500-lb trip limit @ 75% ACL	1-Apr	No Closure	20-Feb	20-Sep	7-Dec	27-Aug
3c	750-lb trip limit @ 75% ACL	24-Mar	No Closure	18-Feb	19-Sep	29-Nov	26-Aug

Under **Action 3**, **Alternative 2**, and **Preferred Alternative 2** under **Action 5**, the 312,325 lbs ww commercial ACL would be divided into two quotas (156,162 lbs gw) for a January-June and July-December season. With this quota, a 500 lbs ww trip limit (**Sub-alternative 2a**) would be expected to extend the January-June commercial fishing season by about two months, a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by about two weeks, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would be expected to extend the fishing season by about four days (**Table 4.6.5**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by almost two months (**Sub-alternative 3a**), about one month (**Sub-alternative 3b**), and about two weeks (**Sub-alternative 3c**). The July-December fishing season would be expected to be extended by about a week with a 500 lbs ww trip limit (**Sub-alternative 2a**), a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by about a day, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have no effect (**Table 4.6.5**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by about a week (**Sub-alternative 3a**), two days (**Sub-alternative 3b**), and one day (**Sub-alternative 3c**).

Table 4.6.5. Commercial gray triggerfish projected mean closure dates for the preferred split season alternative in Action 5, with 95% confidence limits, under a variety of trip limit scenarios for the proposed commercial ACL of **312,325 lbs ww** (Action 3 Alternative 2). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

		Jan-June 156,162 lbs ww			July-Dec 156,162 lbs ww		
Alt	**Trip Limit**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
1	No trip limit	4-Apr	No Closure	23-Feb	26-Sep	26-Dec	2-Sep
2c	1500-lb trip limit	8-Apr	No Closure	24-Feb	26-Sep	No Closure	2-Sep
2b	1000-lb trip limit	20-Apr	No Closure	26-Feb	27-Sep	No Closure	2-Sep
	750-lb trip limit	6-May	No Closure	2-Mar	28-Sep	No Closure	3-Sep
2a	500-lb trip limit	4-Jun	No Closure	19-Mar	2-Oct	No Closure	5-Sep
	300-lb trip limit	No Closure	No Closure	3-May	16-Oct	No Closure	10-Sep
	200-lb trip limit	No Closure	No Closure	6-Jun	3-Nov	No Closure	17-Sep
	100-lb trip limit	No Closure	No Closure	No Closure	12-Dec	No Closure	9-Oct
3a	200-lb trip limit @ 75% ACL	1-Jun	No Closure	19-Mar	4-Oct	No Closure	6-Sep
3b	500-lb trip limit @ 75% ACL	2-May	No Closure	27-Feb	28-Sep	No Closure	3-Sep
3c	750-lb trip limit @ 75% ACL	19-Apr	No Closure	25-Feb	27-Sep	No Closure	2-Sep

Under **Action 3**, **Alternative 3**, and **Preferred Alternative 2** under **Action 5**, the 296,709 lbs ww commercial ACL would be divided into two quotas (148,354 lbs gw) for a January-June and July-December season. With this quota, a 500 lbs ww trip limit (**Sub-alternative 2a**) would be expected to extend the January-June commercial fishing season by about two months, a 1,000 lbs ww trip limit would extend the season by about two weeks (**Preferred Sub-alternative 2b**) and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have been expected to extend the fishing season by about one day (**Table 4.6.6**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by about two months (**Sub-alternative 3a**), about three weeks (**Sub-alternative 3b**), and a little over a week (**Sub-alternative 3c**). The July-December fishing season would be expected to be extended by five days with a 500 lbs ww trip limit (**Sub-alternative 2a**), a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by about a day, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have no effect (**Table 4.6.6**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by about a week (**Sub-alternative 3a**), two days (**Sub-alternative 3b**), and one day (**Sub-alternative 3c**).

Table 4.6.6. Commercial gray triggerfish projected mean closure dates for the preferred split season alternative in Action 5, with 95% confidence limits, under a variety of trip limit scenarios for the current commercial ACL of **296,709 lbs ww** (Action 3, Alternative 3). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

		Jan-June 148,354 lbs ww			July-Dec 148,354 lbs ww		
Alt	**Trip Limit**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
1	No trip limit	27-Mar	No Closure	21-Feb	23-Sep	8-Dec	30-Aug
2c	1500-lb trip limit	30-Mar	No Closure	21-Feb	23-Sep	19-Dec	31-Aug
2b	1000-lb trip limit	9-Apr	No Closure	23-Feb	24-Sep	No Closure	31-Aug
	750-lb trip limit	26-Apr	No Closure	26-Feb	25-Sep	No Closure	31-Aug
2a	500-lb trip limit	26-May	No Closure	13-Mar	28-Sep	No Closure	2-Sep
	300-lb trip limit	No Closure	No Closure	24-Apr	9-Oct	No Closure	7-Sep
	200-lb trip limit	No Closure	No Closure	30-May	27-Oct	No Closure	14-Sep
	100-lb trip limit	No Closure	No Closure	No Closure	27-Nov	No Closure	1-Oct
3a	200-lb trip limit @ 75% ACL	24-May	No Closure	13-Mar	29-Sep	No Closure	3-Sep
3b	500-lb trip limit @ 75% ACL	20-Apr	No Closure	24-Feb	25-Sep	No Closure	31-Aug
3c	750-lb trip limit @ 75% ACL	8-Apr	No Closure	22-Feb	24-Sep	22-Dec	31-Aug

Under **Action 3**, **Alternative 4** and **Preferred Alternative 2** under **Action 5** the 281,093 lbs ww commercial ACL would be divided into two quotas (140,546 lbs gw) for a January-June and July-December season. With this quota, a 500 lbs ww trip limit (**Sub-alternative 2a**) would be expected to extend the commercial fishing season by over two months, a 1,000 lbs ww trip limit would extend the season by little over a week (**Preferred Sub-alternative 2b**) and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have been expected to extend the fishing season by about two days (**Table 4.6.7**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by almost two months (**Sub-alternative 3a**), about three weeks (**Sub-alternative 3b**), and about a week (**Sub-alternative 3c**). The July-December fishing season would be expected to be extended by four days with a 500 lbs ww trip limit (**Sub-alternative 2a**), a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would have no effect, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have no effect (**Table 4.6.7**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by five days (**Sub-alternative 3a**), one day (**Sub-alternative 3b**), and **Sub-alternative 3c** would have no effect.

Table 4.6.7. Commercial gray triggerfish projected mean closure dates for the preferred split season alternative in Action 5, with 95% confidence limits, under a variety of trip limit scenarios for the current commercial ACL of **281,093 lbs ww** (Action 3, Alternative 4). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

		Jan-June 140,546 lbs ww			July-Dec 140,546 lbs ww		
Alt	**Trip Limit**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
1	No trip limit	20-Mar	No Closure	18-Feb	20-Sep	26-Nov	28-Aug
2c	1500-lb trip limit	22-Mar	No Closure	18-Feb	20-Sep	1-Dec	28-Aug
2b	1000-lb trip limit	29-Mar	No Closure	20-Feb	20-Sep	15-Dec	28-Aug
	750-lb trip limit	14-Apr	No Closure	23-Feb	21-Sep	31-Dec	28-Aug
2a	500-lb trip limit	16-May	No Closure	7-Mar	24-Sep	No Closure	30-Aug
	300-lb trip limit	No Closure	No Closure	14-Apr	2-Oct	No Closure	4-Sep
	200-lb trip limit	No Closure	No Closure	23-May	19-Oct	No Closure	11-Sep
	100-lb trip limit	No Closure	No Closure	No Closure	20-Nov	No Closure	27-Sep
3a	200-lb trip limit @ 75% ACL	16-May	No Closure	6-Mar	25-Sep	No Closure	31-Aug
3b	500-lb trip limit @ 75% ACL	7-Apr	No Closure	21-Feb	21-Sep	17-Dec	28-Aug
3c	750-lb trip limit @ 75% ACL	28-Mar	No Closure	19-Feb	20-Sep	6-Dec	28-Aug

Under **Action 3**, **Alternative 5,** and **Preferred Alternative 2** under **Action 5**, the 249,860 lbs ww commercial ACL would be divided into two quotas (124,930 lbs gw) for a January-June and July-December season. With this quota, a 500 lbs ww trip limit (**Sub-alternative 2a**) would be expected to extend the commercial fishing season by about seven weeks, a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would extend the season by little over a week and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have been expected to extend the fishing season by about one day (**Table 4.6.8**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by about seven weeks (**Sub-alternative 3a**), 12 days (**Sub-alternative 3b**), and about 5 days (**Sub-alternative 3c**). The July-December fishing season would be expected to be extended by three days with a 500 lbs ww trip limit (**Sub-alternative 2a**), a 1,000 lbs ww trip limit (**Preferred Sub-alternative 2b**) would have no effect, and a 1,500 lbs ww trip limit (**Sub-alternative 2c**) would have no effect (**Table 4.6.8**). The step down approach proposed in **Alternative 3** and associated sub-alternatives would be expected to extend the season by five days (**Sub-alternative 3a**), one day (**Sub-alternative 3b**), and **Sub-alternative 3c** would have no effect.

Table 4.6.8. Commercial gray triggerfish projected mean closure dates for the preferred split season alternative in Action 5, with 95% confidence limits, under a variety of trip limit scenarios for the proposed commercial ACL of **249,860 lbs ww** (Action 3 Alternative 5). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

		Jan-June 124,930 lbs ww			July-Dec 124,930 lbs ww		
Alt	**Trip Limit**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
1	No trip limit	6-Mar	No Closure	12-Feb	14-Sep	10-Nov	22-Aug
2c	1500-lb trip limit	7-Mar	No Closure	13-Feb	14-Sep	14-Nov	22-Aug
2b	1000-lb trip limit	13-Mar	No Closure	14-Feb	14-Sep	20-Nov	22-Aug
	750-lb trip limit	22-Mar	No Closure	17-Feb	15-Sep	26-Nov	23-Aug
2a	500-lb trip limit	24-Apr	No Closure	25-Feb	17-Sep	18-Dec	24-Aug
	300-lb trip limit	11-Jun	No Closure	25-Mar	23-Sep	No Closure	29-Aug
	200-lb trip limit	No Closure	No Closure	8-May	2-Oct	No Closure	5-Sep
	100-lb trip limit	No Closure	No Closure	No Closure	7-Nov	No Closure	19-Sep
3a	200-lb trip limit @ 75% ACL	29-Apr	No Closure	25-Feb	19-Sep	6-Dec	25-Aug
3b	500-lb trip limit @ 75% ACL	18-Mar	No Closure	15-Feb	15-Sep	22-Nov	23-Aug
3c	750-lb trip limit @ 75% ACL	11-Mar	No Closure	14-Feb	14-Sep	18-Nov	22-Aug

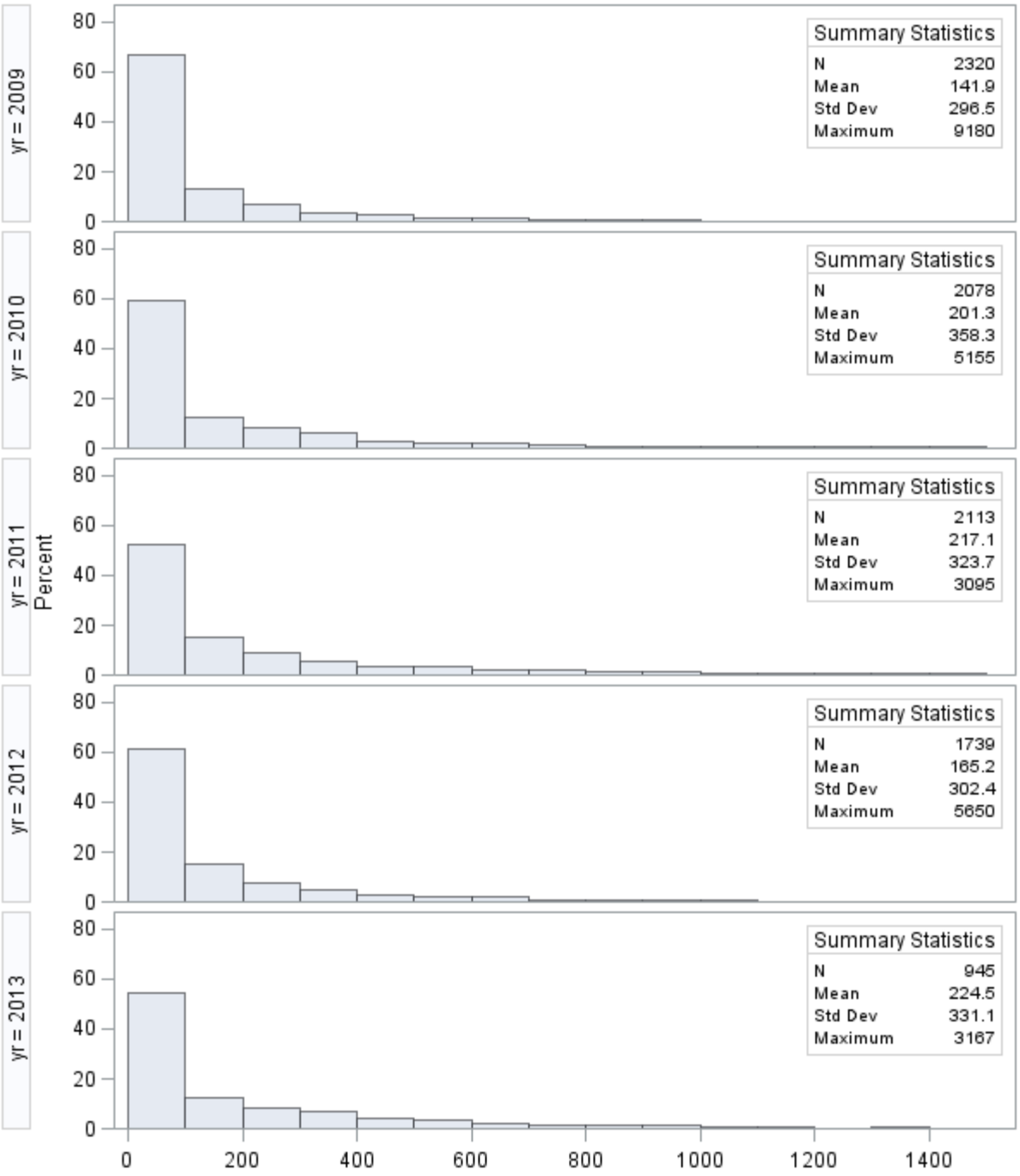

Figure 4.6.1. Gray triggerfish commercial catch per trip 2009-2013.
Note 2013 data are incomplete. Source: SEFSC Commercial Logbook (Nov 2013).

The biological effects of **Alternatives 1 (No Action), Preferred Alternative 2** (and its sub-alternatives)**,** and **Alternative 3** (and its sub-alternatives) would be expected to be neutral because ACLs and AMs are in place to cap harvest, and take action if ACLs are exceeded. **Alternative 1 (No Action)** could present a greater biological risk to gray triggerfish in terms of exceeding the ACL than **Alternatives 2 (Preferred)** and **3** since no trip limit would be in place to slow down the rate of harvest

and help ensure the ACL is not exceeded. However, improvements have been made to the quota monitoring system, and the South Atlantic Council has approved a Dealer Reporting Amendment (effective August 7, 2014), which should enhance data reporting. Therefore, any biological benefits associated with trip limits would be expected to be small. Larger trip limits would not constrain catch and would result in the ACL being met earlier in the year than smaller trip limits. Early closures of gray triggerfish could result in increased bycatch of gray triggerfish when fishermen target co-occur species such as vermilion snapper and black sea bass. However, release mortality of gray triggerfish is considered to be low. An ongoing stock assessment for gray triggerfish in the South Atlantic estimates that 87.5% of released fish survive. Thus, commercial closures associated with meeting the ACL are not expected to negatively affect the gray triggerfish stock due to bycatch.

Establishing a commercial trip limit is not expected to have any impact on EFH, HAPCs, or protected species. Regardless of the alternative selected, none is anticipated to have adverse effects on listed coral species, large whales, or any DPS of Atlantic sturgeon. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery was not likely to adversely affect listed coral species, large whales, or any DPS of Atlantic sturgeon. For the species that may interact with the fishery (i.e., sea turtles and smalltooth sawfish), there is likely to be no additional biological benefit from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between these ESA-listed species and the fishery. The impacts from **Alternatives 2 (Preferred)** and **3,** and associated sub-alternatives, on sea turtles and smalltooth sawfish are unclear. Since few commercial trips that landed gray triggerfish landed more than 500 lbs ww per trip from 2009-2013, it is likely that **Preferred Alternative 2** and its sub-alternatives would have little impact on landings of gray triggerfish. If so, it is likely that regardless of the trip limit selected, the risk of interactions between the fishery, sea turtles, and smalltooth sawfish would be largely unchanged. Thus, the biological benefits to the species from **Alternatives 1 (No Action) and 2 (Preferred)** are likely to be the same. If the lower trip limits of **Alternative 3** and its sub-alternatives is selected, and effort is reduced as a result, this alternative may have the greatest biological benefits for sea turtles and smalltooth sawfish by potentially reducing the likelihood of interactions between these species an the fishery. However, if this alternative simply lengthens the fishing season and does not actually reduce fishing effort, **Alternative 3** may have the same overall biological benefits as the other alternatives.

4.6.2 Economic Effects

Commercial trip limits, in general, are not economically efficient because they limit vessels from benefiting from economies of scale. They have a tendency to increase some fishing trip costs when a trip must stop targeting a specific species because its trip limit has been reached. Unless a vessel that has reached its limit of the targeted fish can easily move into targeting a different species on the same trip, trip costs associated with the species where the limit has been reached will increase because it will require more annual trips by vessels to catch the ACL. Depending on vessel characteristics and the distance required to travel to fish, a trip limit that is too low could result in targeted trips being cancelled altogether if the vessel cannot target other species on the same trip.

If the entire commercial ACL of gray triggerfish is caught in a single fishing year and fishermen are able to continue to have profitable trips at the same rate, none of the alternatives or sub-alternatives of

Action 6 would result in positive or negative economic changes from the status quo. Thus, relative to **Alternative 1 (No Action)** the economic effects of the proposed alternatives would be minimal. However, it is not possible to estimate the number of trips that might be foregone should a trip limit be set too low to be deemed profitable. Additionally, lower trip limits would require more trips to land the ACL. The additional trip costs associated with the "extended season" trips would reduce the profits attributable to the fishery. A mitigating factor that could offset some of the additional trip costs would be if the ex-vessel price per pound of the species goes up because there would be fewer fish on the market.

In 2012, 8.4% of commercial trips landed more than 500 lbs ww per trip of gray triggerfish, 2.29% of trips landed more than 1,000 lbs ww, and 0.82% of trips landed more than 1,500 lbs ww (**Table 4.6.2**). However, the effects of **Action 6** must be analyzed given the potential effects of **Actions 3, 4,** and **5**. To determine the alternatives that would have the least negative overall economic effects are those which would extend the length of the season by the fewest days. **Table 4.6.9** takes into account the preferred alternatives of **Actions 4** and **5**, all alternatives of **Action 3** with alternatives and sub-alternatives of **Action 6**.

Table 4.6.9. The number of additional days the commercial gray triggerfish is projected to last beyond Action 6, Alternative 1 (No Action) using the mean closure dates for the preferred split season alternative in Action 5, under a variety of trip limit scenarios for the proposed commercial ACL (Action 3 alternatives). Analysis assumes a 12 inch FL minimum size limit is put into place for North Carolina, South Carolina, and Georgia, and a 14 inch FL minimum size limit is put into place for east Florida (preferred alternatives in Action 4).

	Action 5 Preferred Alt 2: January 1 - June 30						**Action 5 Preferred Alt 2: July 1 - December 31**					
	Action 6 sub-alternatives						**Action 6 sub-alternatives**					
Action 3 ACLs (lbs ww)	2a	**Pref 2b**	2c	3a	3b	3c	2a	**Pref 2b**	2c	3a	3b	3c
Alt 1 (272,880)	55	**8**	1	57	15	7	4	**1**	0	6	6	1
Alt 2 (312,325)	60	**16**	4	57	27	15	7	**1**	0	9	2	1
Alt 3 (296,709)	60	**13**	3	58	24	12	5	**1**	0	6	2	1
Alt 4 (281,093)	57	**9**	2	57	18	8	4	**0**	0	5	1	0
Alt 5 (249,860)	49	**7**	1	54	12	5	3	**0**	0	5	1	0

NOTE: Data presented are based on **Tables 4.6.4-4.6.8**.

Given preferred alternatives for **Action 4** (size limits) and **Action 5** (split commercial seasons), the first commercial split season would be more affected by trip limits for gray triggerfish compared to the second season. The differential effect may be due to trips that occur in the first commercial season result in a greater number of pounds per trip because shallow water groupers are closed from January 1st through April 30th each year, leaving fishermen fewer species to target than in the second commercial split season.

Consequently, compared to **Alternative 1 (No Action)**, **Sub-alternatives 2a**, **Preferred 2b** and **2c** are expected to extend the first commercial season for gray triggerfish, but at differential rates, regardless of the ACL selected for gray triggerfish in **Action 3**. Allowing a 500 lbs ww trip limit (**Sub-**

alternative 2a) would extend the season by 49 to 60 days compared to **Alternative 1 (No Action). Preferred Sub-alternative 2b** (1,000 lbs ww trip limit) is projected to extend the season by 7 to 16 days, while **Sub-alternative 2c** (1,500 lbs ww trip limit) is expected to extend the season 1 to 4 days, respectively compared to **Alternative 1 (No Action)**. Since **Preferred Sub-Alternative 2b** would only extend the fishing season by 7 to 16 days, the economic effect of this alternative when compared to **Alternative 1 (No Action)** would not be significant.

The second commercial season for gray triggerfish is expected not to be as impacted by the proposed trip limits as much as the first commercial season. Compared to **Alternative 1 (No Action)**, **Sub-alternative 2a** and **Preferred Sub-alternative 2b** are expected to extend the second commercial season for gray triggerfish, but to a much lesser degree, regardless of the ACL selected for gray triggerfish in **Action 3**. Allowing a 500 lbs ww trip limit (**Sub-alternative 2a**) would extend the season by 3 to 7 days compared to **Alternative 1 (No Action)**. **Preferred Sub-alternative 2b** (1,000 lbs ww trip limit) is projected to extend the season by 0 or 1 day. While **Sub-alternative 2c** (1,500 lbs ww trip limit) is not expected to extend the season at all compared to **Alternative 1 (No Action)**.

It is reasonable to expect that larger vessels that make longer trips could have landings greater than 500, 1,000 or 1,500 lbs ww. If so, **Sub-alternative 2a** would have the largest adverse economic effect on individual commercial fishermen with historically larger landings per trip, followed in turn by **Preferred Sub-alternatives 2b** and **2c**. **Alternative 1 (No Action)** would have no adverse economic impact beyond that baseline.

In general, implementing the trip limits after 75% of the ACL has been taken as proposed by the sub-alternatives of **Alternative 3** are projected to extend the first commercial fishing season more days than the second fishing season (**Table 4.6.9**). In the first commercial season, a 200 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 54 to 58 days (**Sub-alternative 3a**) compared to no trip limits. Similarly, a 500 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 12 to 27 days (**Sub-alternative 3b**), and a 750 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 5 to 15 days (**Sub-alternative 3c**), compared to no trip limits as in **Alternative 1 (No Action)**.

In the second commercial season, the sub-alternatives of **Alternative 3** would have a much smaller effect in terms of extending the season. A 200 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 5 to 9 days (**Sub-alternative 3a**) compared to no trip limits. Similarly, a 500 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 1 to 6 days (**Sub-alternative 3b**), and a 750 lbs ww trip limit after 75% of the ACL has been taken is projected to extend the season by 0 or 1 day (**Sub-alternative 3c**), compared to no trip limits as in **Alternative 1 (No Action)**.

Within each of the two seasons, the alternatives/sub-alternatives of **Action 6** have the same order of economic effects in terms of the probability that any given gray triggerfish trip limit would be profitable. **Alternative 1 (No Action)** is the alternative that gives the greatest probability of having any given trip be profitable. **Alternative 3** is the same as **Alternative 1 (No Action)** until 75% of the ACL is taken. After that, the decreasing probability of a profitable trip would be by **Alternative 2, Sub-alternative 2c**; **Alternative 3**, **Sub-alternative 3c**; **Alternative 2, Preferred Sub-alternative 2b**;

Alternative 3, Sub-alternative 3b; **Alternative 2, Sub-alternative 2a**; and **Alternative 3, Sub-alternative 3a** as compared to **Alternative 1 (No Action)**.

4.6.3 Social Effects

As noted in **Section 4.4.3**, gray triggerfish is an increasingly important commercial species in the South Atlantic region. Communities identified in **Figure 3.3.26** would be expected to experience a combination of positive and negative effects if a commercial trip limit is established. In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Relative to **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 3** could reduce the risk of derby conditions and associated negative impacts that can occur due to an in-season closure or payback provision if the ACL is exceeded. A more restrictive trip limit is more likely to slow the rate of harvest and lengthen the season than a less restrictive trip limit, unless vessels do not currently harvest over a proposed limit. The 500 lbs ww limit proposed under **Sub-alternative 2a** is the most restrictive under **Preferred Alternative 2**, but a low percentage of trips exceed 500 lbs ww of gray triggerfish at this time (**Table 4.6.1**). Very few trips exceed the 1,000 lbs ww (**Preferred Sub-alternative 2b**) and less than 1% exceed 1,500 lbs ww (**Sub-alternative 2c**) (**Table 4.6.1**). Since **Preferred Sub-Alternative 2b** would only extend the fishing season by 7 to 16 days, the social effect of this alternative when compared to **Alternative 1 (No Action)** would not be significant. The typical low poundage of gray triggerfish is likely attributed to the multi-species catch of many snapper grouper commercial trips. In addition to gray triggerfish, a commercial vessel is likely to also target several other snapper grouper species along with coastal migratory pelagic species on one trip. Therefore, a trip with low poundage of one particular species is not necessarily an inefficient trip.

A longer open season could be beneficial to the commercial fleet and to end users of gray triggerfish (restaurant owners, fish houses, and consumers) by improving consistency of availability. Incorporating the proposed ACL that would result from **Action 3**, the proposed minimum size limits in **Action 4**, and the proposed split seasons in **Action 5**, **Table 4.6.3** shows, however, that the trip limits in **Preferred Alternative 2** and step-down in **Alternative 3** would be expected to lengthen the season by a few days, if any. When the expected season lengths in **Table 4.6.3** are compared with expected seasons when just incorporating the proposed ACL that would result from **Action 3**, the proposed minimum size limits in **Action 4,** and the proposed split seasons in **Action 5** without any trip limits (**Alternative 1 (No Action**) in **Table 4.5.2**, the estimates suggest that trip limits would contribute little to extending the season, and longer availability of gray triggerfish on the market. A lower trip limit as under **Sub-alternative 2c** would be expected to help lengthen the season more than the higher trip limits under **Sub-alternative 2a** and **Preferred Sub-alternative 2b** (**Table 4.6.4**).

The step-down trip limit when 75% of the commercial ACL is met under **Alternative 3** would allow commercial trips to continue fishing for other species, but with a bycatch allowance for any gray triggerfish caught on the trips. **Sub-alternatives 3a-3c** would help to reduce discards of gray triggerfish and could help extend the season. Overall, the social benefits to the commercial fleet, associated businesses, and communities would likely be maximized as a result of some trade-off between season length and efficiency of fishing trips under a trip limit under **Preferred Alternative 2** and a step-down provision under **Alternative 3**.

4.6.4 Administrative Effects

Alternative 1 (No Action) would have less administrative impacts than **Alternatives 2 (Preferred)** and **3**. Administrative impacts associated with **Alternatives 2 (Preferred)** and **3** would come in the form of rulemaking, outreach, education, monitoring, and enforcement. NMFS has implemented trip limits for other snapper grouper species and the impacts associated with **Alternative 2 (Preferred)** and **3** are expected to be minor.

Chapter 5. Reasoning for Council's Choice of Preferred Alternatives

5.1 Action 1. Update the South Atlantic Council's Acceptable Biological Catch (ABC) Control Rule

Alternatives for Action 1

Alternative 1 (No Action). 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.

Preferred 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 and the existing Level 4 will be renumbered as Level 5.

Snapper Grouper Advisory Panel (AP) Comments and Recommendations

The Snapper Grouper AP discussed Amendment 29 at their November 2013 meeting and again in May 2014. When the AP initially discussed the amendment, a single action was proposed to update the acceptable biological catch (ABC) control rule and apply the updated rule to select unassessed snapper grouper species. Hence, the AP made no recommendations specific to the current Action 1. However, the AP commented on the appropriateness of the ABC control rule update under Action 2 below.

Law Enforcement Advisory Panel (LEAP) Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee (SSC) Comments and Recommendations

The South Atlantic Fishery Management Council's (South Atlantic Council) SSC met in April 2013 to complete their recommendations for how to incorporate the "Only Reliable Catch Stocks" (ORCS) methodology described in Berskson et al. (2011) into the South Atlantic Council's ABC control rule. The ORCS Workshop Report is contained in **Appendix H**. The SSC 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). The SSC recommended 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 fit the criteria for Tier 4. Application of the ORCS method to set ABC for several unassessed South Atlantic stocks was completed during this workshop and development of Amendment 29 was begun shortly thereafter.

The SSC met again in May 2014 and discussed the proposed action in Amendment 29. The SSC's recommendations, directly from their May 2014 final report, are below:

Although a few members expressed concern and one member requested his position be presented as a minority report (see below), the SSC reaffirmed its consensus opinion regarding application of the ORCS methodology and the catch level recommendations contained in Amendment 29. Further, the SSC confirmed that the ORCS approach as applied for Amendment 29 still represents the best scientific information available and considered the associated catch level recommendations appropriate for management. The minority position on the application of the ORCS approach for development of the catch level recommendations contained in Amendment 29 is presented below.

SSC Minority Report:

"The methodology used by the SAFMC's ORCS Workshop (i.e., the choice of catch statistics and associated scalars) for application of the ORCS approach does not provide a sufficient uncertainty buffer between the OFL proxy and ABC within the tiered control rule structure. Combining the use of maximum value for the summary statistic and a scalar greater than one would seem to provide less of a buffer for uncertainty than that prescribed for species at higher tiers. This is not logical or appropriate. Therefore, application of the ORCS approach as described in Amendment 29 no longer represents the best available science and the associated catch level recommendations should not be used for fisheries management. It appeared that at least some SSC members were willing to stay with the current approach knowing that all of our control rules would be reexamined during the October meeting."

South Atlantic Council's Choice for Preferred Alternative

The South Atlantic Council acknowledges the methodology for arriving at an ABC for unassessed species will continue to evolve. The levels of risk and uncertainty will likely diminish over time as new approaches are developed and tested. Moreover, the South Atlantic Council stated that an adaptive management approach would ensure that fishing levels are set in a manner that balances risk and uncertainty and the South Atlantic Council is willing to apply this management approach to unassessed species. The SSC will be evaluating the ABC control rule in October 2014 to determine how well the risk of overfishing is being estimated, how the rebuilding plan targets or schedules for rebuilding stocks are being met, and whether the ABC control rule in its current form is working to address the needs of management. Hence, the South Atlantic Council decided to move forward with the proposed revisions to the ABC control rule as recommended by the SSC with the understanding that further revisions may be warranted in the future. Therefore, **Preferred Alternative 2** best meets the purpose of updating the ABC control rule based on the SSC's recommendation as best scientific information available at this time, and also best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management (Magnuson-Stevens) Act and other applicable law.

5.2 Action 2. Apply the revised ABC control rule to select unassessed snapper grouper species

Alternatives for Action 2

Alternative 1 (No Action). ABCs for select unassessed snapper grouper species are based on the current ABC Control Rule.

Preferred Alternative 2. Assign a risk tolerance scalar to stocks deemed by the SSC to be under low risk of overexploitation (scalar = 2):
- **Sub-alternative 2a.** Apply a risk tolerance scalar of 0.75.
- **Preferred Sub-alternative 2b.** Apply a risk tolerance scalar of 0.90.

Preferred Alternative 3. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderate risk of overexploitation (scalar = 1.5):
- **Sub-alternative 3a.** Apply a risk tolerance scalar of 0.75.
- **Preferred Sub-alternative 3b.** Apply a risk tolerance scalar of 0.80.

Preferred Alternative 4. Assign a risk tolerance scalar to stocks deemed by the SSC to be under moderately high risk of overexploitation (scalar = 1.25):
- **Sub-alternative 4a.** Apply a risk tolerance scalar of 0.70.
- **Sub-alternative 4b.** Apply a risk tolerance scalar of 0.75.
- **Sub-alternative 4c.** Apply a risk tolerance scalar of 0.50.
- **Preferred Sub-alternative 4d.** Apply a risk tolerance scalar of 0.70 for rock hind, tomtate, white grunt and gray triggerfish and 0.50 for scamp.

Snapper Grouper Advisory Panel Comments and Recommendations

During their November 2013 meeting, the AP received an overview of the actions and alternatives included in Amendment 29. At that time, the actions and alternatives were structured differently than they currently are. The AP approved a motion supporting **Sub-alternative 2d** as the preferred sub-alternative under **Action 2**:

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 moderately high risk of overexploitation.

Once re-structured, this sub-alternative became the current South Atlantic Council-preferred **Sub-alternatives 2b** and **3b** and the former South Atlantic Council-preferred **Sub-alternative 4a**. The latter was de-selected as a preferred at the June 2014 South Atlantic Council meeting due to concerns over the scamp stock (see Council's Choice for Preferred Alternative below).

During their November 2013 meeting, the AP also approved a motion to consider a 0.50 risk tolerance level for hogfish. Subsequently, the South Atlantic Council chose to exclude hogfish from Amendment 29 pending the completion of a stock assessment.

At their May 2014 meeting, when the AP again had the opportunity to discuss Amendment 29, and they approved following motion:

THE AP SUPPORTS THE WORK OF THE SSC AND THE ORCS WORKGROUP AND SUPPORTS THE COUNCIL'S PREFERREDS FOR ACTION 2.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

At their May 2014 meeting, the SSC was asked to comment specifically on how to best arrive at an ABC for white grunt given that the SSC assigned a different risk of overexploitation to the "north" and "south" portions of the South Atlantic stock and management at this time remains based on a single stock. The South Atlantic Council proposed using the most conservative risk of overexploitation scalar and applying it to both the "north" and "south" portions of the stock and requested the SSC provide guidance on whether two separate ACLs are needed for this species. The SSC agreed with the South Atlantic Council's proposed approach until a stock assessment can be conducted and the issue of stock structure can be fully explored.

South Atlantic Council's Choice for Preferred Alternative

While the South Atlantic Council reviewed this amendment at their June 2014 meeting with the intent to approve it for formal review, a concern arose regarding the risk tolerance level for scamp. The South Atlantic Council's preferred alternatives under this action would have applied a risk tolerance scalar of 0.90 for stocks with low risk of overexploitation, 0.80 for stocks with moderate risk of overexploitation, and 0.70 for stocks with moderately high risk of overexploitation. However, a Snapper Grouper Committee member questioned the application of the same risk tolerance scalar to both tomtate and scamp. He maintained that scamp are not as abundant as they once were and he expressed concern about the species possibly being overfished. The South Atlantic Council Chair agreed and stated the concern with scamp has been voiced a number of times at the South Atlantic Council level based on trends in the fishery-independent survey catch per unit effort, etc. Additionally, the South Atlantic Council had been requesting that scamp be placed on the stock assessment schedule for a number of years and, while scamp is now on the Southeast Data Assessment and Review schedule, it may be moved down the list or removed altogether due to changing priorities and staffing issues with assessment scientists.

Based on this rationale, the South Atlantic Council directed staff to add a sub-alternative to this action that would keep the risk tolerance level at 0.70 for the rest of the species under a moderately high risk of overexploitation (tomtate, white grunt, gray triggerfish, and rock hind) but place it at 0.50 for scamp. The South Atlantic Council then approved selecting this newly created alternative as their preferred, in addition to the previous preferreds for species under low and moderate risk of overexploitation.

The South Atlantic Council concluded that **Preferred Sub-alternatives 2b**, **3b**, and **4d** best meet the purpose of adjusting the ACLs for select unassessed snapper grouper species based on the best scientific information available and taking into consideration the South Atlantic Council's risk tolerance for the management of these stocks. **Preferred Sub-alternatives 2b**, **3b**, and **4d** also best meet the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.3 Action 3. Establish ACLs for select unassessed snapper grouper species

Alternatives for Action 3

1. (No Action). ACL=OY=Current ABC

2. ACL=OY=Proposed ABC
   - **Preferred 2a.** Snappers Complex
   - **Preferred 2b.** Grunts Complex
   - **Preferred 2c.** Shallow Water Grouper
   - **Preferred 2d.** Bar Jack
   - **Preferred 2e.** Atlantic Spadefish
   - 2f. Scamp
   - **Preferred 2g.** Gray Triggerfish

3. ACL=OY=0.95*Proposed ABC
   - 3a. Snappers Complex
   - 3b. Grunts Complex
   - 3c. Shallow Water Grouper
   - 3d. Bar Jack
   - 3e. Atlantic Spadefish
   - 3f. Scamp
   - 3g. Gray Triggerfish

4. ACL=OY=0.90*Proposed ABC
   - 4a. Snappers Complex
   - 4b. Grunts Complex
   - 4c. Shallow Water Grouper
   - 4d. Bar Jack
   - 4e. Atlantic Spadefish
   - **Preferred 4f. Scamp**
   - 4g. Gray Triggerfish

5. ACL=OY=0.80*Proposed ABC
   - 5a. Snappers Complex
   - 5b. Grunts Complex
   - 5c. Shallow Water Grouper
   - 5d. Bar Jack
   - 5e. Atlantic Spadefish
   - 5f. Scamp
   - 5g. Gray Triggerfish

Snapper Grouper Advisory Panel Comments and Recommendations

At their May 2014 meeting, the AP recommended Alternative 2 as preferred:
Alternative 2. ACL=OY=Proposed ABC

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The South Atlantic Council's SSC did not have specific recommendations for revising the ACLs for unassessed snapper grouper species. In the past, the SSC has stated that since ACLs are a management limit, it is not appropriate for them to offer guidance on the level at which they should be set.

South Atlantic Council's Choice for Preferred Alternative

Initially, the South Atlantic Council had selected to establish the ACL for all species addressed in this amendment at the same level as the proposed ABC (that which resulted from application of the ORCS approach in Action 2). However, due to concern for scamp described in **Section 5.2** above, at their June 2014 meeting, the South Atlantic Council selected to set the ACL for that species below the recommended ABC. Thus, the South Atlantic Council directed staff to maintain the ACL at the same levels as the ABC for the rest of the unassessed snapper grouper species addressed in this amendment, but set the ACL for scamp at 80% of its ABC. To accomplish this in a manner that would maintain the South Atlantic Council's original intent while allowing the flexibility to set ACLs for different species at different levels, alternatives under this action were restructured. Thus, former **Preferred Alternative 2** became **Preferred Sub-alternatives 2a-2e** and **Preferred Sub-alternative 2g**. To address the ACL for scamp, the South Atlantic Council selected **Sub-alternative 5f** as an additional preferred.

However, at their September 2014 meeting, public testimony resulted in an additional change to the preferred alternative for scamp. According to fishermen, setting the ACL at 80% of the ABC would increase the likelihood that the ACL would be reached and an in-season closure would occur. Even though the proposed ACL for this species has not been reached, landings have come close to it. Hence, to prevent negative socio-economic impacts while still taking a more conservative approach to setting the ACL for scamp for the reasons mentioned above, the South Atlantic Council selected **Sub-alternative 4f** as preferred to set the ACL for scamp at 90% of the proposed ABC.

The South Atlantic Council concluded that **Preferred Sub-alternatives 2a-2e**, **2g**, and **4f** best meet the purpose of revising ACLs for unassessed snapper grouper species based on the best available scientific information. The preferred sub-alternatives also best meet the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.4 Action 4. Modify the minimum size limit for gray triggerfish

Alternatives for Action 4

Alternative 1 (No Action). The minimum size limit is 12 inches TL in federal waters off the east coast of Florida and 12 inches FL in state waters off the east coast of Florida.

Alternative 2. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off the east coast of Florida.
Sub-alternative 2a. The minimum size limit applies to the commercial sector.
Sub-alternative 2b. The minimum size limit applies to the recreational sector.

Preferred Alternative 3. Specify a minimum size limit for gray triggerfish of 12 inches fork length (FL) in federal waters off North Carolina, South Carolina, and Georgia.
Preferred Sub-alternative 3a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 3b. The minimum size limit applies to the recreational sector.

Alternative 4. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off North Carolina, South Carolina, Georgia, and the east coast of Florida.
Sub-alternative 4a. The minimum size limit applies to the commercial sector.
Sub-alternative 4b. The minimum size limit applies to the recreational sector.

Preferred Alternative 5. Specify a minimum size limit for gray triggerfish of 14 inches fork length (FL) in federal waters off the east coast of Florida.
Preferred Sub-alternative 5a. The minimum size limit applies to the commercial sector.
Preferred Sub-alternative 5b. The minimum size limit applies to the recreational sector.

Snapper Grouper Advisory Panel Comments and Recommendations

At their November 2013 meeting, the AP approved a motion to recommend to the South Atlantic Council that the minimum size limit for gray triggerfish be set at 14 inches fork length (FL) in federal waters off North Carolina, South Carolina, Georgia, and east Florida.

In May 2014, the AP approved motions to recommend **Alternatives 2** and **3** (and their sub-alternatives) as preferreds. This combination of preferred alternatives would result in a minimum size limit of 12 inches FL for gray triggerfish in federal waters off the South Atlantic states for both the commercial and recreational sectors.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

At their May 2014 meeting, the SSC commented that the change in size limit for gray triggerfish would affect the selectivity in future projections. They recommended that this change in selectivity be addressed when projections are developed after the next stock assessment.

South Atlantic Council's Choice for Preferred Alternative

An action to impose a minimum size limit on gray triggerfish off the Carolinas and Georgia was originally considered in Regulatory Amendment 14 to the Snapper Grouper FMP. At that time, however, the stock assessment for gray triggerfish was underway and the South Atlantic Council decided to remove the gray triggerfish size limit action from the amendment pending completion of the stock assessment. The latter, however, was delayed significantly due to inconsistencies in the age data. The South Atlantic Council then chose to address management of gray triggerfish in Amendment 29, and an action to change the measurement method of gray triggerfish to be consistent between state and federal waters off east Florida was initially included. Prior to public hearings, the South Atlantic Council opted to consider not only addressing measurement inconsistencies off Florida, but also imposing a minimum size limit off the rest of the South Atlantic states. The Snapper Grouper AP originally recommended specifying a 14-inch FL minimum size limit for federal waters under the South Atlantic Council's jurisdiction (see above). Therefore, that alternative was added to the amendment to obtain public comment. However, the South Atlantic Council indicated **Alternative 3** as their preferred while they sought public comment. That alternative proposed a 12-inch FL minimum size limit in federal waters off the four South Atlantic states. In general, the public supported a minimum size limit of 12 inches FL but there were concerns over increased regulatory discards. There was also some public support for a 14-inch FL size limit.

At the March 2014 South Atlantic Council meeting, the Florida representative on the South Atlantic Council requested that an alternative be added to implement a 14-inch FL minimum size limit only off the east coast of Florida. The intent was to bring consistency to Florida regulations since a 14-inch FL minimum size limit for gray triggerfish is already in place for the west coast of Florida and having different size limits for each coast is problematic, particularly in the Florida Keys. In order to accommodate different minimum size limits off Florida versus the rest of the South Atlantic states, **Preferred Alternative 3** was modified to exclude the state of Florida.

After much discussion at the Snapper Grouper Committee level, the South Atlantic Council ultimately selected **Alternatives 3** and **5** as preferreds. The combination of these two alternatives would result in a minimum size limit of 12 inches FL in federal waters off North Carolina, South Carolina, and Georgia, and a 14-inch FL minimum size limit off the east coast of Florida.

The South Atlantic Council concluded that **Preferred Alternative 3** and **Preferred Alternative 5** best meet the purpose of revising management measures for gray triggerfish to ensure overfishing does not occur pending the completion of the stock assessment. **Preferred Alternative 3** and **Preferred Alternative 5** also best meet the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.5 Action 5. Establish a commercial split season for gray triggerfish

Snapper Grouper Advisory Panel Comments and Recommendations

At their November 2013 meeting, the AP recommended that the South Atlantic Council choose **Alternative 2** as preferred:

> **Alternative 2.** Allocate the directed commercial gray triggerfish ACL 50% to the period January 1 through June 30 and 50% to the period July 1 through December 31. Any remaining ACL from season 1 would transfer to season 2. Any remaining ACL from season 2 would not be carried forward.

In addition, the AP recommended that the South Atlantic Council consider a spawning season closure for the commercial sector. At their May 2014 meeting, the AP reiterated their support for **Alternative 2**.

Alternatives for Action 5

Alternative 1 (No Action). The commercial fishing year for gray triggerfish is the calendar year (January 1- December 31). The commercial ACL is allocated for the entire year.

Preferred Alternative 2. Allocate the directed commercial gray triggerfish ACL into two quotas: 50% to the period January 1 through June 30 and 50% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Alternative 3. Allocate the directed commercial gray triggerfish ACL into two quotas: 40% to the period January 1 through June 30 and 60% to the period July 1 through December 31. Any remaining quota from season 1 would transfer to season 2. Any remaining quota from season 2 would not be carried forward.

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC did not have specific guidance or recommendations as this is a management action.

South Atlantic Council's Choice for Preferred Alternative

During their September 2013 meeting, the South Atlantic Council gave direction to staff to include actions proposing a split commercial season and trip limits for gray triggerfish in Amendment 29. The rationale behind that request was to align the commercial harvest of gray triggerfish with that of vermilion snapper, as these are two species that are commonly caught together and, according to fishermen, such "lining up" of the commercial seasons would minimize discard mortality and potentially ensure a more constant supply of fish on the market. The South Atlantic Council responded to fishermen's concerns by selecting **Preferred Alternative 2** to establish a commercial split season for gray triggerfish that would coincide with that which is currently in place for vermilion snapper. Economic analyses for this action (**Section 4.5.2**); however, suggest that a commercial split season for gray triggerfish could also result in closure of commercial harvest for gray triggerfish before other snapper grouper species are open for harvest on May 1. Moreover, "it is not possible to determine accurately what the economic effects of closing the gray triggerfish first season would be prior to the opening of the shallow water grouper season, as this scenario has not occurred in the past" (see **Section 4.5.2**). Nevertheless, the South Atlantic

Council opted to move forward to establish a commercial split season for gray triggerfish as fishermen have requested. Therefore, **Preferred Alternative 2** best meets the need to lengthen to commercial season for gray triggerfish while diminishing and/or preventing derby conditions and best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

5.6 Action 6. Establish a commercial trip limit for gray triggerfish

Snapper Grouper Advisory Panel Comments and Recommendations

At their November 2013 meeting, the AP recommended that the South Atlantic Council consider including step-down trip limit alternatives when a portion of the gray triggerfish commercial ACL (75% or 85%) was met or projected to be met. In addition, the AP recommended a trip limit of 1,000 lbs ww (**Sub-alternative 2b**).

In May 2014, the AP reiterated their support for a 1,000- lb ww trip limit, but also recommended a step-down to 500 lbs ww when 75% of the commercial ACL is met or projected to be met (**Sub-alternative 3b**).

Alternatives for Action 6

Alternative 1 (No Action). There is no commercial trip limit for gray triggerfish in the South Atlantic region.

Preferred Alternative 2. Establish a commercial trip limit for gray triggerfish in the South Atlantic region.

- **Sub-alternative 2a.** 500 pounds whole weight (lbs ww)
- **Preferred Sub-alternative 2b.** 1,000 lbs ww
- **Sub-alternative 2c.** 1,500 lbs ww

Alternative 3. When 75% of the gray triggerfish commercial ACL is met or is projected to be met, the trip limit is reduced to

- **Sub-alternative 3a.** 200 lbs ww
- **Sub-alternative 3b.** 500 lbs ww
- **Sub-alternative 3c.** 750 lbs ww

Law Enforcement Advisory Panel Comments and Recommendations

The LEAP received an overview of the actions contained in Amendment 29 at their March 2014 meeting. The LEAP was encouraged to comment on the amendment, as appropriate. However, the LEAP made no comments or recommendations.

Scientific and Statistical Committee Comments and Recommendations

The SSC offered no comments or recommendations on this action.

South Atlantic Council's Choice for Preferred Alternative

As mentioned in **Section 5.5** above, the South Atlantic Council opted to establish commercial management measures for gray triggerfish in an effort to lengthen the commercial season and in response to fishermen's suggestions. The South Atlantic Council routinely uses trip limits to control the commercial harvest and lengthen seasons. While the South Atlantic Council considered structuring the commercial trip limit in the same manner as that for vermilion snapper (step-down once 75% of the ACL is met), they determined it would not be feasible if gray triggerfish were to remain a target species. That is, a trip-limit step down would have to be low (about 200 lbs ww), to affect season length. However, such a low trip limit is not profitable for some vessels (large vessels and those home-ported far from fishing grounds) and gray triggerfish would essentially become a bycatch species. Therefore, the South Atlantic Council determined **Preferred Sub-alternative 2b** would best meet the intent to lengthen the commercial season for gray triggerfish while minimizing derby conditions. **Preferred Sub-alternative 2b** also best meets the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

Chapter 6. Cumulative Effects

As directed by the Council on Environmental Quality (CEQ) regulations, federal agencies are mandated to assess not only the indirect and direct impacts, but also the cumulative impacts of actions. The CEQ regulations define a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect occurs when the combined effects are greater than the sum of the individual effects.

Bass et al. (2001) presents a five-step process for the analysis of cumulative impacts in an Environmental Assessment in which the following criteria must be identified:

- The area in which the effects of the proposed action will occur.
- The impacts that are expected in that area from the proposed action.
- Other past, present, and reasonably foreseeable actions that have or are expected to have impacts in the area.
- The impacts or expected impacts from these other actions.
- The overall impact that can be expected if the individual impacts are allowed to accumulate.

The area in which the effects of the proposed action will occur.

The area in which the effects of the proposed action would occur include the federal 200-nautical mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West; specifically, the exclusive economic zone of the South Atlantic region. Maps depicting the affected area are presented in **Section 1.3**.

The impacts that are expected in that area from the proposed action.

Amendment 29 proposes actions to: (1) update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Stocks" (ORCS); (2) adjust ABCs, (3) revise annual catch limits (ACLs) based on adjusted ABCs; and (4) establish management measures for gray triggerfish in federal waters of the South Atlantic region. Management measures considered for gray triggerfish include minimum size limits, trip limits, and creating a split season for the commercial sector.

Other past, present, and reasonably foreseeable actions that have or are expected to have impacts in the area, and the impacts or expected impacts from these other actions.

Snapper Grouper Fishery

The snapper grouper fishery has been highly managed and subject to many regulatory changes. The reader is referred to **Appendix D. History of Management** for past regulatory

activity for the snapper grouper fishery. Past regulatory activities that relate to actions contained within Amendment 29 include: Comprehensive ACL Amendment (2011c) and Regulatory Amendment 13 (SAFMC 2013a) to the Snapper Grouper FMP (SAFMC 2013b), which contain actions that would have impacts on the entire snapper grouper fishery. Regulatory Amendment 6 to the Snapper Grouper FMP (SAFMC 1994) established a 12- inch total length size limit for gray triggerfish in federal waters off east Florida.

Recently approved and implemented actions include changes to the ACLs for vermilion snapper, red porgy, yellowtail snapper, and black sea bass based on recent assessments. The Joint Generic Dealer Reporting Amendment affects dealers in eight fishery management plans (FMPs) including the Snapper Grouper FMP. The amendment, which became effective on August 7, 2014, requires that dealers report landings information electronically on a weekly basis to improve the timeliness and accuracy of landings data. The South Atlantic Headboat Reporting Amendment (SAFMC 2014), which was implemented on January 27, 2014, requires that all federally permitted headboats on the South Atlantic report their landings information electronically, and on a weekly basis in order to improve the timeliness and accuracy of harvest data. Amendment 27 to the Snapper Grouper FMP, which was implemented on January 27, 2014, allows captains and crew of for-hire vessels to retain bag limit quantities of all snapper grouper species, and updates the Snapper Grouper Framework Process to allow for expedited changes to harvest levels, and accountability measures (AMs).

Reasonable foreseeable actions related to the snapper grouper fishery include the development of Amendment 36 to the Snapper Grouper FMP, which considers the establishment of Special Management Zones to provide protection to spawning areas for snapper grouper species including speckled hind and warsaw grouper. Amendment 26 to the Snapper Grouper FMP (Comprehensive Ecosystem-Based Amendment 3) proposes changes to the bycatch data collection programs in all the fisheries in the South Atlantic. An emergency rule effective April 17, 2014, addressed the 2013 overfishing and overfished determination for blueline tilefish. The emergency rule temporarily set the blueline tilefish ACL at the equilibrium yield at 75%F_{MSY} = 224,100 pounds whole weight (lbs ww); applied the allocations for blueline tilefish to the 224,100 lbs ww ACL (commercial = 112,207 lbs ww and recreational = 111,893 lbs ww); and adjusted the Deepwater Complex accordingly. Amendment 32 to the Snapper Grouper FMP would modify harvest levels and management measures to end overfishing of blueline tilefish. This amendment would also remove blueline tilefish from the Deepwater Complex. Amendment 33 to the Snapper Grouper FMP would require fillets of snapper grouper species lawfully harvested from The Bahamas to be brought into the United States through the Atlantic exclusive economic zone (EEZ), to have the skin intact. Regulatory Amendment 14 to the Snapper Grouper FMP would modify the commercial and recreational fishing years for greater amberjack and black sea bass; modify trip limits for gag; and revise the recreational AMs for black sea bass and vermilion snapper. The South Atlantic Council sent Regulatory Amendment 14 to NMFS for formal review on January 15, 2014. The proposed rule published on April 25, 2014, and comment period ended on May 27, 2014. Regulatory Amendment 16 would consider the removal and/or modification of the prohibition on the use of black sea bass pots annually from November 1 through April 30. **Appendix D** lists the history of management including amendments, which are under development and may impact aspects of the snapper grouper

fishery. Besides Amendment 29, there are no amendments currently in development that would impact gray triggerfish specifically.

Stressors outside of South Atlantic Council Management

Deepwater Horizon

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, resulting in the release of an estimated 4.9 million barrels of oil into the Gulf. In addition, 1.84 million gallons of Corexit 9500A dispersant were applied as part of the effort to constrain the spill. The cumulative effects from the oil spill and response may not be known for several years.

The oil spill affected more than one-third of the Gulf area from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. The impacts of the Deepwater Horizon MC252 oil spill on the physical environment are expected to be significant and may be long-term. Oil is dispersed on the surface, and because of the heavy use of dispersants, oil is also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf as well as non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are more persistent in the environment and can be transported hundreds of miles. Oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion. Zooplankton that feed on algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow.

The highest concern is that the oil spill may have impacted spawning success of species that spawn in the summer months, either by reducing spawning activity or by reducing survival of the eggs and larvae. Effects on the physical environment, such as low oxygen, could lead to impacts on the ability of larvae and post-larvae to survive, even if they never encounter oil. In addition, effects of oil exposure may create sub-lethal effects on the eggs, larva, and early life stages. The stressors could potentially be additive, and each stressor may increase the susceptibility to the harmful effects of the other.

The oil from the spill site was not been detected in the South Atlantic region, and does not likely pose a threat to the South Atlantic species addressed in this amendment. However, the effects of the oil spill on snapper grouper species would be taken into consideration in future SEDAR assessments. Indirect and inter-related effects on the biological and ecological environment of the snapper grouper fishery in concert with the Deepwater Horizon MC252 oil spill are not well understood. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of populations, combined with any anthropogenically-induced natural mortality that may occur from the impacts of the oil spill. The impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators may be significant in the future.

Climate Change

The Environmental Protection Agency's climate change webpage (http://www.epa.gov/climatechange/) provides basic background information on measured or anticipated effects from global climate change. A compilation of scientific information on climate change can be found in the United Nations Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007). Those findings are incorporated here by reference and are summarized. Global climate change can affect marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, and through increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic carbon dioxide emissions may affect a wide range of organisms and ecosystems. These influences could affect biological factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. Currently, the level of impacts cannot be quantified, nor is the time frame known in which these impacts would occur. These climate changes could have significant effects on southeastern fisheries; however, the extent of these effects is not known at this time (IPCC 2007).

In the southeast, general impacts of climate change have been predicted through modeling, with few studies on specific effects to species. Warming sea temperature trends in the southeast have been documented, and animals must migrate to cooler waters, if possible, if water temperatures exceed survivable ranges (Needham et al. 2012). Higher water temperatures may also allow invasive species to establish communities in areas they may not have been able to survive previously. Climate change may contribute to this increase by increasing rainfall that in turn increases nutrient input from rivers. This increased nutrient load causes algal blooms that, when decomposing, reduce oxygen in the water (Needham et al. 2012; Kennedy et al. 2002). Other potential impacts of climate change to the southeast include increases in hurricanes, decreases in salinity, altered circulation patterns, and sea level rise. The combination of warmer water and expansion of salt marshes inland with sea-level rise may increase productivity of estuarine-dependent species in the short term. However, in the long term, this increased productivity may be temporary because of loss of fishery habitats due to wetland loss (Kennedy et al. 2002). Actions from this amendment are not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing.

However, at this time, the level of impacts on snapper grouper species cannot be quantified, nor is the time frame known in which these impacts would occur.

Weather Variables

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Although these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes.

The overall impact that can be expected if the individual impacts are allowed to accumulate.

Amendment 29 proposes actions to: (1) update the South Atlantic Fishery Management Council's (South Atlantic Council) acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Stocks" (ORCS); (2) adjust ABCs, (3) revise annual catch limits (ACLs) based on adjusted ABCs; and (4) establish management measures for gray triggerfish in federal waters of the South Atlantic region. Management measures considered for gray triggerfish include minimum size limits, trip limits, and creating a split season for the commercial sector. This change would indirectly benefit the biological environment since an approved scientific methodology would be adopted to specify ABCs for snapper grouper species that have not been assessed but for which there are reliable catch statistics. If the South Atlantic Council selects the risk tolerance scalar to achieve the most conservative values of ABC, biological impacts would be minimized. However, while conservative ABCs may provide the greatest biological benefit to the species, higher ABCs would not be expected to negatively impact the stock as long as harvest is maintained at sustainable levels and overfishing does not occur.

Management measures for gray triggerfish include modifying size limits, trip limits, and creating a split season. These measures are intended to slow harvest of gray triggerfish. The cumulative impacts of the actions in the Amendment 29 in conjunction with past, present, and reasonably foreseeable management, as well as other documented stressors are not expected to be significant.

The proposed actions would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places as these are not in the South Atlantic EEZ. This action is not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific cultural, or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the South Atlantic region. The U.S. Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic EEZ. The proposed actions are not likely to cause loss or destruction of these national marine sanctuaries because the actions are not expected to result in appreciable changes to current fishing practices.

Monitoring

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed action relates to the harvest of indigenous species in the Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, these actions do not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

Socio-economic

The actions in Amendment 29 are expected to increase annual commercial landings of bar jack and both annual commercial and recreational landings of gray triggerfish in the South Atlantic Region and change access to the gray triggerfish resource. The overall cumulative social and economic effects are expected to be associated with changes in fishing opportunities due to changes in ACLs and the minimum size limit for gray triggerfish and the creation of two 6-month commercial seasons and a commercial trip limit for gray triggerfish in combination with existing regulations that also affect those opportunities.

Any action has economic and social costs and benefits. The above increases in commercial and recreational landings would economically and socially benefit fishermen, families and communities, but with added economic and social costs associated with longer and/or more fishing trips. The seasonal, trip-limit and size-limit changes in commercial fishing for gray triggerfish may economically and socially cost fishermen, families, and communities by reducing average landings per trip of gray triggerfish; however, those changes may also benefit fishermen, seafood dealers, consumers, families, and communities by expanding the number of months that gray triggerfish is commercially available. Moreover, the changes in commercial fishing for gray triggerfish are expected to improve the stream of benefits over time. However, the net economic and social impacts of the actions are not expected to be equal across the South Atlantic Region. Net annual commercial landings of gray triggerfish are expected to decline, while those in North Carolina, South Carolina, and Georgia are expected to increase.

The commercial and recreational fishing sectors of the snapper grouper fishery have seen significant changes in regulatory actions with limited entry and attempts to pursue other types of management that may seem too restrictive (i.e., individual fishing quotas), as well as closure of waters through the placement of marine protected areas. Furthermore, almost all individuals or businesses with snapper grouper commercial and for-hire fishing permits also hold at least one (and usually multiple) additional commercial or for-hire permits to maintain the opportunity to participate in other fisheries. Commercial fishermen, for-hire vessel owners and crew, and private recreational anglers commonly participate in multiple fisheries throughout the year. Even within the snapper grouper fishery, effort can shift from one species or species complex to another due to environmental, economic, or regulatory changes. Overall, changes in management of one species or species complex in the snapper grouper fishery can impact effort and harvest of another species and/or complex (in the snapper grouper fishery or in another fishery) because of multi-fishery participation that is characteristic in the South Atlantic Region.

With the prior adoption of ACLs and associated AMs, early closures of some species are occurring that can change fishing behavior by fishermen switching to target alternative species in the snapper grouper and other fisheries. If those alternative choices are limited, fishermen are limited in their ability to adapt to and mitigate for regulatory change, which is a primary benefit of multi-fishery participation. With declining fishing options, commercial and for-hire fishermen may need to turn to alternative employment and make changes in personal and household consumption and production that can have further economic and social impacts that extend to the larger community. However, there is insufficient information to determine and assess the magnitude of specific cumulative impacts that could result from switching or other alternative behaviors.

Chapter 7. List of Preparers

Table 7.1.1. List of preparers of the document.

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NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

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NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

Chapter 8. Agencies and Persons Consulted

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List of Agencies, Organizations, and Persons Consulted
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SAFMC Snapper Grouper Advisory Panel
SAFMC Scientific and Statistical Committee
SAFMC Information and Education Advisory Panel
North Carolina Coastal Zone Management Program
South Carolina Coastal Zone Management Program
Georgia Coastal Zone Management Program
Florida Coastal Zone Management Program
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
North Carolina Sea Grant
South Carolina Sea Grant
Georgia Sea Grant
Florida Sea Grant
Atlantic States Marine Fisheries Commission
Gulf and South Atlantic Fisheries Development Foundation
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

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